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Enquiry No.: IITK/CHE/AC/21012012

Quotation Inquiry for three compute nodes

Formal quotations are invited for 3 compute nodes which will be installed at the Laboratory of Dr. Abhijit Chatterjee, Department of Chemical Engineering, IIT Kanpur.

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 be able to install and integrate (in parallel) Linux operating system with usual cluster management software. 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). 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.
- OEM should provide a guarantee for clustering, application software integration and maintenance.
- The vendor should give the power and cooling requirements for the cluster solution along with the proposal.
- Warranty period (minimum 3 years on-site on complete High Performance Computing stack) should be mentioned.
- See additional details provided in following pages.
- Quotations should be sent at the contact address (below) on or before last date in a sealed envelope.
- Terms and Conditions, and deviations should be clearly stated with the signature of the responsible person.

Important Dates:

Date of issue of this inquiry: 22 January 2012

Date of Amendment: 25 January 2012

Last date for receiving quotations: 27 January 2012

Contact Address:

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Sl. No.	Requirement	Description	Qty
1	Blade Chassis	Blade Chassis with 10U Form factor with RPS , Ethernet Switch and 3 Year Warranty	1
2	Compute Node	Blade Form Factor Server with 4*16 Core AMD Processor @ 2.1 Ghz / 128 GB RAM / 2* 1 TB Disk / 2* 10G Ethernet Port / 3 Year Warranty	3
3	Services and Support	Cluster Installation , configuration and Cluster Support for 3 Years	1
4	Compilers and Libraries	Open Source Fortran and C / C++ compilers for AMD and required Libraries	1

Note: In case blade chassis (Sl. No. 1) cannot be provided, rack-based options may be supplied as a secondary option. Sl. No. 2-4 have to be met.

Detailed specifications for the requirement

Compute Node

Mounting type	Blade Chassis
Form factor	Blade Configuration Design
Processor	4 * AMD Opteron 6272 /16-core processor
Chipset	AMD SR5690 and SP5100
No. of CPU	4 CPU per Server.
	Clock Speed 2.1GHz or more
Cache	16 MB L3 Cache
RAM	Memory 128 GB (8 x 16 GB) ECC DDR3 expandable to 1 TB.
STORAGE (Internal)	Storage controller 1GB memory module with flash backed write cache RAID 1 will be implemented by Vendor. Internal Disk Storage 2* 1TB SATA
Network	Integrated On-board 10Gb Network Adapters supporting stateless TCP/IP offload, TCP Offload Engine (TOE), Fibre Channel over Ethernet (FCoE) and iSCSI protocols
Expansion Slots	Minimum 3 Nos. of PCIe X8/mezannine slots or more. Please mention total number of Free PCI slots available.
Warranty	3 years OEM comprehensive on-site warranty(labour + parts)
Bundled Software	Vendor to give details of bundled software offered.

Management Features	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.
General	The Server models offered should be certified for 64 bit Microsoft Windows 2008 Server OS. Documentary Proof to be submitted.
	The Server models offered should support for LINUX OS. Pl mention what are the LINUX OS supported by the server with version no. Documentary proof to be submitted.
	All offered equipment to operate on 230 Volt +/- 10% , 50 +/- HZ power supply conditions.
	All the above terms & conditions are mandatory. Vendor should clearly mention if there is any deviation.
	International OEM Make only with at least 10% share in top 500.ORG

Blade Chassis

Chassis Description	To house the Nos of Blade Servers as mentioned
	Vendor to supply OEM Chassis only of the same manufacturer as of Servers.
	Resources for the Blade Servers like power, System Management, Cabling, Ethernet Management and Network Switches should be redundant
Blade Bays and I/O bays	Chassis should have redundant bays to accommodate min 16 hot pluggable half height blades servers with SAS hard disks / 8 (Eight) hot pluggable full height servers with hot plug SAS hard disks. Redundant I/O bays to be available with minimum two number of redundant free bays for future expandability towards connectivity of Blades with LAN and SAN. Vendor to mention total number I/O bays alongwith redundant bays.

Mid-Plane	High-Availability Dual Path Midplane or passive midplane for providing 2-way communication paths for Ethernet, Fiber Channel, KVM Switches, Power Supply and Management Signals.
LAN Connectivity	Vendor to provide redundant switch which will be connected with minimum 16 Nos of blade servers on redundant mode separately for internal communication. Each switch module should have adequate uplink ports to support minimum 4 Gigabit Port LAN connectivity. Vendor to mention number of switches with configuration & type of connectivity.
Management Modules	Dual redundant management modules to communicate with the system management processors on the blade server. Capability of providing KVM Connectivity for the Blade servers housed inside the chassis, Real time, actual power cons. Status/Inventory/Alerting for Blades, Chassis Infrastructure, & IOMs; Centralized Configuration; GUI & CLI; SSL/SSH; Power/Thermal Monitoring; Dynamic power engagement; Temperature monitoring; Option to lock a MAC address into a specific blade slot. IP address per remote management card; Virtual Media & vKVM; Security - Local & AD
Cooling	Fully Loaded, Dual hot swappable variable speed blowers/fans for Cooling the chassis fully redundant.
Power Module	Hot swappable and adequate numbers so as to ensure n+n redundant power supply for completely populated chassis where n is greater than 2 with 16 numbers of half height servers with SAS hard disks / 8 (Eight) numbers of full height server.
Form Factor	Up to 10U - 19inch "Rack Mountable"
System Management	System Management Software and configuration utilities for server setup, changes in configuration, update of drivers should all be included with the offer. The System management software must be able to capture the real time power consumption of a pool of servers and to cap the same as per the requirement. The server performance monitoring software should be able to detect, analyze and explain hardware bottlenecks and should be able to log the data over time and allow it to replay the same in a short time frame for performance analysis. The cost of server setup, configuration, installation of operating system for all the servers should be included in the offer. All the servers should support Standard baseboard management controller. Ability to move, add, or change server network connections on the fly.
System Panel	Interactive color rotatable LCD/LED panel for local trouble shooting & wizard based set up. Control panel to show health of the systems including power-on, over temperature, other information and system error conditions.

Ports	VGA & USB ports for KVM. Vendor to mention total number of USB port available in Chassis.
Optical Disk	Chassis or USB 2.0 based DVD RW Drive to be supplied and configured which can be shared among all blade servers.
Warranty	3-Years OEM comprehensive on-site warranty(labor +parts).