



भारतीय प्रौद्योगिकी संस्थान कानपुर  
INDIAN INSTITUTE OF TECHNOLOGY KANPUR  
संगणक केन्द्र  
COMPUTER CENTRE

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**Call for Expression of Interest (EOI) for the Augmentation of High Performance Computing Facility at Computer Centre, IIT Kanpur**

We are interested in augmenting our computing facility by adding one new Linux Cluster with 512 – 1024 compute nodes with Infiniband interconnect.

A brief description of the above cluster is given in annexure-I. EOI proposals for the above cluster with technical details are invited from OEMs (Original Equipment Manufacturer) of clusters latest by August 13, 2013. (Please also see the point #5 of terms & conditions).

**Terms & Conditions:**

1. The OEM submitting the proposal should have presence in TOP500 (www.top500.org) list continuously for last 3 years. They should have at least 5 or more clusters listed in the most recent TOP500 list. They should have 5 or more clusters of atleast 5 Tera flop rating installed in India over past 5 years, out of which at least one cluster should be of minimum 25 Tera flop rating with Infiniband Interconnect.
2. The OEM should have direct service support in India.
3. We have floor cooling PAC system in our Data Centre. The heat load of each rack should be 15KW on average with peak load not exceeding 18 KW.
4. We have three phase input power connection in our Data Centre. Clearly mention rack wise detailed specifications of power consumption, including number of input points and cooling requirement. At this stage, the above information may be provided for the 512 node cluster with associated switches & storage. This will be scaled up for calculating full load.
5. In case the OEM is submitting the EOI proposal through their authorized partner, the after-sales service, including installation are to be provided by the OEM only. A certification from the OEM would be required to this effect. Also, in such cases, only one authorized partner of an OEM would be accepted.

6. After evaluation of the EOI proposals, short listed OEMs/ authorized partners would be invited for final technical and commercial bids. Decision of the appointed committee in this regard would be final and binding to all concerned.
7. The exact number of compute nodes to be purchased will be decided based on the technical assessment of the appointed committee and availability of funds.
8. IIT Kanpur reserves the right to cancel purchase of the cluster at its sole discretion, at any point of time during the purchase process.

EOI proposals along with required documents listed under terms & conditions should reach the Head, Computer Centre, IIT Kanpur by 5 P.M., 13/08/13.

OEMs submitting their proposals by 5 P.M., August 13, 2013 are invited for a technical presentation of their proposed solutions on 14<sup>th</sup> August, 2013 at Computer Centre, IIT Kanpur. The presentation will start at 10 A.M. in the Conference Room, Computer Centre, IIT Kanpur. The presentation time slot will be of one hour duration including discussion. With regards to point number 5 listed under terms & conditions, it is mandatory that both OEM & authorized partner come for the technical presentation on the dates specified above.



(Ashish Dutta)  
Head, Computer Centre  
IIT Kanpur



## Annexure-I

- **Master Node (2 number) and Management Node (6 number):** 2 X 10 core Intel Xeon E5-2670V2 processor @ 2.50 GHz with 25 MB L3 Cache, Intel C600 Series chipset, 128 GB DDR3 1600 MHz ECC RAM or higher, dual gigabit NIC, Management port, dual FDR/QDR Infiniband ports, 4 X 600GB 15 K RPM hot swap SAS Disk, DVDROM, OS: 64 bit Red Hat Linux HPC latest version.
- **Compute Node (512 - 1024 number):** 2 X 10 core Intel Xeon E5-2670V2 processor @ 2.50 GHz with 25 MB L3 Cache, Intel C600 Series chipset, 80 GB 1600 MHz DDR3 ECC RAM or higher, dual gigabit NIC, Management port, dual FDR/QDR Infiniband ports, 1 X 500GB SATA Disk, OS: 64 bit Red Hat Linux HPC latest version.
- **Cluster Interconnect:** FDR/QDR Infiniband (minimum 4X), 100 % non-blocking.
- **Parallel File System (Storage):** Minimum 300 TB usable disk space should be enabled as a standard parallel file system like luster/GPFS/DDN etc. that supports an end to end sustained aggregate throughput of at least 4 GigaBytes per second. The parallel file system should connect to FDR Infiniband of the HPC Solution. It should be assumed that most of the I/O operations of the parallel file system are write operations read/write ratio of 30:70 respectively. Please specify the aggregate throughput of the parallel file system.
- **Software:** Cluster monitoring and management software, Workload management software PBS Pro, **compilers:** Intel suit of compilers, MPI, MKL; node level deployment tools etc. License of all software must be perpetual. Open domain free software, if any, must be specified.
- 1U slide out console with TFT monitor, keyboard & mouse.
- 42U OEM Rack to mount the server and required accessories.
- Higher configuration would be accepted provided there is no compatibility issue.
- Power consumption of all the systems stated above should be provided.

### Optional Item:

1. N number of compute nodes with 2 x Intel Xeon Phi 5110p or latest Coprocessor. The number N will be decided depending on the fund availability and will be specified in the tender enquiry. Power consumption of each such node should also be specified.

