Department of Chemistry
Indian Institute of Technology-Delhi
Hauz Khas, New Delhi 110016.

April 2 2013

Notice inviting Quotations

Quotations are invited for a hybrid computational cluster with the following minimum technical specifications:

1. Master node Qty: 1
   a. Processor: 2 x Intel Xeon E5-2670 processors (8 core, 2.6GHz)
   b. Hard Disk Drives:
      i. Scratch : Minimum of 2400GB, SAS, 15000rpm (e.g. 4 x 600GB)
      ii. Storage : Minimum of 24TB, Enterprise SATA, 7200rpm (e.g. 8 x 3TB)
   c. Slim DVD-ROM Drive
   d. 4 x Gigabit(10/100/1000Mbps) Ethernet ports on-board
   e. 4X QDR (40Gbps) InfiniBand HCA
   f. 32GB ECC DDR3 1300 MHz or higher
2. Compute node: GPU Qty: 1
   a. Processor : 2 x Intel Xeon E5-2670 processors (8 core, 2.6GHz)
   b. Hard disk drive : 2x 600GB SAS, 15000RPM
   c. GPGPU 2 x NVIDIA Tesla K20 with 6GB onboard memory per GPU.
   d. 2 x Gigabit(10/100/1000Mbps) Ethernet ports on-board
   e. 4X QDR (40Gbps) InfiniBand HCA, with cable of suitable length
   f. 64GB ECC DDR3 1300 MHz or higher
3. Compute node type 2 Qty: 4
   a. Processor : 2 x Intel Xeon E5-2670 processors (8 core, 2.6GHz)
   b. Hard disk drive : 1 x 600GB SAS, 15000RPM
   c. 2 x Gigabit(10/100/1000Mbps) Ethernet ports on-board
   d. 4X QDR (40Gbps) InfiniBand HCA, with cable of suitable length
   e. 32GB ECC DDR3 1300 MHz or higher
4. 18.5" TFT Monitor, 104 keys keyboard, Optical Scroll Mouse
5. Infiniband 4x QDR switch to connect all the nodes with all required cables
6. Gigabit Ethernet switch to connect all the with all required cables
7. KVM switch to connect all nodes with cables
8. 42U Rack with monitor shelf, fan tray, with appropriate power distribution units and all requisite accessories to mount the above servers. Cabling must be done with respect to rack ensuring that cooling is proper. The power distribution boards and all cabling would be responsibility of the vendor, as part of the warranty.

9. Software requirements
   a. The operating system would be Red Hat Enterprise Linux version 6 or better.
   b. All nodes must have a full installation of the operating system. Any additional softwares and libraries installed on the Master node must also be available on all nodes.
   c. Both the scratch space and the storage space must be available from all nodes.
   d. Open source job scheduler must be installed.
   e. Cluster monitoring suite must be available and GPU aware.
   f. Intel fortran and C++ compilers must be installed and available.
   g. Parameters for judging performance for high performance scientific computing must be presented as part of the technical bids.

10. Vendor must organize a user and admin workshop for the research group at customer site after deployment.

11. The bid must include total power and cooling requirements for the offered solution at the time of quote.

12. Terms and Conditions
   a. The quotations must have a validity of at least three months.
   b. The vendor must have installed computational clusters of similar or larger size for scientific computing applications in at least four other institutions in India in the past two years.
   c. Both CPU and GPU benchmarks with standard molecular dynamics codes must be provided - with inter-node and intra-node scaling details.
   d. Partnership with NVIDIA will be considered favourably.
   e. Software installation and full cluster commissioning is the responsibility of the vendor.
   f. The commercial quotation should be with three years comprehensive warranty and prices should be FOB (Freight on Board) at New Delhi.
   g. Terms of payment through LC in case of Import, otherwise against satisfactory installation. Please quote prices in Indian Rupees, and if applicable, in US dollars also.
   h. Indian agent certification may be enclosed
   i. Bidder must quote for all requirements mentioned herein. Partial bids would be summarily rejected.
   j. Either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously. The same agent shall not submit a bid on behalf of another Principal/OEM.
   k. Any additional software or hardware items, not mentioned in this document, which are required to deploy the cluster in its entirety must be clearly mentioned.
   l. Delivery period: within 1 month from the issue of supply order.
   m. Authority of IIT Delhi reserves the right to reject any or all quotations without assigning any reasons.
   n. In case IIT Delhi is imposed with demurrage charge due to import on CIF, the entire demurrage charge has to be borne by the Indian Agent of foreign supplier.

13. Other Terms and conditions
   a. The products will be used for educational purposes. Any applicable academic prices and discounts should be offered and stated clearly.
   b. IIT Delhi is exempt from paying custom duty and excise duties. Any required documents and certificates can be issued when the bidder provides the requisite information.

Technical and Commercial bids must be in separate sealed envelopes; both of which should be submitted enclosed in a single sealed envelope. The sealed quotations must be delivered to the undersigned at Room No. MS 629, Department of Chemistry, IIT-Delhi between **2 and 5 PM on 30th April 2013.**

Prof. Charusita Chakravarty
Dr. Pramit Chowdhury