

# INDIAN INSTITUTE OF TECHNOLOGY GOA

At Goa Engineering College Campus  
Farmagudi, Ponda, Goa 403401  
E-mail: purchase\_r.d@iitgoa.ac.in

GSTIN: 30AABAI1653D1ZF

PAN: AABAI1653D

TAN: BLRI08261B

Enquiry No: IITGOA/R&D/2020-21/004

Date: 01/01/2021

IIT Goa invites sealed quotations in two bid form for the supply of below mentioned item.

Sl. No.	Description of Item	Qty
1	HPC Cluster (Detailed specifications attached as Annexure-A)	01 Set.

## Terms & Conditions

1. Quotation must be valid for at least 90 days.
2. The GSTIN should invariably be mentioned in your offer.
3. Kindly attach a compliance certificate along with the technical quote.
4. Prices: Prices should be quoted in INR – F.O.R., IIT Goa basis only.
5. Payment terms: Within 30 days after the delivery and successful installation of item at IIT Goa.
6. The suppliers shall provide the banking details along with their quote on their letterhead duly signed and stamped.
7. The successful bidder has to submit a Performance Guarantee Bond for 3% of the Purchase Order value and valid till one year plus 60 days OR up-to warranty period whichever is later from the date of issue of Purchase Order. Performance Guarantee Bond may be submitted within 15 (Fifteen) days from the date of order acknowledgment as a successful bidder.
8. Quotations shall be submitted in two parts;  
**Part – I (Technical)** should contain all the technical details and specification of the product. It should contain unpriced bid along with terms and conditions, compliance certificates, proprietary certificates (if applicable), any other certificates/details etc. This envelope should be marked as “Technical Bid”  
**Part -II (Financial)** The financial bid of the above item should be in a sealed envelope marked as “Financial Bid” and should contain financial terms and conditions.

9. IIT Goa reserves the right to accept and/or reject any/all bids without assigning any reason in public interest.
10. For any clarification, you may kindly contact Dr. Harpreet Singh (email: harpreet@iitgoa.ac.in) and Research & Development office (purchase\_r.d@iitgoa.ac.in) till 11.01.2021.
11. All sealed quotations must be super scribed with the tender enquiry number and should reach to the Assistant Registrar (Research & Development), IIT Goa, at Goa College of Engineering Campus, Farmagudi, Ponda, Goa, 403401 by 17.00 Hrs. on or before 22.01.2021.

### **Eligibility criteria, and additional terms and conditions for participation in the bid**

1. The bidder should be an Original Equipment Manufacturer (OEM) or its Authorized Dealer/Channel Partner having a Direct Purchase and Support agreement with the OEM. In case the bidder is a Dealer, a valid Letter of Authorization from the OEM should be produced along with technical bid.
2. A Certificate/Undertaking on the letter head of the Company to the effect that the OEM/bidder had not been blacklisted anywhere in India by any organization must be enclosed with technical bid.
3. The bidder must be a legal entity in India registered under appropriate laws. Registration certificate to this effect must be produced along with technical bid.
4. The bidder/OEM must have registered/support office either in Goa, Karnataka, Maharashtra, with well-established Service Centre. Documentary evidence to this effect must be produced along with technical bid.
5. The bidder must be in existence in the HPC (High Performance Computing) business in India or outside India at least for the last five years. Documentary evidence to this effect must be produced along with technical bid.
6. The bidder must clearly mention the complete details of the model (e.g., name, number, brand, etc.), if applicable, in the quotation, without which the quotation will not be considered.
7. The bidder is required to furnish clause by clause compliance of technical specifications bringing out clearly the deviations from the specification, if any. The compliance certificate should be produced in the following format.

Sr. No. of the component given in the technical specifications	Specification of the component as per tender enquiry	Specification of the component offered	Compliance (YES/NO)	In case of non-compliance, deviation to be specified in unambiguous terms

Non-compliance with above shall be treated as incomplete/ambiguous and the bid may be ignored without giving an opportunity to the bidder for further clarification/negotiation etc. Mere copying of our specifications in the quotation shall not make the technical bid eligible for consideration. A bid should be supported with a catalogue, duly signed and stamped, of the quoted model, and the same must be sent along with the technical bid.

8. Bidder must submit an Authorization certificate from OEM for service & support. One OEM can authorize one bidder only and one bidder can represent only one OEM.

9. Bidder should be an ISO certified Company.

10. Bidder should be registered under GST Act with concerned State Sales Tax Authorities. The bidder should furnish, along with the bid document, the relevant GST Registration Document and PAN / TAN copies. Documentary evidence to this effect must be produced along with technical bid.

11. The bidder should have average annual sales turnover of Rs. 3 Crores or more during the last three financial years ending 31st March 2020. Attach firm's last 3 years' audited profit and loss account balance sheet duly audited by a Chartered Accountant (C.A.). Documentary evidence to this effect must be produced along with technical bid.

12. Bidder should provide complete documentation about rack layout, and power, cooling and electrical infrastructure required at IIT Goa along with the technical bid.

13. List of minimum three present clientele (Central Government academic/research institutions, IITs, IISERs, NITs, etc.) to whom identical/similar equipment has been supplied in the preceding three years must be produced with contact addresses and telephone numbers.

14. If any of the equipment supplied by the bidder is found to be substandard, refurbished, un-merchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipment shall be refunded by the bidder with 18% interest if the payment for such equipment has already been made. All damaged or unapproved goods shall be returned at suppliers' cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges. In case supplier fails to replace above item as per above terms and conditions, IIT Goa, may consider "Banning/Blacklisting" the supplier.

15. Non-compliance of tender terms, non-submission of required documents, lack of clarity of the specifications, contradiction between bidder specification and supporting documents etc. may lead to rejection of the bid.

16. IIT Goa has the right to accept the whole or any part of the tender or portion of the quantity offered or reject it in full without assigning any reason in public interest.

17. **Validity of bids:** Bids shall be valid for minimum 90 days from the date of submission. A bid valid for a shorter period shall stand rejected.

18. **Delivery and Transportation:** Place for supply and installation is 'Indian Institute of Technology Goa, At Goa College of Engineering Campus, Farmagudi, Ponda 403401, Goa.

19. **Delivery and Installation:** Within 4-6 weeks of getting a confirmed order.

20. **Warranty:**(a) On-site comprehensive warranty (parts + labor + support) of minimum 3 (three) years. The warranty period shall begin from the date of successful installation of the equipment at IIT Goa.

**Sd/-**

**Asst. Registrar (R&D)**

## Specification

### Item Consisting for HPC Cluster:

Sr. No	Items	Qty
1	Master Node	01
2	Compute Node	04
3	GPU Node	01
4	Network Switch with Patch cord	01
4	Cluster Management Software	01
5	42U Rack with PDU's	01

### Item1: Master Node

Quantity	01 Nos	
Master Node		
Sr. No.	Specification	Description
1.	Processor	Intel® Xeon® Processor 4210R Total number of CPUs = 2 Number of cores per CPU = 10 Number of Threads per CPU = 20 Processor Base Frequency per CPU=2.4GHz
2.	Memory	6 x 16GB GB ECC Reg. DDR4-2400 Mhz At least 12 DIMMs on motherboard
3.	SSD Drives (OS)	2 x 480GB SATA SSD (RAID 1) for HPC stack installation
4.	Hard Disk Drives (Data)	6 x 1.92TB SATA SSD (Raid 5) for Data volume
5.	HDD bays	8 Hotswap Drive bays (SAS/SATA/SSD)
6.	Expansion Slot	3 PCI-E 3.0 x16 slots, 1 PCI-E 3.0 x8 slot
7.	RAID Level support	RAID 0,1,5,6,10,50,60 level supported
8.	Network interface	2 number of 10 Gigabit ports (RJ45)
9.	Ports	2 RJ45 LAN, 1 RJ45 Dedicated IPMI LAN for Server management, 4 x USB 3.0 ports, 1 VGA
10.	Graphics	Onboard Graphics via ASPEED AST2500
11.	Operating System	Latest version of 64-bit CentOS
12.	Form Factor	1U Rackmountable
13.	Power supply	Min 750W Redundant Power Supply Platinum level
14.	Warranty	3 years Comprehensive onsite warranty

**Item 2: Compute Node (2U Enclosure consists of 4 compute nodes)**

Quantity		1 set for 4 Units
Sr. No.	Specification	Description
1.	Processor	Intel® Xeon® Processor 4214R Total number of CPUs = 2 Number of cores per CPU = 12 Number of Threads per CPU = 24 Processor Base Frequency per CPU=2.4GHz
2.	Memory	6 x 32GB GB ECC Reg. DDR4-2400 Mhz At least 8 DIMMs on motherboard.
3.	Hard Disk Drives	1 x 480GB SATA SSD
4.	HDD bays	3 HDD bays supporting SSDs per node
5.	Expansion Slot	1 PCI-E 3.0 x16 Low-profile slot
6.	RAID Level support	RAID 0,1,5 level supported
7.	Network interface	2 number of 10 Gigabit ports(RJ45)
8.	Ports	2 RJ45 LAN, 1 RJ45 Server Management Port, 2 x USB 3.0, 1 VGA port
9.	Graphics	Onboard Graphics via ASPEED AST2500
10.	Operating System	Latest version of 64-bit CentOS
11.	Form Factor	2U Rackmountable Dense form factor (0.5U; 4 Nodes in 2U chassis)
12.	Power supply	Up to 1600W Redundant Power Supplies Titanium Level
13.	Warranty	3 years Comprehensive onsite warranty

**Item 3: GPU Node**

Quantity		1
Sr. No.	Specification	Description
1.	Processor	Intel® Xeon® Processor 4210R Total number of CPUs = 2 Number of cores per CPU = 10 Number of Threads per CPU = 20 Processor Base Frequency per CPU=2.4GHz
2.	GPU	1 x Nvidia Quadro RTX 5000 (16GB)
3.	GPU Support	System Support Total 4 GPUs
4.	Memory	4 x 32GB GB ECC Reg. DDR4-2933 Mhz At least 16 DIMMs on motherboard.
5.	Hard Disk Drives	1 x 480GB SATA SSD
6.	HDD bays	8 Hot Swap HDD bays supporting SSDs
7.	Expansion Slot	6 PCI-E 3.0 x16, 1 PCI-E 3.0 x4 (in x8)
8.	RAID Level support	RAID 0,1,5 level supported
9.	Network interface	2 number of 10 Gigabit ports
10.	Ports	2 RJ45 LAN, 1 RJ45 Server Management Port, 4 x USB 3.0, 4 x USB 2.0 1 VGA port
11.	Operating System	Latest version of 64-bit CentOS
12.	Form Factor	4U Rackmountable form factor
13.	Power supply	Up to 2200W Redundant Power Supplies Titanium Level

14.	Warranty	3 years Comprehensive onsite warranty
-----	----------	---------------------------------------

**Item 4: Monitor with Keyboard and Mouse**

Sr. No.	Specification	Description
1	Monitor	15" Flat LED Monitor (Min)
2	Keyboard and Mouse	USB Keyboard and Mouse

**Switch**

8 Port 10Gigabit Eth Switch	8 port 10 Gigabit Unmanaged Ethernet Switch
Cables	Sufficient 10G patch cables (RJ45 to RJ45) to connect all the systems with switch

**Server Rack**

42U Rack	42U Standard Server Rack with sufficient PDUs
----------	---

## Cluster Management Software

Cluster Management Software	<ul style="list-style-type: none"><li>* OS: 64-bit Linux CentOS</li><li>* Job Scheduler: Job Scheduler with the following features<ul style="list-style-type: none"><li>*Job monitoring and management</li><li>* Workload cum resource manager with policy-aware, resource-aware, and topology-aware scheduling</li><li>* Reservation support</li><li>* Heterogeneous cluster support</li><li>* Multi-cluster support</li><li>* Pre-emptive and backfill scheduling support</li><li>* Application integration support</li><li>* Live reconfiguration capability</li><li>* GPU Aware scheduling</li></ul></li><li>* Libraries: OpenMPI, MVAPICH, Intel MPI, Blas 1,2,3, Lapack, Scalapac, Intel MKL, Intel DAAL</li><li>* Compilers: GNU Compilers</li><li>* Cluster manager with provisioning, monitoring, and reporting capabilities</li><li>* Support Package and Image-based provisioning</li><li>* Support Disk and diskless cluster deployment both</li><li>* Intuitive web interface to manage and customize the cluster</li><li>* Customizing networks and compute node profiles</li><li>* Customizing compute nodes to the max, up to changing kernel parameter</li><li>* Able to Push configuration changes and updates to the compute nodes without reinstalling and rebooting</li></ul>
-----------------------------	--

### **Scope of Work:**

- \* Racking And Stacking of All the nodes with Proper Cabling of All Components.
- \* BIOS \ RAID Settings as per request
- \* Installation of The Operating System, Cluster Management Software, and Required Libraries, Packages, Etc.
- \* Handover the cluster with the details, documentation, and manuals of all the systems.

**PRICE BID FORMAT****(To be printed on letterhead of the bidder)**

S.No.	Item description	Qty.	Rate	Total
A	HPC Cluster (Detailed specifications attached as Annexure-A)			
B	GST _____ % of (A) HSN Code/ SAC Code _____			
Grand Total(A+B)				

Amount in Words \_\_\_\_\_  
\_\_\_\_\_ only.

#HSN Code: "Harmonized System of Nomenclature Code No." and SAC Code: "Service Accounting Codes Code No."

1. Delivery Mode: Delivery at IIT Goa, at site only.
2. Terms of payment: 100% payment within 30 days after the successful delivery and installation of the item at IIT Goa.
3. Validity of the bid: 90 days from the date of submission of quotation/tender.

Signature.....  
Name .....  
Place: Company Name & Address: .....

Date: Affix Rubber Stamp: .....

**Note: Price Bid should be submitted in given format only. For additional information items above format may be typed and used.**

**FORMAT FOR PERFORMANCE GUARANTEE BOND**

(To be typed on Non-judicial stamp paper of the value of Indian Rupees of One Hundred) (TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT GOA OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT GOA OR ANY SCHEDULED BANK SITUATED AT GOA. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED.

To,  
The Registrar,  
Indian Institute of Technology, Goa  
Farmagudi, Ponda,  
Goa – 403401

**LETTER OF GUARANTEE**

WHEREAS Indian Institute of Technology, Goa (Buyer) have invited Tenders vide Tender No.....  
Dt. .... for purchase of .....

AND

WHEREAS the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of “**Registrar, Indian Institute of Technology, Goa**” in the form of Bank Guarantee for Rs ..... **(3% (three percent) of the purchase value)** and valid till **one year or upto warranty period whichever is later** from the date of issue of Performance Guarantee Bond may be submitted within 15 (Fifteen) days from the date of Order Acknowledgment as a successful bidder.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document / purchase order / performance of the equipment / machinery, etc. this Bank shall pay to Indian Institute of Technology, Goa on demand and without protest or demur Rs..... (Rupees.....).

This Bank further agrees that the decision of Indian Institute of Technology, Goa (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in tender document / purchase order shall be final and binding.

We, ..... (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or Indian Institute of Technology, Goa (Buyer).

**Notwithstanding anything contained herein:**

1. Our liability under this Bank Guarantee shall not exceed Rs. .... (Indian Rupees ..... only).
2. This Bank Guarantee shall be valid up to .....(date) and
3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if IIT Goa serve upon us a written claim or demand on or before ..... (date).
4. This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at ..... situated at ..... (Address of local branch).

Date:

Yours truly,  
Signature and seal of the Guarantor:  
Name of Bank:

**Instruction to Bank:** Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. Bank is requested to take appropriate necessary action on or after expiry of bond period.