

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

2A & 2B, Raja S.C. Mullick Road, Jadavpur, Kolkata-700032

NIT No. : IACS/SCS/AD/2020-21/14

Date: 09/11/2020

Sealed tender in two bids system (technical bid and price bid) is invited from confide, resourceful and eligible manufacturer/exclusive distributor/vendors for **High Performance Computer Cluster with Intel Processors and NVIDIA Graphics Processing Units.**

Part-I (Technical Bid) of the tender should contain technical specifications in detail as well as commercial terms and conditions. Part-II (Price Bid) should clearly indicate group-wise price, if needed, as mentioned in the technical bid. The Technical Bid and Price Bid are to be submitted in separately sealed envelopes, distinctly marked accordingly and both to be put inside another envelop, that should be sealed and superscribed with tender notice no. and due date. The bidders may submit bids duly signed in their own letterheads.

Completed tender bids should reach the office of the **Registrar, Indian Association for the Cultivation of Science (IACS), 2A & 2B Raja S. C. Mullick Road, Jadavpur, Kolkata-700032** on or before the scheduled date and time specified below:

Tender Notice No.	NIT No. IACS/SCS/AD/2020-21/14 Date: 09-11-20
Last date and time of submitting tender	03.12.2020 before 5 PM
Pre-bidmeeting(date, time & place) to discuss technical specification	19.11.2020 at 11:00 AM via Google Meet or Zoom. Interested vendors are requested to send their Email ids to the indenter for the online pre-bid meeting.
Date and time of opening tender (Technical Bids)	04.12.2020 at 11 AM
Place of opening tender	Computer Centre IACS
Date and time of opening of Price Bid	The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.
Contact	Email: mcsad@iacs.res.in Tel.+91 33 2473 4971 [Ext2136]

The technical bids will be opened first to judge/evaluate the technical specifications of the said instrument and thereafter the price bids of only technically qualified bidders will be opened.

Technical Bid Evaluation: The Technical Bids will be evaluated in the presence of the representatives of intending bidders who will be able to clarify technical aspects of their bids, if any, required by the Technical Evaluation Team.

Opening of price-bid: The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.

Please note that IACS will not provide any accommodation or reimburse any expenses to any of the bidders for attending the opening of the technical bid.

Quotations received incomplete or beyond the stipulated time will be summarily rejected.

Bidders should submit their past experience for supplying and successful installation of similar units to other research Institutes/Universities/other organizations in India and abroad. Please provide documentary

proofs of such successful installation and supporting documents that the instruments are running successfully.

1. TECHNICAL BID

The technical bid should contain technical specifications and should be kept in a separate sealed envelope duly superscribed as 'TECHNICAL BID' on the outer cover of the envelope as already detailed above. **It should be clearly mentioned on the envelope as "Technical Specification for High Performance Computing Cluster with Intel Processors and NVIDIA Graphics Processing Units".**

Technical Specification for High Performance Computing Cluster:

A) US Dollar Component

Computer node with Intel processor and NVIDIA graphics processing unit

Number of nodes: 1	
Processor	2 x Intel Xeon CLX-SP 4210 10 core (20 threads) 2.2 GHz, 13.75 MB Cache, 9.6GT 2UPI Or Higher specification Intel Xeon series processor
GPU	4x NVIDIA TESLA V100 SXM2 GPU with 32 GB CoWoSHBM2 memory and NVLink
Memory	256 GB 2933 MHz DDR4 ECC RAM Or Higher capacity and specification DDR4 ECC RAM
Storage	2 x 1.92 TB SSD 3D TLC 2.5" 7 mm 3DWPDRv.2 HDD Or Higher capacity with same specification SSD HDD
Chipset	Intel C621 Chipset
Core/Thread	10 core/ 20 threads
Chassis	Preferable 1U Rack-mountable (Form factor less than or equal to 1U). Maximum 2U Rack-mountable
Power Supply	Minimum: 1600W, Redundant Platinum level. Preferable: 2000W Redundant Titanium Level Power Supply with PMBus
Intel Hyperthreading	Yes
PCI 3.0 Slots	4 PCI-E 3.0 x16 slots
Intranode link for GPU	NVLink connection between the four GPUs
Network Interface Card	Dual Port 10GBase-T Ethernet Controller
Storage Controller	Intel C621 controller for 4 SATA3 (6Gbps) Ports; RAID 0,1,5,10
Graphics	Integrated graphics
Expansion Bays	2 Hot-swap 2.5" SAS/SATA drive bays, 2 Internal 2.5" drive bays

APPLICABLE:

- (f) **Operating System:** Open-Source stable Linux distribution (latest CENTOS stable version or equivalent with Torque) with standard Fortran and C compilers and Python 2.7, 3.6 with NumPy, SciPy, mpi4py and other relevant Python packages.
- (f) **Scheduling Software:** Open-Source stable Linux based job scheduler (preferably PBS). The vendor should have the ability to create different user groups with different job privileges.
- (g) **Warranty:** Three (3) years on-site OEM warranty for all components and parts and labor. The warranty period will commence from the date of certification of successful installation of the equipment.
- (h) **Installation and Commissioning:** Free of cost at IACS, Kolkata. The vendors are required to give an estimate of the time required for installation, fine-tuning of the cluster and hand-holding/training of the principal users in the technical bid. The vendor shall be responsible for setting up of the cluster using a suitable open source Linux distribution or equivalent (to be provided by vendor). The vendor shall also be responsible for setting up the C/C++, Fortran compiler, open source MPI libraries, other scientific libraries, Python (all versions required by the indenter) along with the Python packages supplied by the indenter.

Vendor Eligibility:

- (I) The bids must be submitted by OEMs or OEM supported single vendors (one vendor one OEM and each OEM can only authorize a single vendor only) with original authorization certificates from the OEMs. Vendors should have proven experience in setting up minimum of 1HPC cluster with NVIDIA GPUs with 1 TFLOPS or higher in the last three years in India. OEMs should have proven experience in setting up a HPCC of minimum 50 TFLOPS in the last three years in India and a minimum of 3 installations of at least 1TFLOPS in the Kolkata Region. A brief proof for such experience (copies of orders/installation certificate) should be included in the technical bid.
- (II) Vendor should be responsible along with OEM, in providing support (software and hardware) for the machine during the warranty period. Hence the vendor should be the service provider and OEM would provide the parts. Vendor should provide proof that they have technical know-how to troubleshoot and provide proper service.
- (III) Vendor should have service engineers stationed at Kolkata and should respond to service calls within 24 hours of receiving a notice from IACS. Additionally, the vendor (service provider) should have an office in Kolkata. The vendor must provide contact details of service engineers and its office in Kolkata. Service call resolution including replacement of parts should occur within 5 business days of receiving the service call.
- (IV) Vendor should have technical expertise of installing and maintaining MPI installations (OpenMPI and others) and NVIDIA CUDA Toolkit and other related software to fully utilize the GPUs.
- (V) Vendor should have technical expertise of installing several versions of Python language and scientific packages including but not limited to NumPy, SciPy, mpi4py.
- (VI) It will be highly desirable if the vendor has proven capability to install some commonly used molecular dynamics packages such as NAMD, GROMACS, LAMMPS. Vendor should have experience with parallelized and GPU-aware installations of NAMD, GROMACS, LAMMPS and other popular academic codes.

Additional Requirements:

(i) Compliance List: The vendor must submit a table indicating the compliance of the features of the model of the components being quoted with those given in the indent. In case of non-compliance against a particular item, the vendor should justify that. A compliance table (see below) must be prepared and submitted along with the technical bid.

Serial Number	Tender specification	Your offered instrument specification	Extent of compliance

Tender will not be accepted if the technical compliance chart is NOT provided following the above format.

(ii) **Training:** Free training on operation, maintenance and troubleshooting of the whole HPCC Solution should be imparted to at least 2 persons for a period of one week at the site of installation.

(iii) **Post-sale service:** The vendor must submit the names of the service engineers employed by them who are competent to serve the HPCC installation along with their contact details in India.

****Please Note: The decision of the Technical Committee on technical competence and eligibility of any technical bid submitted by any vendor would be final and cannot be contested.**

Warranty: 3 years on site extendable warranty. Servicing facility within India is a must while service engineer stationed at Kolkata will be preferred. A list of other places where the instrument has been installed should also be provided.

2. PRICE BID

The financial bid indicating (item-wise) price for the item(s) mentioned in the technical bid should be kept in a separate sealed envelope duly superscribed as 'PRICE BID' on the outer cover of the envelop as already detailed above. Price bids of only technically qualified bidders will be opened and they will be intimated the date and time of the opening of price bid at their e-mail ids. Rest of the bidders will stand rejected.

PRICE: Price to be quoted in US Dollar on CIF Kolkata basis.

3. BID SECURITY

An Account payee Demand Draft of any of the Commercial Banks for Rs. 80,000 (Eighty thousand only) drawn in favour of **"Indian Association for the Cultivation of Science (State Bank of India, Jadavpur University Branch, A/C No. 11079699211, IFSC: SBIN000093, MICR Code: 700002048)"** is to be furnished by the bidders alongwith Technical Bid, except for Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) or vendors registered with the Central Purchase Organisation or the concerned Ministry or Department.

Alternatively, the bidder shall have the option to furnish EMD in the form of Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from any of the Commercial Banks. The Bid-Security should have at least 90 (ninety) days validity period beyond the final bid validity period.

In case of non-award of the work, the Bid Security money would be returned to the unsuccessful Bidders.

4. PERFORMANCE SECURITY

An Account Payee Demand Draft on any commercial bank of India or Bank Guarantee (BG) of any Commercial Bank preferably located at Kolkata of 10% of the order value in the name of “Indian Association for the Cultivation of Science” is to be furnished by the successful bidder as Performance Security. Performance Security money should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. Bid security money or EMD will be refunded to successful bidder on receipt of the Performance security money.

5. TERMS OF PAYMENT

Payment will be made through irrevocable Letter of Credit in two instalments. 90% of the money will be released on delivery. Remaining 10% will be released after successful installation of the instrument.

6. GENERAL INSTRUCTIONS

1. Validity of tender: Tender submitted should remain valid for at least six months from the date of opening the tender. Validity beyond six months from the date of opening of the tender shall be lapsed by mutual consent.
2. The tender should accompany a compliance chart.
3. Incomplete and conditional tenders as well as tenders received after the due date will be summarily rejected without assigning any reasons thereof.
4. At any time prior to the bid due date, IACS may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder during pre-bid meeting, modify the bidding documents. The amendment(s) will be notified on the institute website. Prospective bidders are advised to occasionally to visit the website (www.iacs.res.in/tender) for any amendment.
5. Installation/Demonstration/Application training at site: Installation & user training at IACS, free of cost by the supplier.
6. Service facility: In India, preferably Kolkata, supplier should mention their details of service setup and manpower who are responsible for aftersales support. Response time should be within 24 hrs.
7. The model number, make and a printed literature of the product should be submitted positively.
8. Proposed delivery schedule should be mentioned clearly.
9. Manufacturers / exclusive distributors / vendors should have history of supplying this type of instruments to this or other scientific organizations. Availability of a list in this regard would be preferred.
10. Authorized dealership certificate should be provided in case of principal manufacturing company is not quoting directly.
11. Guarantee certificate, users manuals etc. are to be handed over to the user after successful commissioning of the system.
12. In the event of date being declared a closed holiday for purchaser's office, the due date for submission of bids and opening of the technical bids will be the following working day at the appointed time.
13. In case of any dispute, the decision of IACS authority shall be final and binding on the bidders.

14. In case of any litigation the matter will be dealt within the jurisdiction of the High Court of Kolkata only.
15. For any clarification regarding technical specifications, information etc., please send your queries to **Dr.Avishek Das** (mcsad@iacs.res.in).
16. The authority of IACS reserves the right to reject any or all of the tenders received without assigning any reason thereof.

Acting Registrar