

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
Materials Science and Engineering

Enquiry NO: MSE/11/06/2013
Enquiry Date: 11th June, 2013
Submission Date: 18th June, 2013 by 1300Hrs

Formal quotations are invited for HPC cluster.
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 five 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. International OEM with at least 20 entry in top500 org should only quote.
- 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. 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 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 Quantum Espresso, Siesta, 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 K. 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.
- Quotations should be sent at the contact address (below) on or before 20th June 2013 in a sealed envelope. Technical and Commercial quote should be in separate envelop.
- Terms and Conditions, and deviations should be clearly stated with the signature of the responsible person.

SPECIFICATIONS

MASTER NODE (Quantity 1):

Chassis 2U Rack mount
4 x AMD 6272 16 core CPU 2.1GHz
Cache 16 MB Level 3 (L3) per CPU
Chipset AMD SR5690 and SP5100
Memory 2 GB per core, i.e., 128 GB DDR3 (max 1 TB, 32 DIMMs) in total.
Expansion slots -2 x PCIe slots Gen 2.0x16 slots, 1 x PCIe slots Gen 2.0x8 slots
HDD 4 x 2 TB SATA disk 7200 RPM with hardware RAID card and RAID 5 Management IPMI 2.0 with virtual media over LAN and KVM-over-LAN Support
Graphics Matrox G200eW 16 MD DDR2 on-board
Integrated quad Gigabit Ethernet (GbE) ports, single port QDR infiniband
Ports 1xserial, 1xVGA, 2 USB2.0, RJ45 LAN ports, 2xPS/2, 1xManagement port
Power supply One/three 1400 W high-efficiency redundant power supply,
Quote for max power supply

COMPUTE NODE (Quantity 4):

Chassis 1U Rack mount
4 x AMD 6272 16 core CPU 2.1GHz
Chipset AMD SR5690 and SP5100
Memory 2 GB per core, i.e., 128 GB DDR3 (max 512 GB, 16 DIMMs) in total on each node.

Expansion slots – 1 x PCIe slots Gen 2.0x16 slots (via riser card)
HDD 1 x 2 TB SATA disk 7200 RPM with RAID 0, 1, 10
Management – IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
Graphics Matrox G200eW 16 MD DDR2 on-board
Integrated quad Gigabit Ethernet (GbE) ports, single port QDR infiniband
Ports 1xserial, 1xVGA, 2 USB2.0, RJ45 LAN ports, 2xPS/2, 1xManagement port
Power supply One/three 1400 W high-efficiency redundant power supply,
Quote for max power supply

Accessories

Required power strips, redundant fans
1U Rack Mount Console with KBD and mouse
Display : 17inches TFT monitor
Mouse : Optical (Quantity 1)
Keyboard : 104 keys keyboard (PS/2)- (Quantity 1)
IB switch 8 Port IB Switch with appropriate cables
8 port Gigabit Ethernet Switch with required patch cords for MPI connectivity between master and compute nodes. All relevant software for connectivity has to be provided. Vendor to give details of bundled software offered.
Integrated remote management card for Out of Band alerting, status,inventory, and troubleshooting via Secure Web GUI / CLI (telnet/SSH),Remote Virtual Media (vMedia) and Virtual KVM (vKVM),IPMI 2.0 support, Chassis Management with redundant dedicated NICs; A microcontroller should be responsible for acting as an interface or gateway between the host system (i.e., server management software) and the periphery devices.; Should support web GUI,HW update, Firmware rollback, OS Deployment, Life Cycle Log,View hardware sensors (temperature, voltage, presence, error sensors),Error alerts (server reset, critical sensor values, etc.) using email traps, paging, etc.,IPv6,WS-MAN/SMASH-CLP
System management - Server OEM browser based software for monitoring Managing and configuring servers. Should provide comprehensive fault / performance management.
Remote management-Hardware based, OS independent Remote management solution. All software should be browser based interface. GUI based remote console should also be supported. Power monitoring should be provided.

Somnath Bhowmick
Assistant Professor
Materials Science and Engineering
Indian Institute of Technology
Kanpur-208016, U. P., India
Office: 406, Faculty Building
Phone: +91 512 259 7161
Email: somnath.bhowmick@gmail.com
Email: bsomnath@iitk.ac.in
<http://sommnath.bhowmick.googlepages.com/>