

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

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

NIT No. : IACS/CMCD/DG/2017-18/95

Date: 31/01/2018

Sealed tender in two bids system (technical bid and price bid) is invited from bonafide, resourceful and eligible manufacturer/exclusive distributor/vendors for **Computer cluster with Intel processors along with a CPU-only system with high memory.**

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 envelope, 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/CMCD/DG/2017-18/95 Date: 31-01-2018
Last date and time of submitting tender	23.02.2018 before 17:00 hrs
Pre-bid meeting(date, time & place) to discuss technical specification	N/A
Date and time of opening tender (Technical Bids)	26.02.2018 at 16:00 hrs
Place of opening tender	Would be declared later
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: pcdg@iacs.res.in , mcstsd@iacs.res.in , mcsad@iacs.res.in Tel.+91 33 2473 4971 [Ext 1210]

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 opening of 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 supportive 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 envelop as already detailed above. **It should be clearly mentioned on the envelope as "Technical Specification for Computer cluster with Intel processors along with a CPU-only system with high memory for Prof. Tanusri Saha-Dasgupta, Dr. Debashree Ghosh, Dr. Avisek Das"**.

Technical Specification for Computer cluster with Intel processors along with a CPU-only system with high memory:

The Technical Specifications acceptable for the 'Computer Cluster' are as follows:

(A) US Dollar Components:

- (i) one Master Node
- (ii) Five High Memory Compute Nodes
- (iii) Sixteen Compute Nodes
- (iv) Interconnects and Management (a), (b), (c)

(B) INR Components:

- (iv) Interconnects and Management (d), (e), (f), (g), (h)
- (v) Other Components

i) MASTER NODE Quantity: 1

Processor	1X Intel Xeon 4-core E5-1620 v4 3.5 GHz 10M
Memory	64 GB 2400 MHz DDR4 ECC RDIMM or higher
Storage	2X 1 TB Enterprise (at least 7200 RPM) SATA HDD (for OS) 4X 4 TB Enterprise (at least 7200 RPM) SATA HDD (for data) (Support for 8 HDD bays)
Chip-set	Compatible industry standard Intel chip-set
Optical drive	DVD R/W
Chassis	Within 2U rack mountable
Power supply	Industry standard Platinum level
Network ports	Dual port Gigabit Ethernet or better
Management	IPMI 2.0
Memory slots	4X 288 pin DIMM sockets or more
Controller card	Hardware RAID controller RAID level 0,1,5,10 with BBU

ii) HIGH MEMORY COMPUTE NODE Quantity: 5

Processor	Intel Xeon 6-core E5-1650 v4 3.6 GHz 15M
Memory	256 GB 2400 MHz DDR4 ECC RDIMM (expandable to 512 GB)
Storage	2X 600 GB SAS 12.0 GB/s 15k RPM Or 2X 500 GB or better SATA SSD (6Gb/s SATA interface, 540 MB/s sequential read and 520 MB/s write or better)
Chip-set	Compatible industry standard Intel chip-set
Intel Hyperthreading	Yes
Cores/threads	6 cores, 12 threads
Chassis	Within 1U rack mountable
Power supply	Industry standard Platinum level

Controller card	Hardware RAID controller RAID level 0,1,5,10
Network ports	Dual port Gigabit Ethernet or better
Management	IPMI 2.0

iii) COMPUTE NODE Quantity: 16

Processor	2X Intel Xeon 10-core E5-2630 v4 2.2 GHz 25M
Memory	64 GB (4 x 16 GB) 2400 MHz DDR4 ECC RDIMM (expandable to 512 GB)
Storage	2X 600 GB SAS 12.0 GB/s 15k RPM Or 2X 1 TB SATA Enterprise HDD
Chip-set	Compatible industry standard Intel chip-set
Intel Hyperthreading	Yes
Cores, threads per processor	10 cores, 20 threads
Chassis	Within 1U per node (rack mountable) to not more than two nodes in 1U (rack mountable)
Power supply	Industry standard Platinum level
Controller card	Hardware RAID controller RAID level 0,1,5,10
Network ports	Dual port Gigabit Ethernet or better
Management	IPMI 2.0

iv) INTERCONNECTS and MANAGEMENT

(a)	Omni-path switch	1 X 24 port 100GB/s Omni-path switch
(b)	Omni-path card	22 X Omni-path cards
(c)	Omni-path cable	22 X Omni-path cables
(d)	Ethernet switch	1 X 24 port Gigabit Ethernet Switch
(e)	Ethernet cable	24 X RJ45 CAT5e/CAT6 Ethernet patch cord
(f)	KVM	1 X 24 port USB KVM switch Or 2 X 16 port USB KVM switch
(g)		22 X KVM cables
(h)	Monitor, keyboard, mouse	19" LED/LCD monitor; USB keyboard, USB mouse Or 1U console with LED/LCD monitor; keyboard and trackpad

v) Other component Quantity: 1

Rack	42 U floor mounted rack for housing the entire setup with sufficient number of octagonal PDUs to supply power and MCBs
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UPS back up: The vendor should furnish information regarding UPS and associated battery requirements for operating the HPC cluster in a stable fashion.

Power, Heat & Cooling: Power consumption and heat dissipation estimate for the total cluster should be mentioned clearly.

Warranty: Three years comprehensive on-site warranty for all components, including Parts, Labour and Support. The warranty period will commence from the date of certification of successful installation of the equipment.

i) Vendor Eligibility: The bids must be submitted by OEMs or OEM supported single vendors only with original authorization certificates from the OEMs. Vendors should have proven experience in setting up an HPCC of minimum 150 TFLOPS in the last three years in India and a minimum of 3 installation of at least 10 TFLOPS in Kolkata Region. A brief proof for such experience (copies of orders/installation certificate) should be included in the technical bid. All the three materials namely the Master, Slave nodes and Interconnect must be quoted by a single vendor. Part Quotation by a vendor is not admissible as future warranty and maintenance are difficult in the cases of fragment purchases. The OEM/OEM supported vendor should have their own service centre in Kolkata with technical knowhow to troubleshoot HPCC requirements. Sub-leasing of service/technical support by OEMs or OEM supported vendors is not admissible. The response time should not be more than 24 hours/next working day.

ii) 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 High Performance Linux Cluster using Enterprise Linux OS or equivalent (to be provided by vendor). It will be required by the vendor to install some commonly used scientific software like Gaussian, ADF, Gamess, NWChem, Molpro, DeMon2K, NAMD, LAMMPS, VASP, Quantum Espresso. Apart from this Software tools, MPI, OpenMP and other libraries/development kit like MPICH2/MVAPICH/OpenMPI has to be installed. GNU and Intel Versions of C, C++ and Fortran Compilers, Python versions 2.7, 3.3, 3.4, 3.5, 3.6 have to be installed. Intel Composer Studio Cluster Edition has to be installed. Open-Source stable Linux based job scheduler and resource manager (preferably PBS) has to be installed and configured. The vendor will have to create different queues, user groups with different job privileges as per requirement.

iii) 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 two weeks at the site of installation.

iv) 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.

v) 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.**

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.

A compliance table (see below) must be prepared and submitted along with the technical bid.

Sr. No	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.

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 super scribed 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 on CIF Kolkata and also FOB basis.

3. BID SECURITY:

- a. An Account payee Demand Draft/Pay Order of any Commercial Bank for Rs. 1,30,000 (Rupees One lakh and thirty 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 along with Technical Bid except those who are registered with the Central Purchase Organizations, Department of Micro, Small and Medium Enterprise (MSME), National Small Industries Corporation or the concerned Ministry or Department, as Bid Security money or Earnest Money Deposit (EMD). Alternatively, the Bidder shall have the option to furnish the EMD in the format of Bank Guarantee (BG).
- b. The Demand Draft for the Bid-Security should have at least about 90 (ninety) days validity period of opening of the bids.
- c. 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 of any commercial bank of India for 5% 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 installments. 90% of the money will be released on submission of shipping documents. 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 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 man powers who are responsible for after sales 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 bidding on the bidders.
14. For any clarification regarding technical specifications, information etc., please send your queries to **Prof. Tanusri Saha-Dasgupta** (mcstd@iacs.res.in), **Dr. Debashree Ghosh** (pcdg@iacs.res.in), **Dr. Avisek Das** (mcsad@iacs.res.in).
15. The authority of IACS reserves the right to reject any or all of the tenders received without assigning any reason thereof.
16. The courts of Kolkata would have jurisdiction over any legal issue arising out of this tender notice.

Acting Registrar