

Ref No : PUR/GT/IMP/HPC/24/2016-17.

October 17, 2016.

M/s.

Dear Sir/s,

The Director, Indian Institute of Astrophysics, Bangalore, invites Sealed Tenders (both price bid & technical bid) for the Import of “ **7 node High Performance Cluster Computing Server and Storage as per attached specifications - 1 set**” . The terms and conditions may be noted from IIA Website and if you are in a position to quote for the supply in accordance with the requirements, please submit your quotation. The Tender documents and other details are available on IIA web site www.iiap.res.in/tenders.htm. Interested Tenderers may at their option download the same from our website (as no hard copies of Tender documents is/are provided from this office) and submit their offer along with EMD (refundable) & Tender fee (non-refundable) prescribed therein only in the form of Demand draft drawn in favour of The Director, IIA.

The Tender bids must be in foreign currency only. Your completed Tender bids (both Price bid & technical bid) must reach our office on or before 18/11/2016 by 15 30 hrs. The bids must be in a separate Sealed envelopes duly superscribe with the name of the supply, the Due Date and all the envelopes kept in a bid envelopes mentioning Quotation for “ **7 node High Performance Cluster Computing Server and Storage**” **along with EMD & Tender fee** must reach this Office within the Due Date and time. No bids will be considered if prescribed Tender Fee and EMD is not found with the Technical bid. The Technical bids will be opened in the presence of the bidders or their authorized representative of the Company by 15.30 hrs on 18/11/2016. The Price bids will be opened only those vendors quotes qualify in Technical Evaluation. The Price bid opening date will be intimated later. Incomplete Bids are liable for rejection.

For any Technical clarification you may contact during Office hours Mr.Anish Parwage (Phone No.22541319) and for commercial clarifications can be had from Shri K.P.Vishnu Vardhan, Stores & Purchase Officer (Phone No.22541244).

Thanking you,

Yours faithfully,

K.P.Vishnu Vardhan
Stores & Purchase Officer

**GLOBAL TENDER DOCUMENT No : PUR/GT/IMP/HPC/24/16-17.
DT : 17/10/2016.**

TENDER FORM

FROM:

TO

THE DIRECTOR
Indian Institute of Astrophysics,
Bangalore - 560 034.

Sir,

I/We hereby offer to supply the Items/Equipment indicated below at the price hereunder quoted and agree to hold this office open till . I/We shall be bound to supply the items/Equipment hereby offered upon the issue of the Purchase Order communicating to the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items such Items/Equipment. I/We not withstanding that the offer in this tender has not been accepted in whole, shall be bound to supply such items and such portion or portions of one or more of the items as may be specified in the said Purchase order communicating the acceptance.

S No.	Description of the item(s)	Qty.	EMD (refundable)	Tender Fee (non-refundable)
1.	7 node High Performance Cluster Computing Server and Storage as per attached specifications.	1 Unit	75,000/-	500/-

(Tender bids should be in Foreign currency only)

Place at which the Delivery is required : Indian Institute of Astrophysics, Bengaluru - 560 034.

Date by which the supplies are required : 4 weeks from the issue of Purchase order.

2 I/We have understood the items of the tender annexed to the invitation to the Tender and have thoroughly examined the specifications/drawing and / or pattern quoted or referred to herein and / are fully aware of the nature of the items/ Equipment required and my / our offer is to supply the items/ Equipment strictly in accordance with the requirements subject to the terms and conditions contained in the Purchase order communicating the acceptance of this tender either in whole or in part.

Date :

Signature and Seal of Supplier

Annexure - A

INSTRUCTIONS TO SUPPLIERS

1. Tenders should be sent in a sealed and superscribed envelopes with mention of Tender No. date and date of opening. Only one Tender should be sent in each envelope.
2. Late and Delayed tender will not considered at all.
3. Duties, Taxes where legally leviable and intended to be claimed should distinctly shown separately in the Tender.
4. a) Your quotation should be valid for 90-120 days from the date of opening of Tender.
b) Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the Tender from, relationship between the two sets of units must be furnished.
5. a) All available Technical Literature(s), Catalogue(s) and other data in support of the specifications and details of the item(s) should be furnished along with the offer.
b) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should indicated in your offer.
c) Air freight/sea freight charges up to Bangalore Airport may be sent along with the offer.

d) Specifications:

Items / Equipment offered should strictly conform to our specifications. Deviation, if any should be clearly indicated by the Supplier in their quotation. The supplier should also indicate the Make / type No. of the stores offered and provide catalogue(s), Technical literature(s) and sample(s), wherever necessary along with the quotations. Test certificates wherever necessary should be forwarded along with the supplies. Whenever options are called for in our specifications, the Supplier should address all such options. Wherever specifically mentioned by us, the Supplier could suggest changes to specifications with appropriate response for the same.

1. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail.
2. The supplier should supply along with the tender, the Banking information for payment or any other purpose.
3. A complete set of instruction and operation manual should be supplied.
4. Final performance should be guaranteed.

TERMS AND CONDITONS OF CONTRACT

1. DEFINITIONS:

- a) The terms 'Purchaser' shall mean the Director, Indian Institute of Astrophysics, Bangalore - 560 034.
- b) The term 'Supplier' shall mean, the person, firm or company with whom or with which the order for the supply of Items / Equipment is placed.
- c) The terms 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an officer duly authorized intimating the acceptance on behalf the Purchaser on the terms and conditions mentioned or referred to in the said communications accepting the tender or offer of the supplier for supply of Items/Equipment.

2. PRICES:

The price may please be indicated on unit basis only.

Duty Exemption:

Please note that we may issue "Customs duty Exemption Certificate", if acceptable under the Govt. of India notification No.51/96 valid till 2016.

3. GUARANTEE AND REPLACEMENT:

The Supplier shall guarantee that the Items/Equipment supplied shall comply fully with the specifications laid down, for material workmanship and performance. The Guarantee should be for a period of one year minimum from the date of supply.

4. PACKING, FORWARDING AND INSURANCE:

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by air / Sea to withstand transit hazards ensure safe arrival at the destination. The packing and marking of packing shall be done by and at the expenses of the contractor. The Purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the supplier and the Purchase shall pay only for such Items/Equipment as are actually received in good condition, in accordance with contract.

5. TEST CERTIFICATE:

Wherever required Test Certificate should be sent before dispatch of the items.

6. ACCEPTANCE OF ITEMS / EQUIPMENT:

a)It is expressly agreed that the acceptance of Items/Equipment, is subject to final approval by the Purchase, whose decision shall be final.

7. DELIVERY PERIOD:

Delivery is the essence of the contract. The supplier should adhere to delivery schedule as indicated in the Purchase order.

8. EXTENSION OF DELIVERY TIME:

As soon as it is apparent that Supplier dates cannot be adhered to, an application shall be sent by the Supplier to the Purchaser. If failure, on the part of the Supplier to deliver the Items/Equipment in proper time shall have arisen from any cause which the Purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final he may allow such additional time as he considers it to be justified by the circumstances of the case). In case of Letter of Credit the banking charge for the LOC amendment will be on suppliers account.

9. PAYMENT:

Preference will be given to the supplier whose payment terms is on Site Draft.

10. SECURITY FOR PAYMENT:

Successful Supplier will have to furnish in the form of a Bank Guarantee or any other form as called for by the Purchase towards any payments before supply of items/equipment. In case of payment through Letter of Credit the Banking charges outside India and inside India will be on suppliers account.

11. IIA reserves the right to reject any or all the Tenders without assigning any reason.

Stores and Purchase Officer

SN	Items	Descriptions	Qty
1	Master Node: Qty 1 nos		1
	CPU	IntelXeonProcessor Intel Xeon E5-2630v4 10C/20T 2.20 GHz	
	Number of CPU's	2 Sockets scalable - 2 socket populated	
	Chipset	Intel C610 chipset or Higher	
	Memory populated	64GB, 2400MHz DDR4 Registered ECC or higher to meet the performance requirement	
	Memory Features	Advanced ECC, SDDC (Chipkill™), Rank sparing, Memory Mirroring support	
	Memory Scalability	24 DIMM slots	
	Cluster Interconnect	40Gbps High Speed InfiniBand Interconnect HCA or better/Omnipath	
	Management Ports	Atleast 2x1 Gigabit with PXE boot capability	
	External USB ports	Minimum 4 USB 3.0 ports	
	OS HDDs	2x 4TB SATA/SAS 7.2K RPM HotPlug in RAID 1, with 12 disk bay for future expansion	
	RAID	RAID Controller with Hardware RAID 0,1 support	
	Optical Drive	DVD RW Drive	
	Expansion Slots	4 PCIe 3.0 slots - At least 1xPCIe 3.0 x16 slot free	
	Remote Management	OEM Server Management Suite, Integrated remote management controller with dedicated 1GbE with license supporting Media over LAN and Video Redirection.	
	Power Supply	Redundant and Hot Swap energy efficient power supply with minimum (94%) Platinum level efficiency.	
	Fans	Redundant Hot Swap Fans	
Form Factor	1U/2U form factor		
OS Compatibility	RHEL/CentOS compatible, latest version		
Warranty	5 years NBD OEM comprehensive onsite warranty. The OEM should have Service setup in India.		
Bill of Material	The detailed BOM with part codes should be submitted. All the components of the server should be from the same OEM.		
2	Compute Nodes: Qty 7 nos		7
	CPU	Intel Xeon Processor E5-2683 v4 @ 2.10GHz/16-core/40MB Cache	
	Number of CPU's	2 Sockets scalable - 2 socket populated	
	Chipset	Intel C610 chipset or Higher	
	Memory populated	128GB DDR4 Registered ECC, 2400MHz	
	Memory Features	Advanced ECC, SDDC (Chipkill™), Rank sparing, Memory Mirroring support	
	Memory Scalability	24 DIMM slots	
	Cluster Interconnect	40Gbps High Speed InfiniBand Interconnect HCA or better/Omnipath	
	Management Ports	Atleast 2x1 Gigabit with PXE boot capability	
	Hard Disk Storage	2x1TB SATA, 7.2K RPM disk.	
	RAID	RAID Controller with Hardware RAID 0,1 support	

	Expansion Slots	4 PCIe 3.0 slots - At least 1xPCIe 3.0 x16 slot free	
	Remote Management	OEM Server Management Suite, Integrated remote management controller with dedicated 1GbE with license supporting Media over LAN and Video Redirection.	
	Power Supply	Node/Enclosure Redundant and Hot Swap energy efficient power supply with minimum (94%) Platinum level efficiency.	
	Fans	Redundant Hot Swap Fans	
	Form Factor	1U/2U or Dense Rack form factor	
	OS Compatibility	RHEL/CentOS compatible, latest version	
	Warranty	5 years NBD OEM comprehensive onsite warranty with back-to-back OEM support. The OEM should have Service setup in India.	
	Bill of Material	The detailed BOM with part codes should be submitted. All the components of the server should be from the same OEM.	
3	Storage Node: Qty 1nos		1
	CPU	Intel Xeon E5-2630v4 @ 2.20GHz/10-core/25MB Cache	
	Number of CPU's	2 Sockets scalable - 2 socket populated	
	Memory populated	64GB, 2400MHz DDR4 Registered ECC or higher to meet the performance requirement	
	Memory Scalability	24 DIMM slots	
	Memory Features	Advanced ECC, SDDC (Chipkill™), Rank sparing, Memory Mirroring support	
	Chipset	Intel C610 chipset or Higher	
	Cluster Interconnect	40Gbps High Speed InfiniBand Interconnect HCA or better/Omnipath	
	OS Disk	2 x 1TB SATA, 7.2K RPM	
	Storage Disk	12 x 4TB SATA/SAS 6G 7.2k rpm Hot Plug Drives	
	RAID Controller	RAID Controller with RAID 0,1,5,& 6 support with min 2 GB battery backed cache	
	Management Ports	Atleast 4 x1 Gigabit with PXE boot capability	
	Remote Management	OEM Server Management Suite, Integrated remote management controller with dedicated 1GbE with license supporting Media over LAN and Video Redirection.	
	Power Supply	Redundant and Hot Swap energy efficient power supply with minimum (94%) Platinum level efficiency.	
	Fans	Redundant Hot Swap Fans	
	Form Factor	2U or better form factor	
	OS Compatibility	RHEL/CentOS compatible, latest version	
	Warranty	5 years NBD OEM comprehensive onsite warranty with back-to-back OEM support. The OEM should have Service setup in India.	
	Bill of Material	The detailed BOM with part codes should be submitted. All the components of the server should be from the same OEM.	
4	Cluster Interconnect Switch : Qty 1 nos		1
		High speed Infiniband Interconnect Network	
		All the Compute nodes & Master nodes are connected using a Infiniband interconnect switch. This configuration of the interconnect is as below	

		InfiniBand 40 Gbps - 18 Port Interconnect switch. Port to port communication bandwidth between the nodes should be at least 40Gbps in non blocking mode. With Redundant power supply. Appropriate length & number of cables to be provided for complete solution along with the rack mounting kit.	
		The vendor can also quote with an equivalent or better solution for the same, compatible with the inter connects on the servers.	
5	Cluster Management Switch : Qty 1 nos		1
		24 Port x 1Gbps switch for Secondary interconnect/Management Network with required number of cables and rack mounting kit.	
6	Cluster Studio	Intel® Parallel Studio XE Cluster Edition for Linux-Floating Academic 2 seat pack (ESD), with 3 year.	1
		Training on intel software tools from Intel team	

7	Cluster Manager	
		GUI (Web) Cluster Management (Add, Modify, Delete Compute Nodes)
		Profile based compute node, storage node provisioning & de-provisioning
		Fully automated system image, scheduler, monitoring software provisioning from Cluster Management Portal
		Managed Services from cluster tool (DNS, DHCP, NIS etc.)
		GUI (Web) Cluster Monitoring (CPU, Memory, Network & Disks)
		Cluster tool must support various flavor of Linux OS Redhat, Cent OS etc.
		Power Management support
Parallel command execution		

8	Workload Management Software with Portal	
	Feature	Description
	GUI(Web) based Job Submission	Submit Jobs from any location using web Browser.
	Personalized Job lists and Job status information.	End users quickly learn to manage and track their jobs, reducing administrative support burden.
	E mail notifications	End users can receive notification when jobs begin, finish or fail allowing them to track their jobs without login into Web portal.
	Portal	Submit jobs without downloading or configuring software for the clients, minimizing impact on network and cluster infrastructure.
	Credential specific access and submission	Software intelligently applies rules based on the user, group, quality of service, etc. of submitter.
	Management of Jobs	Allow future modification and/or resubmission of Jobs.

GUI based Submission	No need to worry about writing complicated scripts.
Flexible Authentication	Portal Integration with existing LDAP or NIS Authentication system of organization or Cluster.
Monitoring	Real time Resource monitoring of cluster. As well as individual GUI Job monitoring by users. And viewing historical data of cluster resource usage.
Reporting	Generate reports on Cluster usage
Others	Job scheduler should have all features to support application level checkpointing and restart capabilities.
	The queue configuration and scheduling policy will be shared with the integrator at the time of installation.
	Bidder should integrate and test user applications with batch submission script to facilitate seamless usage of the HPC system. Application will be specified to the integrator at the time of installation.
	Any jobs submitted without using job scheduler should be killed automatically.
	Application level check-pointing to be enabled with job scheduler

Prices quoted in USD are CIF, Bangaluru.

9 Implementation of HPC

The vendor shall install and configure all required hardware and open source software suites, including but not limited to racking and stacking, cluster networking, configuring all nodes, installation of open source compilers and applications, configuration of environment variables and license utility configuration.

The vendor to ensure that the hardware and software components are compatible with each other, and provide necessary cables/wires and any other accessories necessary for connecting/mounting the supplied components. Bidder will be responsible for installation, configuration and commissioning of the complete solution interconnecting all the components above, before handing over the system to IIA.

In case of open source Cluster manager and Workload Management Software with portal, the bidder will have to give it in writing that they will be providing the all needed support for the installation and maintenance of the complete software for the entire warranty period.

10 Bidder/OEM Eligibility

Proposed compute OEM brand should have at least 10 (TEN) HPC installations in latest listing of worldwide Top 500 supercomputer list.

The bidder should submit the authorization letter from the OEM for to bid against this particular tender requirement. Bidders must have local registered office in Bangalore.

The compute brand OEM must have sales & support office in Bangalore, submit the confirmation & details on OEM letterhead.

The bidder should have set up at least 3 or more numbers of HPCs in the last three years with minimum peak speed of 10 Tera Flops or more. Purchase order copies/installations reports of previous installations to be submitted along with contact nos. of the person. Bidders also need to provide Client appreciation letter for the support provided for atleast 1 of these installations.

11 Additional

Documentation, soft copy of installation, administration and user manual has to be submitted.

One day training for IIA staff for managing and operating the cluster.

Per Unit price of each Server type should be provided, quantity may increase/decrease at the discretion of IIA. Hardisk quantity of the storage server and the memory modules of the compute nodes may increase/decrease at the discretion of IIA at the time of release of the PO.

The vendor should give the power and cooling requirements for the cluster solution along with the proposal. Requirement for minimum cooling and power would be preferred

The bidder should have a support center for HPC and the team structure with call logging details and escalation matrix has to be provided

Installation and maintenance charges should be mentioned if applicable.



