Department of Physics
Indian Institute of Science
Bangalore, India, PIN 560012

Domestic Tender

Dear Madam/Sir,

Subject: Request for quotation for a high-performance computing cluster FOR-IISc Bangalore basis in INR only

A research group in the Department of Physics intends to purchase a high performance computational cluster (HPC). During the evaluation, preference will be given to system with higher extensibility (ease of adding new nodes to the cluster in future). Server chassis/ enclosure-based solutions, with redundant power supplies, and capable of getting mounted on standard 42U (19") rack is desirable. Also, each of the server nodes should be individually serviceable without shutting down the other server nodes. Proposed servers should be preferably managed by single network at 1 GBPS or higher speed. The cluster should be installed with the necessary schedulers, drivers, and connectors for running and monitoring container-based jobs, Spark with HDFS based jobs and MPI based jobs, thin client environment, state of the art database systems like Postgre SQL or equivalent. Virtualization and aggregation compatibility should be made available.

Following are item wise specifications. Only core components are cited below and the bidders are expected to also quote for and supply the necessary unlisted accessories (e.g. LAN, Rail, Software etc.) that will be required for setting up the complete solution.

In case the bidder submits both Intel and AMD solutions, they should submit separate technical and commercial bids for each solution. Please note that the existing clusters in the group are Intel-based. Hence, clusters compatible with the existing Intel-based solutions will be technically qualified.

1. **(Optional) Master Node:** A separate master node with the following specifications. All components of a node must have itemized price.

    a. **5th Generation Dual Intel Xeon/ 5th Generation Dual AMD** Processors. Please provide separate itemized quotation for the following configurations. All frequencies are base frequencies.
        i. 20 cores per processor. 2.3 GHz or better. (Dual processor)

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b. Motherboard should support at least 256 GB of RAM with the ability to upgrade up to 512 GB of RAM. At least DDR5 ECC @4800 MHz or better.
c. At least 1x 480 GB M.2 SSD for OS
d. 12 x 24 TB Enterprise SATA HDD as an **optional component.**
e. RAID Card with min 1 GB cache with RAID 1, 5, or 6 **as an optional component**.
f. Hardware RAID controller (1,5 and 6) that supports up to 12 HDDs x 24 TB **as an optional component.**
g. Dual gigabit LAN ports
h. **NIC:** 2x10GBase-T LAN ports with necessary cables
i. **Management:** Dedicated management port with virtual media over LAN and KVM-over-LAN support
j. USB ports: At least 2 USB 3.0 (front)
k. IPMI / Remote management features
l. 2U rackmount form factor with rail kit.

Redundant power supplies, Titanium level efficiency

2. **Compute Nodes:** Cluster with **a minimum of 3 nodes (**more nodes may be purchased if within budget**)** with the following specifications per node:
    a. **5th Generation Dual Intel Xeon/ 5th Generation Dual AMD**, with a minimum of 32 cores per processor and a minimum base frequency of 2.1 GHz. (Dual Processor).
    b. Motherboard should support at least 256 GB of RAM with the ability to upgrade up to 512 GB of RAM. Individual 32 GB RAM modules. At least DDR5 ECC @4800 MHz or better.
    c. At least 1x 480 GB M.2 SSD for OS
    d. The quote should include the price for 1x24 TB Enterprise SATA HDD as an **optional component**.
    e. **Management:** Dedicated management port with virtual media over LAN and KVM-over-LAN support
    f. **NIC:** 2x10GBase-T LAN ports with necessary cables
    g. USB ports: At least 2 USB 3.0 (front)
    h. Redundant Power Supplies- Platinum level efficiency or above
    i. IPMI/Remote management features
    j. 2U rackmount form factor with rail kit.

3. **Network/Interconnect:**
    a. 2x10GBase-T LAN ports with necessary cables
    b. A separate 1G network should be provided for management and administration of the cluster.
    c. All network cables should be listed and supplied.
    d. 8 port 10G switch.

4. **In case of AMD based solutions, AOCC need to be installed and the bidder need to support with regular updates and patches (As and when released by AMD).**

5. **Other software:**
    a. CentOS operating system, latest version.

    b. Open source cluster management tools such as Rocks, Ganglia

    c. Application packages provided by IISc should be installed and demonstrated on the HPC cluster. A complete list of packages is provided below. Unless the listed software packages are installed properly and tested to satisfaction for performance and efficiency, the payment will not be done.

    d. CUDA tools should be installed and CUDA enabled applications provided by IISc should be installed and demonstrated.

    e. The existing software in the cluster needs to be tested for compatibility. Vendors may also be requested to test software not mentioned in the list. For more information on the software packages, please send an email to Dr. Sumantra Sarkar (sumantra@iisc.ac.in) with specific questions. Some of the existing software are:

        i. Molecular Dynamic Simulation Packages: GROMACS (patched with plumed) - with mpi, LAMMPS - with mpi, NAMD - with mpi and VMD, AMBER, VOTCA (with gromacs)

        ii. Generic day-to-day Softwares: Python3- with numba, numpy, scipy, matplotlib, Matlab, BLAS and LAPACK (licence can be obtained from institute), Anaconda package manager, OpenCL and PyopenCL, ANTs, BrainSuite.

        iii. Compilers: OpenMPI, Intel & Intel MPI, GNU compilers, Mpicc, Cmake, keras, tensorflow-gpu, CUDNN, GSL,.

        iv. Biomolecule Analysis Software: Rosetta , Modeller-IMP, FastQC ,Trim Galore, Cutadapt, Bowtie2,TopHat, Samtools, Htseq-count, Cufflinks, IGVTools, Depth, EMBOSS, AutoDock, ClustalX, Packpred, OpenMPI, CCP4, Phenix, FoldX

6. **Extended warranty:** A separate quotation should be provided for 4th and 5th years of comprehensive on-site warranty for the hardware. If required, the cost of the warranty will be paid after the 3rd year at the rate quoted in the commercial bid.

General Specification:

a. All the equipment must be compatible with Indian electrical standards/codes

b. The bidder must carry out Racking, stacking, installation, commissioning and cabling of all supplied hardware components and software.

c. The HPC cluster solution must be housed in suitable chassis. Dense computing platform with extensibility option is preferred.

d. The bidder should provide manufacturing authorization form (certificate from OEM for quoting the requirement)

e. Also, bidder/OEM must provide at least three reference sites 10 TF or above (CPU only) where they have carried out the installations in the last 3 years. The purchase committee will independently obtain inputs from referees before making the final decision on the bid. PO copies and installation reports must be submitted along with the Technical Bid.

f. The lowest commercial bid and/or the most agreeable technical bid should have the option for further negotiations.

g. In case of any delay in delivery, replacement, or rectification, the warranty period should be correspondingly extended.

h. Please mention per node cost in the bid. Any additional nodes have to be supplied at the same cost quoted in the original bid.

Eligibility Criteria:

a. Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor.

b. The bidder/OEM should have set up at least 3 or more HPCs in the last 3 years with at least one cluster with 256 or higher number of cores. Purchase order copies of previous installations are required.

c. The bidder should be in HPC/IT business for at least 3 years. Support documents should be submitted.

d. The bidder should have an annual turnover of **Rs. 5 Crores** or above in the last 3 Financial Years. Audited Balance sheets should be submitted.

e. The bidder should have a sales and service office in Bangalore.

f. The OEM should have a registered office in India with service center facilities in Bangalore. Details of HPC engineers of bidder and OEM should be provided.

g. The OEM should give an undertaking that warranty will be directly provided by the OEM. Also the OEM should give an undertaking to provide necessary Technical support in case the bidder fails to provide such a service to IISC.

h. Bidder/OEM with poor service track record at IISC will not be considered.

i. The Bidder should not be currently blacklisted by any institution, bank in India

j. Bidder/OEM has to quote exactly as per mentioned specifications for entire solution, partial offers will not be accepted.

k. **Domestic bidders should follow the terms and conditions as per the notification No. P-45021/2/2017-PP (BE-II) dated 16th Sep, 2020.**

l. The bidder should provide the original bill of materials.

The quotation should be in two parts:

Part I (Technical bid) and Part II (Commercial bid). Separate Technical and Commercial Bids should be submitted for Intel-based and AMD-based solutions if the vendor is providing both.

Part I should be put in a sealed cover and superscripted "Technical Bid". Part II should be put in a separate sealed cover and superscripted "Commercial Bid". Technical bid should be exactly same as commercial bid **except that prices are not shown in technical bid**. Any bidder found in violation of this requirement will be automatically disqualified. Technical bid should have item wise compliance report of all specifications. The above covers should be put in another cover. This cover should be sealed and subscripted "Bid for High Performance Computing Cluster".

The Technical bid should not have any details about pricing. **The commercial bid should have pricing for each of the configurations quoted in the technical bid.** The last day for submitting the bid is **Jun 9, 2026**. The offer should be valid for a period of **at least 90 days** from the last date for submission of quotes. Prices quoted should be inclusive of all taxes / duties. The prices quoted should be inclusive of delivery of the items to the site and installation at site and **should include only INR quotes**. Both technical and commercial bid will be negotiable for the lowest costing commercial bid and most desirable technical bid. While evaluating the technical bid, weightage will be given for extendibility, performance and adherence to specifications and references from past customers. The purchase committee may want to contact past customers and the vendors are requested to provide references that can be contacted for the same.

Payment will be made after satisfactory supply and installation. The system supplied may be tested/certified by us through an identified person/committee. Three-year comprehensive on-site warranty should be provided for the hardware. **The warranty period will commence from the date of acceptance of the equipment.**

Important Dates:

Date of release of the enquiry	:	May 19, 2026
Pre-bid clarification	:	May 25-28, 2026 (in person, by email appointment only)
Date of submission of Quote	:	June 9, 2026, **2:00 PM**. Physics office

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