
	सामग्री प्रबंधन अनुभाग भारतीय प्रौद्योगिकी संस्थान, रुड़की रूड़की-247667, हरिद्वार, उत्तराखण्ड, भारत Phone-(O) 01332-28-4293, 4693 E-mail: mmiitr@iitr.ac.in	Material Management Section Indian Institute of Technology Roorkee-247667(Haridwar) (Uttarakhand) (India) Phone-(O) 01332-28-4293, 4693 E-mail: mmiitr@iitr.ac.in	
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	PAN-AAALI0033R		

निविदा प्रलेख / Tender Document

No. 1100001840/MM-20/IITR/2020-21/High performance computin/MIED/329

Date of Uploading of Tender -<https://eprocure.gov.in/eprocure/app>

8-Feb-2021

Bids under two bid systems (Technical and Commercial) are invited Online at CPP Portal (<https://eprocure.gov.in/eprocure/app>) from the reputed manufacturer/authorized supplier/dealer for the following items. **Manual bids will not be accepted.**

वस्तु की तकनीकी विशिष्टताएँ / Technical Specifications of item:

Sr. No	Name of item / Specifications	QTY	UOM
1	High Performance Computing Cluster	1	Set
(For Detailed Technical Specification Plz refer Annexure-V)			
नोट-1: कृपया वस्तु का मूल्य एवं कर अलग-अलग दर्शाए।			
Note-1: Please quote the Rate & Taxes of the item separately.			
Note-2: E-way bill is to be issued by the Venders/Transporter			
Note-3: The HSN / SAC Code of the item must be mentioned.			
For Reasonability of Rates, The firm must enclose the last two supply orders for the same item with Financial Bid (Annexure-III) only.			
Critical Date Sheet			
1	Published Date	8-Feb-2021	(17:00)
2	Bid Document Download / Sale Start Date	8-Feb-2021	(17:30)
3	Seek Clarification Start Date	8-Feb-2021	(18:00)
4	Seek Clarification End Date	11-Feb-2021	(16:00)
5	Pre Bid Meeting Date	Not Required	Not Required
6	Bid Submission Start Date	12-Feb-2021	(15:00)
7	Bid Submission End Date	1-Mar-2021	(15:00)
8	Bid Opening Date	1-Mar-2021	(15:30)

Chapter-1 : Instruction to bidders

- A. The Tender should be enclosed with proper certifications like Agency Certification, Authorization certificate and/or Proprietary Certificate, as the case may be, in support of your offer.
- B. बोली का जमा किया जाना / **Submission of Bids:**
The bids should be submitted online in two parts –
1 (i) The Technical Bid (Annexure-I, II, IV & V) and Tender Acceptance Letter
(ii) The Financial Bid (Annexure-III) & Price Bid in .XLS Format
Rates in .xls format will only be considered for Financial evaluation.
2 The bids should be on official pad preferably with GST Number of the firm

- 3 The quotations should bear full details and where possible may be duly supported with catalogues, pamphlets, literature, samples of the item/items as the case may be for comparing the quality and rates of the item(s).
- 4 The transportation cost, insurance charge etc., if any, percentage/ rate of GST or all other taxes and duties should be clearly mentioned.
- 5 The bids / rates / tenders should remain valid for a minimum period of 90 days from the date of financial opening.
- 6 **Since this purchase being for research purpose, I.I.T., Roorkee is registered in DSIR, New Delhi, it is therefore exempted from the payment of GST up to the limit of exemption as per Govt. Rules. The bidder should quote accordingly.**
- 7 The rates shall not be subject to escalation of any nature.
- 8 The rates quoted should be applicable to educational institutions and any cost advantage received in lieu thereof should be passed on the Institution.
- 9 While quoting / sending rates, the firm shall give an undertaking as per Annexure-II.

C. विधि निक्षेप/ Earnest Money Deposit (EMD):

In lieu of EMD, declaration is to be provided/submitted as per annexure-IV of the tender document.

D. निष्पादन बैंक प्रत्याभूति/ Performance Bank Guarantee (PBG):

In case the total order value of items becomes Rs.25.00 Lakhs or above, 3% of the total order value in the form of Bank Guarantee or FDR pledged in favor of "The Registrar, IIT Roorkee" is required at the time of installation of the equipment which should remain valid at least during the warranty period plus sixty days. No interest shall be claimed by the bidder on the PBG submitted.

E. बोलियो का खोला जाना/ Opening of Bids:

- 1 The Technical Bids will be opened online at CPPP Portal (<https://eprocure.gov.in/eprocure/app>)-**Plz refer Critical Date Sheet**
- 2 The Financial bids of only the Technically Qualified bidders will be opened. The date and time for opening the Financial Bid will be communicated to the respective firm later by the system (CPP Portal (<https://eprocure.gov.in/eprocure/app>))
- 3 Representatives of the firms(s) may be present at the time of openings, if they so desire.

Chapter-2 : Conditions of Contract

F. ठेका देना/ Award of Contract:

The final selection of the bidder for the award of the contract will be made on the basis of the lowest commercial bid amongst the Technically Qualified Bidders.

G. पूर्व-आपूर्ति निरीक्षण/ Pre-supply Inspection:

Authorized representative of the Institute shall make the final inspection before supply of the item at site of the firm, if required.

H. वस्तु की आपूर्ति/ Supply of Item:

The whole supply as per order shall have to be completed within the time mentioned in the order failing which the I.I.T. Roorkee shall have the right to accept or reject any quantity of items ordered. The firm will have to arrange for supply of the material in good condition.

I. भुगतान की शर्तें/ Payment Terms:

A. Payment in INR for supply of goods:

100% Advance will be paid against submission of 110% Bank Guarantee of the Total Order value. Bank Guarantee should be in favor of "The Registrar, IIT Roorkee" which should be valid till the date of Installation/Delivery period + 30 days

J. दंड/Penalty:

A penalty of 0.5% of the total order value per week shall be levied for the delay subject to a maximum of 5% of the total order value.

In case of the non-supply of the item after the acceptance of the work/supply order, the firm will be debarred from any future bidding process of IIT Roorkee for a period of minimum one year.
(Please refer annexure-IV)

K. अप्रत्याशित घटना/Force Majeure:

For the purpose of and within the scope of contract by way of indication and not of limitation, the term "Force Majeure" shall mean acts of nature, strikes, Lockouts, or other industrial disturbances, act of public/enemy, wars, blockades, insurrection, riots, epidemics, landslides, earthquakes, storms lightening, flood, washouts, civil disturbances, explosion and any other similar even not within the control of either party on which by exercise of due care and diligence neither party is able to prevent or overcome.

L. मध्यस्थता / Arbitration:

In the event of any difference or dispute arising out this work, all effort shall be made by both the parties to settle the same amicably. Failing an amicable settlement, the dispute shall be finally settled through arbitration conducted under the Arbitration and Conciliation Act 1996, by arbitrators appointed in accordance with the said Act. The arbitration shall give reasoned and speaking award. All disputes are subject to Roorkee jurisdiction only.

M. बोली अस्वीकृती के लिए मानदंड / Criteria for bid rejection:

- 1 If technical bid found without the required undertaking (Annexure-II) and declaration (Annexure-IV).
- 2 If it found at a later date that any information given in the bids is Incorrect/false then the bid is liable to be disqualified/rejected.
- 3 Canvassing in any form will result to disqualification.
- 4 If "extra, as actual" etc. are mentioned against any of the price components in the bid the bid will be rejected.
- 5 If the firm quotes 'NIL' charges / consideration, the bid shall be treated as unresponsive and will not be considered.
- 6 If financial bid is found along with technical bid in pdf on CPP Portal, then the bid shall be rejected outrightly.
- 7 If any bidder submitting two/multiple bids for the same item of a tender, both/all the bids of that bidder will be outrightly rejected.

Chapter-3 : Schedules of requirements

N. टिप्पणी / Note:

- 1 If the supplier/firm is manufacturer/authorized dealer/sole distributor/of the item, the certificate to this effect should be attached.
- 2 Please note that the firms must submit the compliance Statement in an organized and structured manner in respect of all the specifications as per Annexure-V with the supporting catalogue/leaflet of the firm. Annexure-I, II & V have to be submitted with Technical Bid and Annexure-III with financial bid.
- 3 It may also be noted that the tender bids received after the stipulated date & time or found incomplete and the tender bids containing false/incorrect information shall be summarily rejected. The Institute shall not entertain any communication in this regard, whatsoever.
- 4 The firm is required to give its Bank Account details with IFSC for the purpose of making e-payment.
- 5 The Indian Institute of Technology (IIT) Roorkee reserves the right to reject any quotation wholly or partly without assigning any reason.
- 6 The quantity shown in the tender can be increased or decreased to any extent depending upon the actual requirement.
- 7 The decision of the institute in all matters relating to eligibility, acceptance, rejection of the bid will be final and binding on the applicants.
- 8 IIT Roorkee discourages High Sea Sale purchase. All tenders with High Sea Sale will be rejected.
- 9 The firms should clearly mention (in the financial bid) the Harmonized System of Classification (HS code) defined by the Central Custom and Excise Board (Govt. of India)- for the item(s) involving import.
- 10 **If the bid opening date happens to be a holiday, then the bid will be opened at 3.30PM of the next working day followed by the holiday.**
- 11 If an agent submits bid on behalf of the Principal/OEM, the same agent can not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.
- 12 Indian Agent should submit the certificate from the Foreign Principal that they are the Authorized & Registered Indian Agent.
- 13 The quantity shown against the item is approximate and may vary as per demand of the Institute at the time of placing order. Also, the final requirement of each line item will be decided by the Institute at the time of placing the PO.
- 14 **Any corrigendum/addendum/errata in respect of the Tender Notice/ Enquiry letter shall be made available CPP Portal (<https://eprocure.gov.in/eprocure/app>). Hence prospective bidders are advised to visit the CPP Portal (<https://eprocure.gov.in/eprocure/app>) regularly.**
- 15 Bidders shall be responsible for the correctness of the information provided in the enquiry letter/tender document. If it is found at a later date that any information given in the bid is Incorrect/false then the bid is liable to be disqualified/rejected.

- 16 Before submission of bids, bidders should read the complete enquiry letter/tender document carefully and ensure that the bidders fulfill the eligibility criteria.
- 17 In case the item/product is under rate contract with DGS&D or GeM, then Bidder should certify that the rate quoted is not over and above (higher side) the rates under RC with the DGS&D or GeM.
- 18 **In Item Wise BoQ .xls sheet, In column M, leave blank for the item/service not provided/quoted by you. If quoted 0 then it will be considered that the item/service will be provided free of cost.**
Or
In Item Rate BoQ .xls sheet, If quoted 0 for the items/services in column M then it will be considered that the items/services will be provided free of cost.
- 19 **The Institute reserves the right to rectify any discrepancy of this advertisement, if found later on. In case of any inadvertent mistake in the process which may be detected at any stage even after the issue of purchase order, the Institute reserves the right to modify/withdraw/cancel any communication made to the bidder.**

Chapter-4 : Specifications and allied Technical details

Plz. See Annexure- I, II, IV, V

Chapter-5 : Price Schedule (to be utilized by the bidders for quoting their prices online in .XLS format at CPPP Portal (<https://eprocure.gov.in/eprocure/app>))

Plz. See Annexure- III & Price Bid in .XLS Format

Chapter-6 : Contract Form

Purchase Order is used as Contract Form

Chapter-7 : Other Standard Forms, if any to be utilized by the purchaser and bidders

Tender Acceptance Letter

***उप कुलसचिव (सामग्री प्रबंधन) / सहायक कुलसचिव (सामग्री प्रबंधन)**

Deputy Registrar (MM)/ Assistant Registrar (MM)

***Document Digitally Signed on <https://eprocure.gov.in/eprocure/app>**

For any Clarification regarding technical specifications of item Please Contact:

**Prof. Siladitya Pal
Deptt. of Mechanical and
Industrial Engineering
IIT Roorkee**

**Deptt. of Mechanical
and Industrial
Engineering,
IIT Roorkee**

**Ph.-01332-28-4846
Email: siladitya.pal@me.iitr.ac.in**

तकनीकी बोली

विस्तृत विवरण अनुपालन रिपोर्ट के साथ प्रस्तुत किया जाना है (अपने आधिकारिक लेटर हेड पर विक्रेता/ फर्म द्वारा प्रस्तुत करने के लिए)

Detailed specification cum compliance report to be submitted with the Technical Bid
(to be submitted by the vendor/firm on its official letter head)**(For Detailed Technical Specification Plz refer Annexure-V)**

Sr.No	Name & Required Specifications of Item(s)	Qty	UOM	Offered specifications of item(s) by the firm
1	High Performance Computing Cluster	1	Set	
	Firm's Profile :			
1	Manufacturer/Authorized Agent/Distributor/Dealer/Supplier(valid certificate must be attached)			
2	E-mail I.D. & Telephone/Mobile No. Detail of Bank A/C			
Note:	1. "offered specifications", should be filled up properly in the format provided as per Annexure-I.			
	2. Volume & Weight of the item should also be mentioned.			
	3. The HSN / SAC Code of the item must be mentioned.			

Signature: _____

Name : _____

Designation : _____

Seal of the Organisation

उपबंध / UNDERTAKING

Ref. No. No. 1100001840/MM-20/IITR/2020-21/High performance computin/MIED/329
Dated:- 8-Feb-21

That all the terms/conditions mentioned in the enquiry letter/tender against which the rates are being given are acceptable to the firm.

It is certified that the rate quoted is not over and above (higher side) the rates under RC with the DGS&D or GeM.

It is certified that the firm has never been black-listed from any Government Department. (State/Central Govt./ Autonomous/ PSU)

Signature_____

Name_____

Financial Bid

(to be submitted by the vendor/firm on its official letter head)

Ref. No. No. 1100001840/MM-20/IITR/2020-21/High performance computin/MIED/329
Date: 8-Feb-21

Rates :

Sr. No	Name of item / Specifications	Qty	UOM	Rate	Amount (INR Only)
					To be filled in .XLS sheet (attached)
Total					
Grand Total Rs.					

1) Price of the items should be clearly mentioned if supplied Free of Cost.

Terms & Conditions:

- 1 Prices (quoted in Rs.): FOR Deptt. of Mechanical and Industrial Engineering,
IIT Roorkee
- 2 **Payment:** **Should be clearly mentioned, As per clause-I of enquiry letter.**
- 3 Validity:
- 4 Delivery period:
- 5 Other charges:
- 6 **Warranty:**
- 7 Rejection: Equipment if found not as per the required specification would be rejected.
As per clause-J of enquiry letter.
- 8 Penalty Clause: In case of the non-supply of the item after the acceptance of the work/supply order, the firm will be debarred from any future bidding process of IIT Roorkee for a period of minimum one year.
(Please refer annexure-IV)
- 9 PBG: In case the total order value of items becomes Rs.25.00 Lakhs or above, 3% of the total order value in the form of Bank Guarantee or FDR pledged in favor of "The Registrar, IIT Roorkee" is required at the time of installation of the equipment which should remain valid at least during the warranty period plus sixty days. No interest shall be claimed by the bidder on the PBG submitted.
- 10 Only GST Exemption Certificate is provided by the Institute (If required).

It is certified that the rate quoted is not over and above (higher side) the rates under RC with the DGS&D or GeM.

Signature _____
Name _____
Designation _____
Seal Of the Firm/Organization _____

Details of Institute :

IEC CODE	0100000011	
AD CODE	0001069-2770325	S.B.I., IIT ROORKEE
	0303974-2770324	P.N.B. IIT ROORKEE

DECLARATION
(to be submitted by the vendor/firm on its official letter head)

**To,
Registrar,
IIT Roorkee,
Roorkee,**

Subject: Undertaking as per GFR – 2017, Rule 170(iii) in lieu of Bid Security/Earnest Money Deposit (EMD)

Tender Ref no: No. 1100001840/MM-20/IITR/2020-21/High performance computin/MIED/329

Dated 8-Feb-21

Dear Sir,

We, the undersigned, offer to Supply the
..... as per tender at IIT Roorkee, in response to your above refered tender no.

We are hereby submitting our proposal/Bid/Quote for the same, which includes Technical bid and the Financial Bid. As a part of eligibility requirement stipulated in above refered tender document, we hereby submit a declaration in lieu of Earnest Money Deposit (EMD) as given below:

1. Our bid shall remain valid for 90-days from the date of financial opening and that we will not withdraw or modify our bid during the validity period,
2. In case, we are declared as successful bidder and an order is placed on us, we will submit the acceptance in writing within 7 days of placement of order on us.
3. In case, we are declared as successful bidder and an order is placed on us, we undertake, to submit a Performance Bank Guarrantee(PBG) as mentioned in above refered tender document or as per terms stipulated in the Purchase Order.
4. In case of failure on our part to comply with any of the above said requirements, we are aware that we shall be declared as un-eligible for said tender and /or debarred from any future bidding process of IIT Roorkee for a period of minimum one year.
5. The undersigned is authorized to sign this undertaking.

Signature:

Name:

Designation:

Seal Of the Firm/Organization:

Instructions for Online Bid Submission

Instructions to the Bidders to submit the bids online through the Central Public Procurement Portal for e Procurement at <https://eprocure.gov.in/eprocure/app>.

- 1 Possession of valid Digital Signature Certificate (DSC) and enrollment/registration of the contractors/bidders on the e-Procurement/e-tender portal are prerequisite for etendering.
- 2 Bidder should register for the enrollment in the e-Procurement site using the "Online Bidder Enrollment" option available on the home page. Portal enrollment is generally free of charge. During enrollment/registration, the bidders should provide only valid and true information including valid email id. All the correspondence shall be made directly with the contractors/bidders through email id as registered.
- 3 Bidder need to login to the site through their user ID/ password chosen during enrollment/registration.
- 4 Then the Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by SIFY/nCode/eMudra etc. recognized by Controller of Certifying Authorities (CCA) India on eToken/SmartCard, should be registered.
- 5 The registered DSC only should be used by the bidder in the transactions and should ensure safety of the same.
- 6 Contractor/Bidder may go through the tenders published on the site and download the tender documents/ schedules for the tenders.
- 7 After downloading/getting the tender document/schedules, the Bidder should go through them carefully and then submit the documents as required, otherwise bid will be rejected.
- 8 Any clarifications may be sought online through the tender site, through the contact details or during pre-bid meeting if any. Bidder should take into account the corrigendum if any published before submitting the bids online.
- 9 Bidder may log in to the site through the secured login by the user id/ password chosen during enrolment/registration and then by submitting the password of the e-Token/Smartcard to access DSC.
- 10 Bidder may select the tender in which he/she is interested in by using the search option and then move it to the 'my tenders' folder.
- 11 From my tender folder, he may select the tender to view all the details uploaded there.
- 12 It shall be deemed that the bidder has read and understood all the terms and conditions before submitting the offer. Bidder should go through the tender schedules carefully and upload the documents as asked; otherwise, the incomplete bid shall stand rejected.
- 13 Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document/ schedule and ordinarily it shall be in PDF/xls/rar/jpg/dwf formats. If there is more than one document, all may be clubbed together and provided in the requested format. Bidders Bid documents may be scanned with 100 dpi with black and white option. It is advisable that each document to be uploaded through online for the tenders should be less than 2 MB. If any document is more than 2MB, it can be reduced through zip/rar and the same if permitted may be uploaded. The file size being less than 1 MB the transaction uploading time will be very fast.
- 14 The Bidders can update well in advance, the documents such as certificates, annual report details etc., under "My Space option" and these can be selected as per tender requirements and then send along with bid documents during bid submission. This will facilitate the bid submission process faster by reducing upload time of bids.
- 15 Bidder should submit the Tender Fee/ EMD as specified in the tender. Scanned copy of the same should be uploaded as part of the offer. (if applicable)
- 16 While submitting the bids online, the bidder shall read the terms and conditions and may accept the same to proceed further to submit the bid packets.
- 17 The bidder has to select the payment option as offline to pay the Tender FEE/ EMD as applicable and enter details of the same. (if applicable)
- 18 The details of the DD/any other accepted instrument, physically delivered, should tally with the details available in the scanned copy and the data entered during bid submission time, otherwise submitted bid shall not be acceptable or liable for rejection. (If applicable)
- 19 The bidder has to digitally sign and upload the required bid documents one by one as indicated. Every act of using DSC for downloading the bids and uploading their offers shall be deemed to be a confirmation that they have read, understood and agreed with all clauses of the bid document including General conditions of contract without any exception.
- 20 The bidder has to upload the relevant files required as indicated in the cover content. In case of any irrelevant files, the bid may be rejected.

- 21 If the price bid format is provided in a spread sheet file like BoQ_XXXX.xls, the rates offered should be entered in the allotted space only and uploaded after filling the relevant columns. The Priced-bid/BOQ template shall not be modified / replaced by the bidder; else the bid submitted is liable to be rejected for the tender.
- 22 The bidders are advised to submit the bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission due date and time (as per Server System Clock). The TIA shall not be held responsible for any delay or the difficulties faced during the submission of bids online by the bidders.
- 23 After the bid submission (i.e. after Clicking "Freeze Bid Submission" in the portal), the acknowledgement number indicated by the system should be printed by the bidder and kept as a record of evidence for online submission of bid for the particular tender and also be used as entry pass to participate in the bid opening.
- 24 The time settings fixed in the server side and displayed at the top of the tender site, shall remain valid for all actions of requesting, bid submission, bid opening etc., in the e- Tender system. The bidders should follow such time during bid submission.
- 25 All the data being entered by the bidders would be encrypted using Public Key Infrastructure (PKI) encryption techniques to ensure the secrecy of the data. The data entered is not retrievable by unauthorized persons during the bid submission and until the time of bid opening by any person.
- 26 Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers' public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 27 The confidentiality of the bids is maintained with the use of Secured Socket Layer (SSL) 128 bit encryption technology. Data storage encryption of sensitive fields is done.
- 28 The bidder should logout of the tendering system using the normal logout option available at the top right hand corner and not by selecting the (X) exit option in the browser.
- 29 For any queries regarding e-Tendering process, the bidders may contact at address as provided in the tender document. Parallely for any further queries, the bidders are advised to contact over phone: **0120-4001005** or send an e-mail to – cppp-nic@nic.in.

Prequalification

- 1 An undertaking by the firm that it has never been black-listed must be attached along with the Bid, failing which the Bid shall be rejected. (As per Annexure-II)
- 2 True copy of Permanent Account Number.
- 3 Details of GST along with a copy of certificate to be attached.
- 4 Submission of samples if required, for all items indicated in the NIT. The make of items proposed to be supplied should be indicated and submitted along with the techno commercial unpriced bid without indicating the pricing components.
- 5 Willingness to execute all orders which are placed to meet emergency requirement on priority basis. The Bidder shall note that standards for workmanship, material and equipment, and references to brand names designated by the Purchaser in the tender document are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names and/or catalogue numbers in his bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

Tender Acceptance Letter
(To be given on Company Letter Head)

Date:

Sub: Acceptance of Terms & Conditions of Tender.

Tender No. 1100001840/MM-20/IITR/2020-21/High performance computin/MIED/329

Tender description:

Dear Sir,

- 1 I/We have downloaded/ obtained the tender document(s) for the above mentioned 'Tender No.' 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 section(s), schedules(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 In case any provisions of this tender are found violated, then your department/organisation shall without prejudice to any other right or remedy be at liberty to reject this tender/bid including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

SPECIFICATIONS FOR HIGH END COMPUTATIONAL FACILITY

1. Master Node (Quantity 1)


Item	Description of Requirement	
Chassis	2 U Rack Mountable or thinner	
CPU	Two nos of x86 processors having (2.4 GHz or higher, 32 cores) each (latest generation or better) with efficient cooling provision for CPU	
Memory	32DIMM slots. 256 GB DIMMS scalable upto 1.0 TB using DDR4 Registered DIMM (RDIMM) operating at 3200 MHz or higher with a balanced configuration and fast fault tolerance feature.	
Hard disk drive	2 x 480 GB SATA 7200 rpm or higher and 4 x 4 TB SAS drives or higher	
Controller	PCIe 3.0 based 12Gb/s SAS Raid Controller with RAID 0/1/1+0/5/50/6/60/1	
Networking features	200 Gbps (or higher) Infiniband Single Port Controller with copper cable must be supplied.	
Networking	Integrated 2 x 1Gb/10Gb ethernet ports	
Interfaces	Serial – 1 (1 VGA/ graphics port) Micro SD slot - 1 USB 3.0 support With Up to 5 total: 1 front, 2 rear, 2 internal (secure)	
Bus Slots	Eight PCI-Express 3.0 slots, atleast two x16 PCIe slots	
Power Supply	Redundant (N+1) 90 Plus Platinum/Titanium Certified efficient power supplies.	
Fans	Appropriate cooling system need to be provided	
Operating Systems and software support	Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES)	
System Security	Secure boot and Secure start support Security feature to ensure server do not execute compromised firmware code Real time firmware security scanning System shall support Automatic BIOS and Firmware Recovery from malicious changes	
Warranty	5 year comprehensive onsite warranty	

Siladitya Pal
28.01.2021








28.1.21

Sivaditya Pal

SI #	Item	Description	
2, Compute Nodes (64 cores per node) (16 nodes 16x64= 1024 cores) 1 set			
Compute Node Specifications			
Each of the compute nodes in the chassis/enclosure should be configured with the following:			
1	CPU	Two nos of x86 processors having (2.4 GHz or better, 32 cores each)	
2	Memory Requirement	16 DIMM slots should be available 256 GB DIMMS scalable upto 1.0 TB, operating at 3.0 GHz, with a balanced configuration and fast fault tolerance feature.	
3	RAID Controller	RAID controller that supports RAID 0, 1, & 10	
4	Hard Disk Drives & SSDs	2 x 480GB SATA Enterprise GRADE SSD (3 DWPD)	
5	HDD bays	Hot Swap HDD bays- supporting 3 or more SAS/SATA Hard drives/Solid State Drives.	
6	Primary Interconnect Port	200 Gbps (or higher) Infiniband Single Port Controller with copper cable must be supplied.	
7	Networking	Integrated 2 x 1Gb/10Gb ethernet ports	
8	Port	Minimum 2 USB ports , 1 VGA/ graphics port	
9	PCI-Express 3.0 slots	The compute node should have at least 1 no. of PCIe -Gen3 (x8) low profile slot for adding internal devices like Hardware RAID controller.	
10	I/O slots (Peripheral Component Interconnect Express, PCIe)	2 x 1 Gbps Ethernet port with Preboot Execution Environment (PXE) boot capability required number of cables connecting node with switch must be supplied (2 x 2m CAT6 or higher/compatible cable must be supplied)	
11	Power supplies	Redundant (N+N) 90 Plus Platinum/Titanium Certified power supplies. Multi node architecture for compute nodes is permitted, with shared power supplies.	
	Cooling	Appropriate cooling system need to be provided	
	Operating System and software support	Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES)	
	Form Factor	Rack Mount -1U or lesser effective rack space per node	
12	Warranty	5 year comprehensive onsite warranty	

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3. PFS Storage Node (Rack Mountable): Quantity 02

- Processor: x86_64processor with base frequency of minimum 2.4 GHz or better, minimum 16 cores -2 Nos
- RAM: Minimum 256 GB ECC DDR4 Memory - 1 set
- Balanced memory configuration
- All DIMM used must be identical in all respect and RAM size should be chosen to yield maximum rated dual channel memory Band width
- Memory Protection: Advanced ECC with multi-bit error protection, online spare and mirrored memory
- Hard Disk: SSD Hard Drive of minimum 480GB, Integrated RAID Controller with RAID 1 capability -2 Nos
- Network: Gigabit port - 2 Nos
- Primary Interconnect: Point to point interconnect providing 100Gbps throughput - 1 No
- PCI express slots Minimum 4th generation - 2 Nos
- USB ports – free ports of USB 3.0 or better - 2 Nos
- Necessary power adapters and power cards with Indian AC Standards (230V/50Hz) - 1 set
- HBA card with minimum 2 ports with cables (additional ports may be provided to meet the system performance requirement) - 2 Nos
- Form Factor - 2U or less per node
- BTU rating should not exceed 3200 BTU/hr

4. PFS Storage (Rack Mountable): Quantity 01

- Minimum 200 TB usable (excluding metadata) storage with RAID 6 (8D +2P) using NL-SAS hot plug with provision for expansion, - 1 set
- Read and Write throughput (Independently) - Minimum 2.5Gbps
- Necessary power adapters and power cards with Indian AC Standards (230V/50Hz) -Redundant
- Storage controller with cache size 8GB for PFS or more
- IB HCA card and IB cable for connecting storage with IB network - 1 set

5. Interconnect Switches

	Description	
	1 Unit of - 24 Port Ethernet Switch for Secondary Communication Purpose (Min 1GB RAM, 4GB Flash and 12 MB packet buffer size or higher)	
	1 Unit of- 24 Port Ethernet Switch for management network must be supplied (Min 1GB RAM, 4GB Flash and 12 MB packet buffer size or higher)	
	1 Unit of 40 port Infiniband based 200 Gbps or better based Interconnect switch with redundant power supplies and embedded subnet manager for 40 devices. Necessary cables and adapters for all components must be provided	
Warranty and Support	Five Year Warranty and support directly from the switch OEM.	
	Software upgrades/updates shall be included as part of the warranty	

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6. Smart Rack (Minimum of 2 Nos. racks) consisting of 42U Rack, UPS & cooling solution suitable to run the HPC cluster up to 1024 core computing set up

Specification of Modular Data Center – Single Smart Rack Solution with adequate cooling capacity (N+N) and UPS System with at least 20 Minutes backup.	
Specification	Description of Items
Modular Design	(i) The Mini Data Center (42HU x 1Nos) suitable for free standing installation. (ii) Provisioning of Mini Data Center for further extension.
Dimension (HXWXD) in mm	42U x 2 Nos.- 800 mm Wide x 2000mm Height x 1200mm Deep.
Access Control	High Security Electro-mechanical code combination lock & Rear with auto door opening system,
Cooling System • Cooling noise level 80 dB (A) or less • Voltage 230/1/50 V/Ph/Hz	Appropriate cooling system to operate the facility less than 35 degree C with appropriate temperature monitoring & display
Electrical Power Distribution System	(i)Provisioning of structured power distribution system. The 3-Phase commercial conditioned 440V/50Hz power supply will be made available by the user at the Distribution panel along with MCCB. (ii)This Main Distribution panel will be used to distribute power to all power consuming devices used in Mini Data Center such as: UPS, Air-Conditioning system. Required electrical cables
Power Distribution Units for Racks	Appropriate power distribution unit with required cable must be provided
Monitoring	Provisioning of IP based monitoring Fault signals
(Monitoring & Remote Management)	Facility should be provided (details must be in the technical bid)
Early Fire Detection and Extinguishing Systems	(i) Delivery of an active extinguishing system that detects and extinguishes fires in closed server and network cabinets. (ii). The integrated extinguishing system must trigger if the concentration of smoke exceeds certain limits. The extinguishing process must not be electrically conducting and must be fast and residue-free. The fire system, Cooling system, IPPDU, Monitoring system. Racks have to be from one OEM for better management
Installation & Training	(i) Installation of the Mini Data Center and the relevant components has to be carried out by qualified technicians/OEM engineer. (ii)01 days onsite training to the user will be given by the vendor.
UPS System	Required UPS (N+N) redundancy with at least 20 Minutes back on common battery bank, UPS and batteries Will be mount in smart rack.
Warranty	5 years including replacement of batteries

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7. Software

- GUI/Web based Cluster management software which supports Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), Centos
- Operating system – RHEL
- Provide suitable workload management software and job scheduler
- AMD compiler suite (if AMD processor is supplied) - 1 No
- Parallel File System: Open Source Lustre/ beeFGS -1 No
- One-time installation, integration & download of all required software has to be done by OEM & two day training to technical staff at department to be provided for the smooth functionality of open source softwares
- Software development tools: C/C++/Fortran compilers, MPI and OpenMP
- One-time installation, integration & download of all required software has to be done by OEM & two day training to technical staff at department to be provided for the smooth functionality of open source softwares

Optional Siladitya Pal

Bidder/OEM must quote the complete HPC solutions including cooling solution for 1024 cores and power backup 20 min for following Nodes/Cores

Node/ Cores	Price (in Rs)
6 Nodes (384 cores)	
8 Nodes (512 cores)	
12 Nodes (768 cores)	
16 Nodes (1024 cores)	

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A: Training: The OEM should give 2 days' System Administration training to a group of IIT Roorkee personnel on installed hardware (Compute/storage/interconnect), operating system, installed system software and development tools including API. The training must be arranged at IIT Roorkee

B: Documentation: Documentations should be submitted for the following:

- Procedure for bringing up and shutting down the fully integrated cluster.
- Procedure for user Creation/Deletion/Modification.
- Procedure to get user accounting for Storage and Compute nodes.
- Disk, health status monitoring of Master/IO nodes and storage enclosure.
- Procedure for basic troubleshooting of Compute nodes, Storage & Head nodes (i.e the installed applications on the Head nodes).
- Step by step installation guide for the entire HPC implementation/ configuration from scratch.
- Project documentation listing hardware/software, configuration and connectivity.
- Any other document/manual useful for daily administration.

C. Terms and Conditions for eligibility:

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1. The Server OEM should have min 3-HPC installations in the Top 500 supercomputing list as per top500.org for the last 3 years.
2. The Server OEM should have min 3-HPC installations in each of the supercomputing list published by IISc in last 3 years.
3. The OEM should have documentary evidence of successful installation and maintenance of distributed memory node cluster of at least 512 cores (of CPU), in Indian Government organizations / PSU/Government educational institutes, in a single order. Supply order copy/installation certificate for an order executed in the last five years should be submitted with technical bid
4. OEM & Partner should have functional office in India from last 10 Years.
5. Servers, storage and management switches should be provided from the same OEM for better interoperability, integration, management and support
6. Bidders should have adequate experience of handling high end HPC systems, and should have executed at least 2 such orders in past. Documentary proof (order copy/installation certificate/completion certificate) to be submitted with technical bid.
7. The proposal can be submitted either by the OEM directly or through an Authorized Partner (Bidder). In case of the latter, tender specific authorization by the OEM needs to be provided ensuring maintenance support for both hardware and software during warranty and post warranty AMC.
8. Installation: To be done by OEM/OEM Authorized partner engineer only.
9. If the bidder is an authorized partner or service provider of an OEM, an OEM authorization letter must be submitted
10. Technical compliance, Detailed Cluster schematic diagram along with detailed data sheet of proposed product to be submitted, failing which bid may get rejected
11. Bidder must not be blacklisted at any Government Organization in Country.
12. The maintenance and support during warranty period should be done by OEM technical team. The response time for hardware problems during warranty period should be 24 hoursx365 days x 5years
13. High Performance Linpack (HPL) linear algebra matrix multiplication program (open source) shall be executed by the vendor to evaluate the system floating point operation per second (FLOP ratings). And the vendor has to demonstrate the HPL efficiency greater than 70%.

D. Warranty ~~and AMC~~:

- The complete HPC cluster solution should be offered with 05 years on-site comprehensive warranty on all components including supporting hardware (smart rack, UPS with batteries, cooling and monitoring solution) and software
- All equipment / components should carry an onsite advance replacement warranty for warranty ~~and AMC period~~.

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E. Installation and Support

The installation, integration, maintenance should be done by OEM engineers only, and OEM is responsible for all acts done in reference to this tender which includes; but not limited to; supply, installation, configuration, commissioning, testing & benchmarking of hardware and software both.

Prices should be quoted in INR only.

Note: 1) 10 % deviation from the main technical specification is the sole discretion of the technical committee for betterment of the equipment.

2) 100% advance payment is possible against 110% bank guarantee

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