

Department of Mathematics & Statistics, IIT Kanpur

Quotations invited

12-September-2013

From:

Prof. D. Kundu
Head
Mathematics & Statistics, IIT Kanpur
Kanpur - 208016

• **Enquiry No: Math/September/020**

- Opening date: 12 September 2013
- Closing date: 21 September 2013
- Essential requirement:

HPC Cluster

Sealed quotations are invited for all the enquiries with the specification outlined below. Quotations may be sent by post/courier to the above mentioned address. Detailed specifications are given below.

The following points may kindly be noted and technical compliance should be clearly stated in the quotation:

- The vendor should have installed at least 5 compute clusters in India in last five years. Details of these previous installations must be provided. In addition, Vendor should provide a guarantee for clustering and also for application software integration.
- The vendor 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 KANPUR.

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 (24x7, 4 Hrs service) on complete High Performance Computing stack) should be mentioned.**

• The vendor should be able to install and integrate (in parallel) Linux operating system with usual cluster management software such as ROCKS. Standard open source (or free academic version) compilers for C/C++ and FORTRAN, and open source mathematical libraries like BLAS, ATLAS, MPI, Open MP, Pthreads libraries should also be installed. The vendor should also install common molecular simulation software, such as LAMMPS, DLPOLY, GROMACS, CPMD etc. (Licensed versions of these packages will be provided by us). NUT (Network UPS Tools, <http://www.networkupstools.org/>) should be installed and configured with the UPS available at the laboratory. A batch job queuing system like open PBS has to be installed and configured. The vendor is also required to maintain integration of licensed software with the cluster throughout the warranty period.

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

• Installation and maintenance charges should be mentioned.

• Technical and Commercial quote should be in separate envelop. Qty may increase or decrease. Pls quote for stand alone Compute Node also

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

HPC Cluster	
A) Head Node (Rack server) Qty 1	
Form factor/height	2U Rack
Processor	2x 6-core Intel Xeon® E5-2620 series processors
Cache	15 MB per processor
Memory	64 GB RAM DDR3, 1333 or higher MHz scalable Up to 768 GB
Media bays	DVD Drive
Disk	2x500GB SATA HDD
RAID support	RAID on motherboard, integrated 6 Gbps hardware RAID-0, -1, -10
Network interface	4 × 1 GbE ports, Single QDR Infiniband port
PCIe 3.0 Slots	4 - 6 PCIe Gen 3 slots
Power Supply	Redundant and Hotswap with 80 PLUS Platinum compliance
Fans	Redundant and Hotswap
Systems management	IMM2, Predictive Failure Analysis, Diagnostic LEDs, light path diagnostics panel, Automatic Server Restart
Operating systems supported	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server
KVM	1U TFT Monitor, Keyboard and Mouse from Server OEM only
Trusted Platform Module	TPM 1.2 Certified
Warranty	3-year onsite
B) Compute Nodes : Qty 10	
Form factor/height	1U Rack Mountable only
Processor	Two 8-core Intel® Xeon® E5-2650 processors
Cache	20 MB per processor
Memory (max)	64GB DDR3 RAM, 1333 or higher MHz scalable Up to 768 GB

Handwritten signature: d Kunnol

Expansion slots	Up to 2 PCIe Gen 3.0 slots
Disk (Disk Capacity)	500GB SATA Disk
Network interface	2 × 1 GbE (std.), InfiniBand QDR port
Power supply	Non Redundant with 80 PLUS Platinum compliance.
Fans	Redundant and Hotswap
System management	IMM2, Predictive Failure Analysis, Diagnostic LEDs, light path diagnostics panel, Automatic Server Restart
Trusted Platform Module	TPM 1.2 Certified
Operating systems	Red Hat Enterprise Linux, SUSE Linux Enterprise Server, Microsoft Windows Server 2008 R2
Warranty	3-year onsite

C) High Speed Communication Interconnect, Infiniband QDR Switch with support from Server OEM during warranty period- 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
24U OEM Rack*

All software/firmware/drivers should be supplied

Appropriate length QSFP Cable to be proposed

D) Ethernet switch with support from Server OEM during warranty period - 1

*26 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

E) Operating System Linux (Open source with 3 years support)

F) 42U OEM Rack (Optional)

Make: HP / IBM / DELL

(Please mention Academic Discount)

Note: Payment terms will be as per IIT Kanpur rules. Validity of the quote should be for a minimum of 60 days.

A Kundu
D. Kundu