



INDIAN INSTITUTE OF TECHNOLOGY, KANPUR
GT ROAD, KALYANPUR, KANPUR – 208016
UTTAR PRADESH, INDIA

TENDER REFERENCE NO. : *CHE/JKS/2020/001*

BID SUBMISSION END DATE- 20.02.2020

TENDER DOCUMENTS

FOR

“Purchase of Computer Cluster.”

BID DOCUMENT

Online bids (Technical & Financial) from eligible bidders which are valid for a period of 120 days from the date of Technical Bid opening (i.e. 20.02.2020) are invited for and on behalf of the Assistant Registrar, IIT Kanpur for **“Purchase of Computer Cluster.”**

Name of Work	“Purchase of Computer Cluster.”
Date of Publishing	30.01.2020 (11:00 hrs)
Clarification Start Date and Time	30.01.2020 (11:00 hrs)
Clarification End Date and Time	20.02.2020(16:00 hrs)
Queries (if any)	No queries will be entertained after clarification end date and time
Bid Submission Start Date	30.01.2020 (14:00 hrs)
Last Date and time of uploading of Bids	20.02.2020 (16.00 hrs)
Last Date and time of submitting , EMD and other documents at IIT Kanpur (if any)	NA
Date and time of opening of Technical Bids	21.02.2020(16:00 hrs)
Date and time of opening of Financial Bids	Will be separately notified for Technically shortlisted/qualified bidders

Interested parties may view and download the tender document containing the detailed terms & conditions from the website <http://eprocure.gov.in/eprocure/app>

(The bids have to be submitted online in electronic form on www.eprocure.gov.in only. No physical bids will be accepted.)

INSTRUCTION FOR ONLINE BID SUBMISSION

The bidders are required to submit soft copies of their bids electronically on the Central Public Procurement (CPP) Portal ie <http://eprocure.gov.in/eprocure/app> , using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

REGISTRATION

- (i) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL: <https://eprocure.gov.in/eprocure/app>) by clicking on the link “Online Bidder Enrolment” option available on the home page. **Enrolment on the CPP Portal is free of charge.**
- (ii) During enrolment/ registration, the bidders should provide the correct/ true information including valid email-id & mobile no. All the correspondence shall be made directly with the contractors/ bidders through email-id provided.
- (iii) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- (iv) For e-tendering possession of valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) is mandatory which can be obtained from SIFY /nCode/eMudra or any Certifying Authority recognized by CCA India on eToken/ SmartCard.
- (v) Upon enrolment on CPP Portal for e-tendering, the bidders shall register their valid Digital Signature Certificate with their profile.
- (vi) Only one valid DSC should be registered by a bidder. Bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse and should ensure safety of the same.
- (vii) Bidders can then log into the site through the secured login by entering their userID/ password and the password of the DSC/ eToken.

SEARCHING FOR TENDER DOCUMENTS

- 1) There are various search options built in the CPP Portal to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords, etc., to search for a tender published on the CPP Portal.
- 2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- 3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS:

- (i) For preparation of bid Bidders shall search the tender from published tender list available on site and download the complete tender document and should take into account corrigendum if any

published before submitting their bids.

After selecting the tender document same shall be moved to the 'My favourite' folder of bidders account from where bidder can view all the details of the tender document.

- (ii) Bidder shall go through the tender document carefully to understand the documents required to be submitted as part of the bid. Bidders shall note the number of covers in which the bid documents have to be submitted, the number of documents – including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- (iii) Any pre-bid clarifications if required, then same may be obtained online through the tender site, or through the contact details given in the tender document.
- (iv) Bidders should get ready in advance the bid documents in the required format (PDF/xls/rar/dwf/jpg formats) to be submitted as indicated in the tender document/schedule. **Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.**
- (v) Bidders can update well in advance, the documents such as experience certificates, annual report, PAN, EPF & other details etc., under “My Space/ Other Important Document” option, which can be submitted as per tender requirements. This will facilitate the bid submission process faster by reducing upload time of bids.

SUBMISSION OF BIDS:

- (i) Bidder should log into the site well in advance for bid submission so that he/ she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay.
- (ii) Bidder should prepare the EMD as per the instructions specified in the NIT/ tender document. The details of the DD/BC/BG/ others physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- (iii) While submitting the bids online, the bidder shall read the terms & conditions (of CPP portal) and accepts the same in order to proceed further to submit their bid.
- (iv) Bidders shall select the payment option as offline to pay the EMD and enter details of the DD/BC/BG/others.
- (v) Bidder shall digitally sign and upload the required bid documents one by one as indicated in the tender document.
- (vi) Bidders shall note that the very act of using DSC for downloading the tender document and uploading their offers is deemed to be a confirmation that they have read all sections and pages of the tender document without any exception and have understood the complete tender document and are clear about the requirements of the tender document.
- (vii) Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document. For the file size of less than 1 MB, the transaction uploading time will be very fast.
- (viii) **If price quotes are required in XLS format, utmost care shall be taken for uploading Schedule of quantities & Prices and any change/ modification of the price schedule shall render it unfit for bidding.**

Bidders shall download the Schedule of Quantities & Prices i.e. Schedule-A, in XLS format and save it without changing the name of the file. Bidder shall quote their rate in figures in the appropriate cells, thereafter save and upload the file in financial bid cover (Price bid) only.

If the template of Schedule of Quantities & Prices file is found to be modified/corrupted in the eventuality by the bidder, the bid will be rejected and further dealt as per provision of clause no 23.0 of ITB including forfeiture of EMD.

The bidders are cautioned that uploading of financial bid elsewhere i.e. other than in cover 2 will result in rejection of the tender.

- (ix) Bidders shall submit their bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). **The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders at the eleventh hour.**
- (x) After the bid submission (i.e. after Clicking “Freeze Bid Submission” in the portal), the bidders shall **take print out of system generated acknowledgement** number and keep it as a record of evidence for online submission of bid, which will also act as an entry pass to participate in the bid opening.
- (xi) Bidders should follow the server time being displayed on bidder’s dashboard at the top of the tender site, which shall be considered valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system.
- (xii) All the documents being submitted by the bidders would be encrypted using PKI (Public Key Infrastructure) encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology.

ASSISTANCE TO BIDDERS:

- (i) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contract person indicated in the tender. The contact number for the helpdesk is 0512-259-7017 between 10:30 hrs to 17:00 hrs.
- (ii) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24X7 CPP Portal Helpdesk. The 24 x 7 Help Desk Number 0120-4200462, 0120-4001002 and 0120-4001005. The helpdesk email id is support-eproc@nic.in

INSTRUCTION FOR e-PROCUREMENT

1. PREPARATION AND SUBMISSION OF BIDS :

- a. The detailed tender documents may be downloaded from <http://eprocure.gov.in/eprocure/app> till the last date of submission of tender. The Tender may be submitted online through CPP Portal <http://eprocure.gov.in/eprocure/app>
- b. The bidder should submit the bid online in two parts viz. Technical Bid and Financial Bid. Technical Bid should be upload online in cover-1 and Financial Bid in “.Xls” should be upload online in cover-2

2. SUBMISSION OF THE BID : All interested eligible bidders are requested to submit their bids online on CPP Portal: <http://eprocure.gov.in/eprocure/app> as per the criteria given in this document:

- a. Technical Bid should be upload online in cover-1.
- b. Financial Bid should be upload online in cover-2

Both Technical and Financial Bid covers should be placed online on the CPP Portal (<http://eprocure.gov.in/eprocure/app>).

3. TECHNICAL BID: Signed and Scanned copies of the Technical bid documents as under must be submitted online on CPP Portal: <http://eprocure.gov.in/eprocure/app>.

a) **List of Documents to be scanned and uploaded (Under Cover-1) within the period of bid submission:-**

- i. Scanned copy of Bank details. (Bank details of principal supplier in case of Import shipments)
- ii. Scanned copy of work experience.
- iii. Scanned copy of certificate of GST. (GSTIN of Indian Agent in case of Import Shipments)
- iv. Scan copy of tender acceptance letter.
- v. Scanned copy of specifications or brochures (if any).
- vi. Scanned copy of other document mentioned in tender document (if any)

b) **For Import Shipments – Shipping Terms Ex-Works/FOB are preferred.**

NOTE - no indication of the rates/amounts be made in any of the documents submitted with the TC-BID.

4. **Financial Bid**

- a. The currency of all quoted rates shall be INR/USD/EUR.
- b. In preparing the financial bids, bidders are expected to take into account the requirements and conditions laid down in this Tender document. The financial bids should be uploaded online as per the specified “.Xls” format i.e. Price Bid Excel sheet attached as ‘.Xls’ with the tender and based on the scope of work, service conditions and other terms of the Tender document. It should include all costs associated with the Terms of Reference/Scope of Work of the assignment.

- c. The Financial Proposal should be inclusive of all applicable taxes, duties, fees, levies, and other charges imposed under the applicable laws. The rates quoted in the Tender are inclusive of all applicable taxes, duties etc. **except service tax**. The service tax component shall be re-immersible by the department after receipt of paid challans etc. if applicable.

5. Last Date for Submission of Tender:

- a. Online bids complete in all respects, must be submitted on or before the last date and time specified in the schedule of events.
- b. The IIT, Kanpur may, at its own discretion, alter/extend the last date for submission of tenders.

6. Bid Validity

- a. All the Bids must be valid for a period of 120 days from the last date of submission of the tender for execution of Contract. However, the quoted rates should be valid for the initial/ extended period of the Contract from the effective date of the Contract. No request will be considered for price revision during the original Contract period.
- b. A bid valid for a shorter period shall be declared as non-responsive.
- c. In exceptional circumstances, prior to expiry of the original time limit, the IIT may request the bidders to extend the period of validity for a specified additional period beyond the original validity of 120 days. The request and the bidders' responses shall be made in writing. The bidders, not agreeing for such extensions will be allowed to withdraw their bids without forfeiture of their Bid Security.

7. Modification / Substitution/ Withdrawal of bids:

- a. No Bid shall be modified, substituted or withdrawn by the Bidder after the Bid's due Date.
- b. Any alteration/ modification in the Bid or additional information supplied subsequent to the Bid's due Date, unless the same has been expressly sought for by the Authority, shall be disregarded.

8. Rejection of the Bid: The bid submitted shall become invalid and tender fee shall not be refunded if:-

- a. The bidder is found ineligible.
- b. The bidder does not upload all the documents as stipulated in the bid document.

Quotations are invited for **Computer Cluster**.

Please submit quotations (Technical and Commercial) for the following item for the up-gradation of an existing cluster:

S. NO	Description	Quantity
1.	Compute servers	4

Technical Specifications and Conditions

1. **Master Node**

Quantity	Already Available, not to be supplied by bidders	
Sr. No.	Specification	Description
1.	<p>Please Note: IIT KANPUR (User Department) already has a cluster with a master node. And the intended solution asked vide this RFP is to be integrated with that cluster.</p> <p>Master Node will remain the same as the existing one – bidders are supposed to supply, and integrate quoted items to integrated with existing nodes using the same master node.</p> <p>Thus Master Node is not required to be quoted with this solution</p>	

2. **Computer Node**

Quantity	4 units	
Technical specifications of each computational nodes as below:		
Sr. No.	Specification	Description
1.	Processor	Latest generation 2 x CPU Intel Xeon E5-2650v4 processors
2.	Memory	RAM: 128GB or more ECC DDR4-2400 Mhz or better RAM. At least 8 DIMMs available in total. System must support 3DS LRDIMMs
3.	Hard Disk Drives and SSDs	1 x 1024GB SATA Enterprise GRADE HDD
4.	HDD bays	4 Hot Swap HDD bays supporting HDDs or SSDs.(Large Form Factor based drive bays)

5.	GPU Accelerator Support	None
6.	I/O slots (<i>Peripheral Component Interconnect Express, PCIe</i>)	Minimum 1 × PCIe 3.0 x8 slot must be available Add on controllers.
7.	RAID Level support	RAID 0,1,10 level supported with RAID controller
8.	Graphics controller	Integrated Graphics Controller
9.	Network interface	At least 2 number of Gigabit ports on board.
10.	Ethernet ports	❖ 2 × 1 Gbps Ethernet ports with Preboot Execution Environment (PXE) boot capability (including CAT6 cable for connecting to switch)
11.	Ports	Minimum 4 USB ports out of which at least 2 must be of 3.0 generation or higher and one port for graphics.
12.	Cluster Interconnect	1 x Mellanox Single Port QDR HCA Controller or any latest gen based HCA to work with QDR Based switch already available with IIT Kanpur User Department
13.	Chipset	Intel C610 series or better
14.	Server management (Intelligent Platform Management, Interface, IPMI)	❖ IPMI 2.0 or equivalent Support with KVM and Media over LAN features. Must include any licenses, if required for using these features. ❖ It should be able to automate mgmt. tasks and automated firmware updates.
15.	Power supplies	Redundant N+1 or better 80 Plus Gold rated efficient power supplies.
16.	Cooling	Optimum no. of Cooling fans.
17.	Operating System	Should support latest version of 64-bit CentOS
18.	Warranty & Regulatory Compliance	❖ 3 years onsite warranty by OEM / Bidder. ❖ Physical on-site (IIT KANPUR) visit by technical experts of Bidder or OEM for maintenance and technical support whenever needed. ❖ Neither Server OEM nor the bidder be debarred or blacklisted or stopped from supplying equipment to any govt organization in the past.
19.	Software Suites	NAMD, LAMMPS, GROMACS and more open source software suites to be loaded as part of installation process by bidder. Commercial Codes can also be required to be loaded as per the requirement.
20.	Form Factor	- 2U Rack Mount or lesser.
21.	All required cables	

2. Cooling, Rack, and its monitoring/support/services

SL. No.	Items
I.	Rack: Racks and PDUs shall be provided by IIT Kanpur
III.	Air Conditioners: Air Conditioner with appropriate cooling and Server Room Space will be provided by IIT KANPUR.
IV.	Remote monitoring System: Must be integrated with system by bidder/OEM
V.	Key Board tray, cable manager, cable route, any other required accessories as per requirement of the above mentioned configuration of master and compute node.

4. Cluster Management and other S/W Stack

Operating System	CentOS
HPC Operating System Support	REQUIRED
Resource Management/Job Scheduling	
	Job status reporting
	Job History Reporting up to 6 months or more
	Policy-aware workload cum resource manager,
	Policy aware scheduling
	Resource-aware scheduling
	Topology-aware scheduling
	Dynamic reservation of resource
	Advance reservation Live support
	Support of job submission through CLI, Web-services and APIs
	Load aware power management
	Fair share support
	Multiple queues support
	Multiple partitions support
	Dynamic partitions support
	Dynamic queues support
	Scriptless job submission
	Heterogeneous cluster support
	Multi-cluster support
	MPI aware scheduling
Consumable resources scheduling	
Preemptive and backfill scheduling support	
Application integration support	
Live reconfiguration capability	
SLA/Equivalent	

	GPU and Co Processor Aware scheduling
	CPU, Multi Core , Multi thread aware scheduling
	Intuitive web interface to submit and monitor jobs
Resource Management/Job Scheduling Support	REQUIRED
File Systems Supported	Lustre FROM DAY ONE (native support for adding PFS in future)
Commercial Licensed Cluster Management S/W (License issued in the name of IIT KANPUR)	<p>Unified system management, monitoring toolset for configuration, diagnosis and management of the system, Cluster manager with provisioning, monitoring and reporting capabilities Support Package and Image based provisioning Support Diskfull and diskless cluster deployment Intuitive web interface to manage and customize the cluster Customizing networks and compute node profiles through GUI Customizing compute nodes (upto changing kernel parameter) Able to Push configuration changes and updates to the compute nodes without reinstalling and rebooting</p> <p>Note :</p> <ol style="list-style-type: none"> 1. Offered Commercial Stack must have been deployed as part of HPC Solution in the past at a govt educational research organisation– documentary evidence must be provided. 2. Required Cluster Management Stack, and Resource Manager must be integrated with existing nodes as well.
Software Support for both Serial and Parallel Environment	YES

5. Other Items

SL No:	Items
I.	Primary Interconnect - 1 Unit already available with User department – model no. of the same is - MSX6005T-1BFS. HCA controllers and cables required with nodes must be supplied ensuring the same work with existing switch model mentioned in this document.
II.	Secondary Interconnect - 1 Unit of - 24 Port Ethernet Switch already available with user department. Cables required for interconnectivity must be supplied by bidders

6. Training and Installation

SL No:	Items
I.	❖ Installation of items part of this tender will have to carried out by the vendor. Any specific requirement of vendor regarding installation of above mentioned items must be mentioned in the technical bid so that IIT KANPUR can provide the resources for the same.
II.	❖ 1 day in-house training by Certified Professionals at IIT KANPUR including installation of software, bench-marking HPL, monitoring of HPC Cluster for 24 Hours, LINUX commands, HPC Management etc. Scripts for the bench-marking calculations will provide on request.

7: Scope of Work with Deliverables to be part of implementation:

1. Physical Verifying Hardware items in Bill of Material
2. Rack mounting all the Hardware and Connecting Power cables, Ethernet cables to all the nodes, installations, configuration of cluster and toolkit, scheduler etc.
3. Installation of Compilers & Libraries
4. Testing of applications and Verification of Complete setup functionality
5. Demonstration of HPL Benchmark performance of minimum 70-75% on CPU
6. Cluster Usage Training & Scheduler training to End Users
6. Documentation
7. Project final Sign-off

8: Technical Conditions:

Mandatory requirements for a bidder to qualify as a participant in this tender:

1. The Server OEM should have executed at least 2 HPC Cluster projects(at least one cluster of the size 80TF(peak) CPU-CPU or CPU-GPU) in india using Infiniband Fabric or OPA Fabric architecture and technologies at premier Govt or Private Indian academic and research institutions like IISc, TIFR, IISER, IIT, JNCASR or other govt education & research organisations in India. Details/Proof of the same must be submitted with technical bid. Credential/Experience of an OEM will also be considered if supplies done by their authorized partner.
2. Neither Server OEM nor the bidder be debarred or blacklisted or stopped from supplying equipment to any govt organization in the past.
3. All warranty and support must be provided by the bidder.
4. The bidder should have valid ISO certification. Please attach a copy of the certificate.
5. The bidder must be authorised partner/system integrator of Server and Mellanox and a letter of authorization for the tender from both must be enclosed. Authorisation from Mellanox is required for necessary support confirmation by the OEM.
6. The Institute reserves the right to accept or reject any or all of the offers in full/part without assigning any reason whatsoever.
7. The bidder should clearly specify make and model in both Technical and Financial bid.
8. Warranty and support for minimum 3 years on-site should be mentioned in the financial and technical bids.
9. Terms and Conditions, and deviations should be clearly stated with the signature of the responsible person.

Important Dates:

Date of issue of this inquiry: 30.01 2020

Last date for receiving quotations: 20.02. 2020

Contact Address:

Prof. Jayant K. Singh

Professor

Department of Chemical Engineering

IIT Kanpur-208016, India

Office: +91-512-2597017

Email: jayantks@iitk.ac.in

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

Date: _____

To,

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____

Name of Tender / Work: - _____

Dear Sir,

1. I / We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely:

_____ as per your advertisement, given in the above mentioned website(s).

2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc .), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/ organisation too have also been taken into consideration, while submitting this acceptance letter.

4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.

5. I / We do hereby declare that our Firm has not been blacklisted/ debarred/ terminated/ banned by any Govt. Department/Public sector undertaking.

6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organisation shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,
(Signature of the Bidder, with Official Seal)