

Domestic tender notification for the procurement of a “15 TF CPU-cluster for high performance computing” (Last date: Dec21, 2022)

Dear Sir/Madam,

This is an invited domestic tender (refer to Annexure 2 for eligibility criteria). In order to accomplish the goals of a DRDO funded project through the GTMAP programme we plan to acquire a CPU-based high performance computing solution allowing for large-scale phase simulations of phase transformations as well as for machine learning to generate reduced order models. The cluster must have a minimum sustained performance of 15TF from the compute nodes. In the following we list the minimum specifications that we insist upon in the solution.

Minimum specifications for the master node

1. Minimum 2*16C/32T; Intel Xeon Silver 4314 or higher frequency//AMD-EPYC 7282 or higher frequency
2. 256GB DDR4 2933 RAM or higher in memory, with extra DIMMs for further expansion.
3. Minimum of 2*1TB SSD (PCIe M.2/2.5” SATA) in RAID 1 for OS.
4. Minimum of 6*8TB HDD in RAID 6 configuration for data-storage.
5. Hot-swap HDD bays for future expansion.
6. Integrated IPMI 2.0 + KVM with dedicated LAN.
7. Support for Cent OS/Ubuntu/Rocky Linux. The OS, intel-oneapi-compilers for serial and MPI execution along with hdf5 MPI libraries should be installed at the time of delivery.
8. Effective cooling(air) with proper size of fans. Should be integrate-able in an existing data server room.
9. At least 1200W Redundant 80Plus Platinum (94%) PSU or higher or better
10. 2U form-Factor for the node.

Minimum specifications for the compute nodes

1. 2 x AMD EPYC 7742 (or higher) with at least 64C/128T cache with minimum 2.25GHz speed//Equivalent Intel Xeon Gold CPU with similar or higher base frequency
2. DDR4 3200 ECC RAM in balanced configuration with minimum of 1024GB and scope for further expansion
3. 480 GB SSD (PCIe M.2/2.5”) for OS
4. Integrated IPMI 2.0 + KVM with dedicated LAN
5. Support for Cent OS/Ubuntu/Rocky Linux. The OS, intel-oneapi-compilers for serial and MPI execution along with hdf5 MPI libraries should be installed at the time of delivery.
6. At least 1200W Redundant 80Plus Platinum (94%) PSU or higher or better
7. 1U/2U form-factor solutions

Communication between the nodes

1. Communication between the nodes should be enabled either with infiniband switches with a minimum of 100 Gb/s connectivity or a switchless configuration with the same minimum 100 Gb/s connectivity.

2. Dual Port 1-Gigabit Ethernet Network Adapter on the master and compute nodes.
3. Dual Port 10-Gigabit Ethernet Network Adapter on the master and compute nodes
4. At least 16-Port 1G Ethernet switch with rail kit and appropriate number of CAT6 cables

Racks

1. Standard Rack 42U 800W mm x 1000D mm With 2 PDU; compatible with three-phase power supply.

Miscellaneous

1. All required cables and wiring required for the installation should be provided by the vendor.

Warranty

1. A minimum of 3 year warranty on all components including the master, compute nodes needs to be provided by the vendor.

In case of a price conflict, the vendor with the following options will be preferred in the following order of priority;

1. Offer of higher number of CPUs for the same cost.
2. Higher number of nodes for the same cost.
3. Higher RAM for the same cost but balanced configuration.
4. Higher CPU variant (Please check power requirement and compatibility).
5. Higher PCIe variant.

Terms and conditions

1. Two-bid system (separate technical and financial bids) in sealed tenders.
2. The technical bid must clearly specify the prescribed technical specifications without including the prices. Please provide in detail the specifications under each subhead and bullet point. Unique characteristics may be highlighted.
3. Vendors who include price information in the technical bids will be automatically disqualified.
4. At least 3 independent reference letters from installations worldwide. IISc may contact more users for obtaining independent references. The committee will have right to reject a bid based on reference letters.
5. Technical bids will be opened first. IISc may seek clarifications after opening of technical bids and may ask vendors to perform some example experiments on the samples given by IISc to demonstrate the promised technical specifications. Vendors may be required to give presentations.
6. There are several items that require detailed information to be provided by the supplier. If information is not provided against any of these items, this will disqualify the supplier.

7. After technical evaluation by a committee, vendors may be asked to re-quote in a specific format to facilitate comparison of prices.
8. Price bids of only technically qualified vendors will be considered.
9. Prices to be quoted separately for baseline system and options. Prices should be quoted in adequate detail with relation to packing details to cover insurance compensation in case of damage to any specific modules.
10. Indicate separately price of spares listed above in terms of unit cost. The price of these spares will be included in the price comparison. Any additional spares recommended by the company will be considered for ordering but not included in the comparison. The buyer reserves the right to make the final decision on ordered spares.
11. The price must be quoted in INR (Indian Rupee) + 18% GST. Quote should come only from Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor. The quotations should be on FOR-IISc Bangalore basis in INR only.
12. The price should be on FOR-IISc Bangalore basis in INR only.
13. IISc also reserves the right to cancel the tender at any time without assigning any reason whatsoever.
14. Indicate delivery period.
15. Order will be placed on lowest bid from technically qualified vendor.
16. The tender documents can be sent at the following address:

The Chairman
Department of Materials Engineering
Indian Institute of Science, Bangalore 560012
Karnataka (INDIA)
Attn: Dr. Abik Narayan Choudhury

Annexure 2: Eligibility Criteria

Prequalification criteria:

- 1. The Bidder should belong to either class 1 or class 2 supplier distinguished by their “local content” as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter.**
 - a) Class 1 supplier: Goods and services should have local content of equal to or more than 50%.**
 - b) Class 2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.**
- 2. Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to Class-1 supplier.**
- 3. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details.**
- 4. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere.**
- 5. Original Invoice, Original Warranty Certificate, Original Test Reports should be produced for all imported items from OEM (Original Equipment Manufacturer) at the time of supply of the equipments.**
- 6. Details of experienced service engineer including contact detail should be provided in tender document.**
- 7. Bidder shall have to submit audited accounts (Balance sheet profit and loss account) of financial year 2015-16, 2016-17 and 2017-18. Audited statement must be signed and stamped by qualified chartered accounted.**
- 8. Bidder must submit Income Tax return for assessment year – 2016-17, 2017-18 and 2018-19.**
- 9. Bidder must submit up to date sales tax or GST clearance certificate.**