INDIAN INSTITUTE OF TECHNOLOGY KANPUR
Department of Chemistry

Enquiry No: **CHM/NN/2013-14/03**

Enquiry Date: **11th Oct., 2013**

Last Date of Submission: **24th Oct. (2013) by 13:00 Hrs**

Formal quotations are invited for HPC cluster. Sealed quotations have to reach in the following address by the last date & time as mentioned above:

Dr. Nisanth N. Nair
Department of Chemistry
Indian Institute of Technology Kanpur
Kanpur, 208016, India

Detailed specifications are given below. The following points may kindly be noted and technical compliance should be clearly stated in the quotation:

• Bidder should be OEM/Authorized Partner/service provider of the OEM and a Letter of Authorization from OEM for the same and specific to the tender should also be enclosed

• The bidder should have installed at least 5 compute clusters last five years and with at least one installation having 24 or more nodes interconnected by Infiniband network. Details of these previous installations must be provided. In addition, vendor should provide a guarantee for clustering and also for application software integration. Signed and sealed installation reports to be provided in the name of the bidder.

• The bidder should be financially sound to execute the order, its annual turnover of at least 10 Crores each in the last three financial years.

• International OEM with at least 5 entries in the last 3 consecutive released lists (June 2013, Nov 2012, June 2012) of top500 (www.top500.org) should only quote. One OEM can give only one quote either directly or through an authorized partner or service provider.

• The bidder should give the power and cooling requirements for the cluster solution along with the proposal.

• Equivalent (or better) hardware/software can be allowed at the discretion of IIT. However, in such cases, the vendor must provide sufficient justification for the deviation from the specifications given here.

• Warranty period (minimum 3 years comprehensive on-site warranty on complete High Performance Computing stack) should be mentioned.

• The bidder is also required to maintain integration of licensed software (if any) with the cluster throughout the warranty period.

• Unit Prices should be quoted for every component. The prices can be in INR or in valid foreign currencies (e.g. US Dollar). For INR quotations, delivery should preferably be up to IIT K. For foreign currency quotations rates must be for CIF New Delhi. Sales Tax, VAT and any other applicable charges should be mentioned.

• Quantity may increase or decrease at the discretion of IIT Kanpur.

• Installation and maintenance charges should be mentioned.

• Bidders are required to quote per node cost for compute server.

• Terms and Conditions, and deviations should be clearly stated with the signature of the responsible person.

- Scope of the work should be clearly stated in the quotation.

- Vendor should install the full cluster, and essential softwares like MPI and Intel Fortran Compiler[1] should be installed and integrated. The following software[1] *provided by us* should be installed, and their parallel performance should be optimized in the installed cluster: CPMD, Quantum-Espresso, AMBER, Gaussian09-Linda. LINPACK performance data after the installation should be reported.

- Cabling should be neatly carried out during the installation, with appropriate labels on the optical, network and power cables at both ends. Required length of the cables for carrying out proper cabling should be included in the proposal.

- Installation has to be carried out on the installed 19” 42U racks at the HPC Server Room No. 2 of the Computer Center, IIT Kanpur.

- For any clarifications, bidders can contact Dr. Nisanth N. Nair by email (nnair @ iitk.ac.in, nisanth.nnair @ gmail.com) before the given deadline.

1 Intel Fortran Compiler will be provided by us for the installation. The price for the compiler should not be quoted.

SPECIFICATIONS

A) Head Node (Rack server) : Qty 1

Form Factor	2U Rack mount
Processor	2x 8-core Intel Xeon® E5-2650V2 processor 20 MB Cache per processor
RAM	32GB RAM DDR3, 1866MHz
DVD Drive	1 drive should be present
Storage	At least 6 ports should be available for the storage; 6 Gbps hardware RAID-0, -1, -10,5,6 ; 3 x 4 TB SATA HDD, hot-plug drives
Ports	4 × 1 GbE ports, 1x QDR Infiniband port
Slots	4-6 PCIe Gen 3 slots
Power Supply	Redundant and Hotplug with 80 PLUS Platinum compliance Power supply and Redundant and Hotplug Fans
Management	Management Port should be provided along with Licensed Management Software from proposed OEM
Accessories	1x 18.5" LCD monitor 1x keyboard 1x mouse
Miscellaneous	TPM 1.2 Certification is required

B) Compute Nodes: Qty 8

Form Factor	1U Rack mount
Processor	2x 8-core Intel Xeon® E5-2650V2 processor 20 MB Cache per processor
RAM	32GB RAM DDR3, 1866MHz
Storage	1 x 500GB SATA Disk
Ports	Dual gigabit NIC, 1 x QDR Infiniband port
Power Supply	Redundant and hot-plug Power Supply and Fans
Management	Management Port should be provided along with Licensed Management Software from proposed OEM
Certification	TPM 1.2 Certification is required

C) Infiniband QDR Switch - 1

- 18 ports 4x QDR Infiniband switch configured in 100% non-blocking Fat Tree Topology to support servers in solution
- Compatibility with OFED (OpenFabric Infiniband stack), OpenSM and OpenMPI; should provide full quoted performance on open source software (Linux-OFED-OpenMPI)
- 19” rack mountable.
- All software/firmware/drivers should be supplied.
- Appropriate length QSFP Cable to be supplied. Numbers and length should be specified in the quotation.

D) Ethernet switch - 1

- 24 Port or higher port 10/100/1000 Mbps Ethernet switch with auto sensing of link speed on all ports
- 19” rack mountable
- Appropriate length cables to be provided; numbers and length should be specified in the quotation.

E) Linux Operating System:

- Any linux open source software suitable for HPC installation.
- OpenPBS/Open GridEngine should be installed for queue management

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http://home.iitk.ac.in/~nnair/