



**Department of Mechanical Engineering,
Indian Institute of Technology Madras
Chennai – 36**

**Dr. V V S D Ratna Kumar Annabattula & Dr. Manoj Pandey
Project Coordinators**

**Phone :044-2257 4719
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Tender Date: 15.06.2015

Due Date: 10.07.2015

Reference: MECH/VVSDRK-MP/CLUSTER/2015/ENQ1

Dear Sir,

1. Quotations are invited in duplicate for the various items shown in Annexure-I.
2. The quotations are to be in two parts **as Technical Offer and as Commercial offer**:
3. The two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in separate envelopes must be enclosed in the one bigger envelope duly sealed and super scribed with reference number and due date and must be addressed to the undersigned so as to reach him on or before the due date stipulated above.
4. Fax and Email quotation are not acceptable.
5. Quotations should be valid for 60 days from the due date and period of delivery required, warranty terms etc. should also be clearly indicated. A minimum of one year warranty is required from the date of commissioning.
6. Imported supplies should be quoted for **CIF Madras**.
7. Local firms to quote for free delivery to this Institute. If quoted for Ex-Godown delivery charges be indicated separately.
8. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples / machine/ equipment if called for should be submitted / demonstrated at free of charges, and collected back at the supplier's expenses. Compliancy certificate is to be provided indicating conformity to the technical specifications
9. Sales Tax/General Taxes/ED if applicable and such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. If this is not indicated no such claim will be admitted at any stage. The taxes leviable should take into consideration that we are entitled to have concessional Sales Tax applicable to Non-Government Educational Institutions run with no profit motive for which a concession is given. Sales Tax Certificate will be issued at the time of final settlement of the bill.
10. Goods should be supplied carriage paid and insured.
11. Goods shall not be supplied without an official supply order.
12. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
13. The Guarantee period of the item may be indicated clearly.
14. In case of LC. Payment, 90% of the payment will be made after completion of the supply. The balance 10% of the payment will be made after satisfactory installation of the equipment.
15. IIT Madras is exempt from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand. IIT Madras will make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges.
16. **Acceptance and Rejection**:- I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

Yours faithfully

-sd-

Project coordinators

Annexure – I

Specifications for the HPC cluster

Sl. No	Parameters	Values or Notes
<u>Master Node: Quantity 1</u>		
1	Processor	2 x Intel Xeon E5-2630V3 (2.4GHz/ 8-Core /20MB / 8.0GT-s QPI)
2	Memory	128GB (8x 16GB) DDR4 Reg. ECC 2133MHz (8GB/core) with necessary free slots and provision to add at least another 128GB in future
3	Internal Storage	5x 3TB hot-swap SATA Enterprise class 7.2K rpm (RAW) with total 8 HDD bays
4	RAID Card	1x 8-Port RAID Card supporting RAID 0, 1, 5 & 6
5	I/O Ports	1x Single-Port QDR Infiniband Adpater, 1x 2M QDR QSFP Infiniband Cable, 2x Gigabit Ethernet Port and 1x Dedicated LAN for system management
6	DVD Writer	Internal DVD Writer
7	Power Supply	Redundant Platinum Level (94%) Power Supplies
8	Mount Type	Rack mount Rail Kit
9	Warranty	3 years on-site comprehensive warranty
<u>Compute Node: Quantity 6</u>		
10	Processor	2 x Intel Xeon E5-2630V3 (2.4GHz/ 8-Core / 20MB / 8.0GT-s QPI)
11	Memory	64GB (4x 16GB) DDR4 Reg. ECC 2133MHz (4GB/core) with necessary free slots and provision to add at least another 64 GB in future
12	Internal Storage	1x500GB hot-swap SATA Enterprise class 7.2K rpm
13	I/O Ports	1x Single-Port QDR Infiniband Adpater, 1x 2M QDR QSFP Infiniband Cable, 2x Gigabit Ethernet Port and 1x Dedicated LAN for system management
14	Power Supply	Redundant Platinum Level (94%) Power Supplies

15	Mount type	Rack mount Rail Kit
16	Warranty	3 years on-site comprehensive warranty
<u>Primary Interconnect: Infiniband Switch</u>		
17	Infiniband Switch	1x 18-Port QDR QSFP Infiniband Switch
<u>Secondary Interconnect: Gigabit Ethernet Switch</u>		
18	Gigabit Ethernet Switch	1x 24-Port Gigabit Ethernet Switch with required number of cables to connect all nodes
<u>Cluster Management & Monitoring Software:</u>		
<u>(Optional but mandatory to quote)</u>		
19	Specifications	<ul style="list-style-type: none"> ⤴ GUI based Cluster Management (Add, Modify, Delete Compute Nodes). ⤴ Fully automated system provisioning ⤴ GUI Interface for Monitoring overall health of cluster ⤴ GUI Interface for cluster Provisioning and Management ⤴ Profile based compute node, storage node provisioning ⤴ Managed Services from cluster tool (DNS, DHCP, NIS etc.) ⤴ Must support various flavor of Linux OS RedHat and CentOS ⤴ Must support configuring InfiniBand & GigE network ports of compute nodes, port bonding etc. ⤴ Configuration Automation (installation of Application in compute node through Cluster Management Tool) ⤴ Add/Delete/Disable users, group ⤴ Monitor cluster nodes status including drill-down of monitored events ⤴ User-friendly GUI Web based portal for Job submission. ⤴ Secure and Authorized access to cluster resources. ⤴ Support for integration with LDAP/ADS for user authentication. ⤴ Application integration with the portal. ⤴ Quoted Job Scheduler integration with the

		<p>GUI portal</p> <ul style="list-style-type: none"> ▲ Cluster health reporting ▲ GUI display of Cluster Hardware & Software configuration
20	Supplier capability	<ul style="list-style-type: none"> • OEM (Manufactures) should have at least 2 HPC installations in latest listing of Top 500 supercomputer list. • The bidder (System Integrator) should submit the authorization letter from the OEM's. OEM should authorize only one bidder & the bidder also bid only one OEM product. • The bidder (System Integrator) or OEM should have Technical expertise in implementing cluster, which includes installation configuration, maintenance and customization as per requirement. • Master/Head Node, Compute software should be from the same OEM.
21	Other conditions	<ul style="list-style-type: none"> • The server and all its components should be verified and recommended by the motherboard manufacturer by means of compatibility list. • The part number/model numbers of the memory and HDD should be provided. • The compute nodes should be dense rack form factor designed for cluster solution and should be in the lowest foot print and the lowest power consumption
22	Installation, Warranty and Training	<ul style="list-style-type: none"> • 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 the supplied components. Bidder must install the complete system interconnecting all the components above. • A half-a-day admin and user training on the cluster usage and administration must be provided.

23	Compliance statement	<ul style="list-style-type: none">• Compliance statement needs to be provided by vendors clearly specifying COMPLY/NON COMPLY with remarks of all of the points mentioned above.
Note: It will be sole discretion of IITM to choose one or more technical qualified vendors. Compliance to this point is mandatory.		

Note:

The sealed quotations to be sent to

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