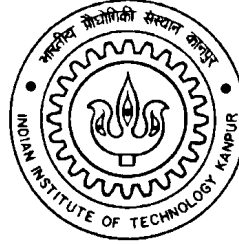**Dr. S. Sarkar**
Professor

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Date: 17.11.2011

Enquiry letter for purchase of cluster

Sub: **Quotation for supply of (1+16) node High Performance cluster with Infiniband & Gigabit backbone**

Sir / Madam,

With reference to the subject mentioned above, you are invited to submit the quotation in a sealed cover. Configuration/Specification and required quantity of items are given below:

1+16 node cluster (Summary)

Requirement	HPC Cluster for 16 Node
Master Node (One)	1) Intel 2x Hex Core X5675 3.06 Ghz CPU based Server 2) 12*1 TB SATA Disk 7200 RPM 3) 16 GB Memory 2GB/Core, ECC DDR3 1333MHz 4) Infiniband Single-port QSFP QDR IB PCI-E 2.0 HCA
Compute Nodes (Sixteen)	1) Intel 2x HexCore X5675 3.06 Ghz CPU based Server 2) 300GB 10K 6Gbps SAS 2.5" SFF HDD 3) Memory @ 2GB/Core, ECC DDR3 1333MHz 4) Infiniband Single-port QSFP QDR IB PCI-E 2.0 HCA
Interconnect	36 Port 40 Gbps Inifiniband Switch
	48 Port 1 Gbps Network Switch for Cluster Admin
	17x CAT 5/6 5Mtr cables with RJ45 connectors
	17 x QDR Copper QSFP Cables, 3Mtr
KVM	1 U KVM Switch
	1 U KVM (Monitor/ Keyboard/Mouse)
Rack	42 U Rack

1+16 node cluster (Master Node Specs details)

Feature	Minimum Specifications
Form Factor	1U/2U form factor server only.
Server Type	Rack server, 19" Rack Mountable
Server Make	International OEM Make only with at least 4% share in top 500.ORG
Processor Sockets	Maximum up to 2 processor sockets of Intel 5600 series cpus
CPU	2 *Hex Core Intel X5676 3.06 Ghz with 12MB L3 cache
Chipset	Intel 5520 Chipset
Memory Capacity	16GB RAM with 4*4GB Dual Rank DD3 RDIMM. Scalability up to 144GB
HDDs Bays	Minimum 2 Hdds 2.5 - inch SAS/SATA
No.of HDDs	12*1 TB SATA Hard disks, 7200 rpm
Optical Drive	DVD RW(Internal or External)
PCI-E slots	Minimum 1 PCI-E slot, filled with single port QDR Infiniband adaptor
Ethernet	Two Gigabit Ethernet ports should be present on the motherboard only.
Ports	Two USB (Vers 2.0), graphics (DB-15) serial (9-pin), two Ethernet (RJ-45), one RJ-45 (sys mgmt)
Raid Controller	Raid Controller required for Raid 0,1,1E,5,50
Power supplies	Redundant power supplies required (90% efficient)
Fans	Temperature-controlled fans, which adjust to compensate for changing thermal characteristics.
Systems Management HW &TPM	HW required for remote presence enablement. TPM 1.2 is required.
Systems Management SW	Vendor to provide software for managing all the servers. S/W should provide a single view to monitor health of the components of all the servers in the network. Software should be able to manage other x86 servers. Software should manage the Patch updates of operating system, Monitor Power for servers , Monitor health and resource utilization . Software should be able to manage both physical and virtual machines in the Network.
Diagnostics	LED lights indicate failing component required for cpu, memory, hdds, to send pre-failure alerts to the administrator. They should be persistent without power.
Limited Warranty	3-year onsite, 9x5
OS Certifications	Server should be certified on latest version of Microsoft Windows, RHEL, SLES, Vmware
Certification	UL & FCC Certified

1+16 node cluster (Compute Node Specs details)

Feature	Minimum Technical Specifications
Form Factor	1U for Server
2U Chassis	Chassis should fit in standard 19" racks and have tool-less physical management features to provide maintenance or replacement.
Server Type	Rack server , 19" Rack Mountable
Server Make	International OEM Make only with at least 4% share in top 500.ORG
Processor Sockets	Maximum up to 2 processor sockets of Intel 5600 Series CPU's
CPU	2 *Hex Core Intel X5675 3.06 Ghz with 12MB L3 cache
Chipset	Intel 5520 Chipset
Memory Capacity	24GB RAM with 6*4GB Dual Rank DD3 RDIMM. Scalability up to 192GB
No.of HDDs	300GB 10K 6Gbps SAS 2.5" SFF HDD
PCI-E slots	Minimum 1PCI-E slot, to be used for installing single port QDR Infiniband adaptor
Ethernet	Two Gigabit Ethernet ports should be present on the motherboard only.
Ports	Two USB (Vers 2.0), graphics (DB-15) serial (9-pin), graphics (DB-15), two ethernet(RJ-45), one RJ-45 (sys mgmt)
Power supplies	Power supplies required (90% efficient)
Fans	Temperature-controlled fans, which adjust to compensate for changing thermal characteristics. N replaceable fan pack
Systems Management HW &TPM	HW required for remote presence enablement. TPM 1.2 is required.
Diagnostics	LED lights indicate failing component such as cpu, memory, hdds to send pre-failure alerts to the administrator. They should be persistent without power.
Warranty	3-years on site
OS Certifications	Server should be certified on latest version of Microsoft Windows, RHEL, SLES, Vmware
Certification	UL & FCC Certified

Installation:-

Software: - Linux OS for All nodes, Compilers (Intel Fortran, C++), MPI, System Management Software.

Cluster: - Cluster set up, Loading software and full cluster commissioning so that it is ready for running application at our LAB.

Warranty- 3 Years comprehensive warranty

Terms and condition:-
1. **Sealed Quotation must reach to us till 28.11.2011 before 5.00PM**
2. **Prices should be FOR IIT Kanpur**

Best regards,

Sincerely,

(SUBRATA SARKAR)
Name of the Indenter / PI
Dept of Mechanical Engg. IIT Kanpur