

## INVITATION FOR TENDER FOR SUPPLY OF EQUIPMENT

Sealed tender offers are invited in two separate sealed covers (Technical and Commercial offers) from eligible manufacturers/suppliers or their direct Indian agents for the supply of the following equipment.

### **High Performance Computing (HPC) Cluster Solution**

Please send offers, **ALONG WITH DESCRIPTIVE CATALOGUE/ BROCHURE**. The validity of the bid should be at least four months (120 days) or more from the date of the opening of this tender. Please ensure that your quotation reaches not later than **03.10.2017 at 15:00 Hrs** at the following address:

**Dr. Krishna Kumar**  
**Professor & Head, Department of Physics,**  
**Indian Institute of Technology Kharagpur – 721 302, West Bengal, India**

Earnest money of **Rs. 50,000/-** is to be deposited in the form of Account payee Demand Draft in favour of IIT Kharagpur, payable at Kharagpur, India. Any bid, which is not accompanied with an EMD, shall be summarily rejected. Earnest money deposited will be forfeited if the tenderer withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender. No interest will be paid on the earnest money of the unsuccessful bidders.

Tender Reference	<b>IIT/PHY/COMP/17-18/3</b>
Price of Tender Document	<b>NIL</b>
Last Date and Time for submitting the tender document	<b>03.10.2017 at 15:00 Hrs (Indian Time)</b>
Time and Date of Opening of Technical Bids	<b>03.10.2017 at 16:30 Hrs (Indian Time)</b>
Place of Opening Tender	<b>Department of Physics, Institute of Technology Kharagpur – 721 302, West Bengal, India</b>
Address of Communication	<b>As stated above</b>
Contact Telephone Numbers	<b>+913222282285</b>
E-mail	<b><a href="mailto:kumar@phy.iitkgp.ernet.in">kumar@phy.iitkgp.ernet.in</a></b>

**“Any corrigendum shall be published only in Institute Website”**

## Detailed specifications of the Equipment:

### High Performance Computing (HPC) Cluster Solution as mentioned below.

#### 1. One Master Node:

**Processor:** 1 x Intel® Xeon® Processor E5-2620 v4 (20M Cache, 2.10 GHz, 8 Cores / 16 Threads, 8 GT/s Intel® QPI)

**Chipset:** Intel® C612 Chipset

**Management:** Integrated remote management controller with remote media & video redirection feature

**Memory:** 1 x 32 GB DDR4 2400 MHz registered ECC memory or higher, offered system should be scalable to 1.5 TB or higher with advanced ECC, memory scrubbing, SDDC, memory mirroring & sparing support

**Slots:** Minimum 4 PCIe 3.0 slots on motherboard without the use of riser cards or higher

**RAID Controller:** 12 Gbps RAID controller with 1 GB flash-backed cache, should minimum support RAID levels 0, 1, 5, 6.

**HDD:** 1 x 128 GB SSD, 6 x 4 TB 7.2K rpm 12 Gbps hot-plug 512e enterprise SAS HDD

**HDD Bays:** Minimum 8 nos. or higher 2.5/3.5" hot-plug HDD bays supporting SAS, SATA HDD & SSD

**Ethernet:** 2 x 10 Gbps RJ-45 ports without consuming any PCIe slots

**Ethernet Card:** 10 GbE

**Form Factor:** 1U Rack form factor with rail kit for 19" rack mount

**Optical Drive:** Internal front-accessible 8x DVD RW drive

**Power supply:** 2 x 450W or higher hot-plug redundant power supply

**Ports:** Minimum 5 x USB 2.0 external ports

**Operating systems:** Compatible with Microsoft® Windows Server® 2016, Red Hat® Enterprise Linux®, Latest version CentOS, VMware vSphere® ESXi™. OS must be installed for clustering the compute nodes to submit any batch jobs or serial jobs in parallel platform.

**Compliance:** CE, FCC, RoHS

**Console:** Server OEM 24" or higher IPS LED monitor, keyboard and mouse with adequate cables to connect all the components

**Warranty:** 5 years server OEM NBD ONSITE warranty

#### 2. Compute Node:

**Processor:** 4 x Intel® Xeon® Processor E7-8870 v4 (50M Cache, 2.10 GHz, 20 Cores / 40 Threads, 9.6 GT/s Intel® QPI)

**Chipset:** Intel® C602J Chipset

**Management:** Integrated remote management controller with remote media & video redirection feature

**Memory:** 12 x 32 GB DDR4 2400 MHz registered ECC memory or higher, offered system should be scalable to 6 TB or higher with advanced ECC, memory scrubbing, SDDC, DDDC, memory mirroring & sparing support

**Slots:** Minimum 10 PCIe 3.0 slots on motherboard without the use of riser cards or higher

**RAID Controller:** 12 Gbps RAID controller with 4 GB flash-backed cache, should support RAID levels 0, 1, 5, 6, or higher

**HDD:** 4 x 1.8 TB 10K rpm 12 Gbps hot-plug 512e enterprise SAS HDD

**HDD Bays:** Minimum 12 nos. or higher 2.5/3.5" hot-plug HDD bays supporting SAS, SATA HDD & SSD

**Ethernet:** 2 x 10 Gbps RJ-45 ports without consuming any PCIe slots

**Ethernet Card:** 10 GbE

**Form Factor:** 4U Rack form factor with rail kit for 19" rack mount

**Optical Drive:** Internal front-accessible 8x DVD RW drive

**Power supply:** 4 x 1100W or higher hot-plug redundant power supply

**Ports:** Minimum 5 x USB 2.0 external ports

**Operating systems:** Compatible with Microsoft® Windows Server® 2016, latest version CentOS, Red Hat® Enterprise Linux®, VMware vSphere® ESXi™. OS must be installed for parallel computing.

**Compliance:** CE, FCC, RoHS

**Warranty:** 5 years server OEM NBD ONSITE warranty

**3. Software:** Compilers and libraries:

- Intel® parallel studio XE 2017 (Cluster edition) (deliver with Linux C, C++, Fortran and Python) for master CPU with perpetual license and support included. (**Single user for one year**)
- All Standard Libraries with minimum options of BLAS, LAPACK, SCALAPCK, ATLAS.
- **MPI implementation including mpiifort**
- **Open source cluster software**

**4. UPS and Power:** The vendor should mention clearly the UPS/Power requirement for the whole cluster with a backup of 1 hour on full load

**Extra Features:** The vendor must install the cluster with existing compute node (same specification as mentioned here) inside an existing rack with the above software as specified. Also, they demonstrate the functionality of the software. Any other accessories (hardware or software) that may be required for the installation must be supplied by the vendor with free of cost.

### ***Bidders and OEM Qualifying Criteria:***

1. The bidders/OEM must have supplied 3 HPC orders of 500 cores Cluster and maintaining at Academic environment in the Country. Need to attach PO copies.
2. Proposed OEM Hardware should have at least 10 entry in top 500 org in the latest June 2013 release
3. OEM proposed by bidders should have Sales and support office in Country for the last 10 years and have support office in Kolkata.
4. Multiple bidders of same OEM are acceptable. Bidder should be OEM/Authorized Partner /service provider of the OEM and a Letter of Authorization from OEM on the same and specific to the tender should be enclosed.
5. The warranty provided by the bidder should have a back to back arrangement with the OEM. The declaration should be the part of a Letter of Authorization and signed by competent authority at the OEM.

### **Other terms and conditions:**

- a) The vendor should provide complete turnkey solution.
- b) The vendor shall be responsible for operation and comprehensive maintenance of HPC for warranty period from date of start of operation and shall provide an undertaking for the same at the time of submitting the tender.
- c) All equipment / components should carry an onsite replacement warranty of above period. The warranty should be lined up back to back from OEM.
- d) Certified and trained engineers should do the installation. CV of at least one such engineer should be submitted along with the tender who would do the installation.
- e) The users and faculty to be provided with adequate information and working knowledge of basic HPC setup viz. job firing, cluster setup etc.
- f) The vendor shall do installation and integration of all supplied hardware and software. **The vendor shall install and configure all required hardware and software suites, including racking and stacking, cluster networking, configuring all nodes, execution and submission of jobs, installation of compilers and applications, configuration of environment variables and license utility configuration.** The supplied hardware should have comprehensive warranty including upgrades of BIOS, firmware, patches, etc. The support includes all patches, bug fixes and upgrades. The vendor must familiarize users about the setup of the system. The vendor shall inform about the total power and cooling requirements (KVA, current rating, socket type, BTU rating, AC tonnage, etc.) for the offered solution at the time of quote. The various sub-system wise and rack-wise power and heat dissipation requirements must also be given. **The above installation should be free of cost at IIT Kharagpur.**
- g) Software and optional hardware items which will be supplied free and which will be charged for should be indicated separately. Restrictions on software usage, if any, should also be indicated. Complete technical information of the HPC solution (hardware, software, network, etc) must be provided for each item separately to ensure that the equipment offered is in conformity with the specifications.

- h)** At the time of installation, if it is found that some additional hardware or software items are required to meet the operational requirement of the configuration, but not included in the vendor's original list of deliverables, the vendor shall supply such items to ensure the completeness of the configuration at no extra cost.
- i)** Any item not specifically mentioned in the specs but is required for successful implementation of the HPC solution (in the opinion of the vendor) must be brought out and quoted accordingly
- j)** The Purchaser reserves the right at the time of purchase order to increase or decrease the quantity of goods and services originally specified in technical specifications without any change in unit price or other terms and conditions. Further, at the discretion of the purchaser, the quantities in the purchase order may be enhanced by 40% within the delivery period.
- k)** The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of purchase order, without thereby incurring any liability to the affected Bidder or Bidders.
- l)** The Institute shall be under no obligation to accept the lowest or any other tender received in response to this tender notice and shall be entitled to reject any tender without assigning any reason whatsoever.
- m)** Quote unit price for all the items mentioned in the Chapter Technical Specification (A to K) in addition to quote for unit cables (both Ethernet and Infiniband). In the event more nodes are ordered subsequent software's, operating systems cables needed can be ordered accordingly.
- n) **Compliance List:**** The vendor must submit a technical brochure and proper application notes adequately explaining and confirming the availability of the features in the components quoted. The vendor must also 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. Additional features in the quoted items which are better than those in the indent – may be highlighted
- o) **Post-sell service:**** The vendor must submit the names of the service engineers employed by them who are competent to service the HPC installation along with their contact details in India.

## GENERAL TERMS & CONDITIONS

PLEASE SPECIFICALLY INDICATE THE FOLLOWING POINTS IN YOUR QUOTATIONS AND COMPLY THE TERMS AS MENTIONED HEREUNDER:-

1. TENDERS ARE INVITED COMPLYING THE REQUIREMENT FOR TENDER AS DETAILED IN THE TENDER SPECIFICATION TO BE SUBMITTED IN THE COMPANY'S / FIRM'S LETTERHEAD NEATLY PRINTED / TYPED DULY SIGNED BY AUTHORIZED PERSON WITH THE SEAL OF THE BIDDERS. ALL ENVELOPS CONTAINING THE TENDER SHOULD BE PROPERLY SEALED. SEPARATE ENVELOPS SHOULD BE USED FOR TECHNICAL AND PRICE BID AND INDICATION TO THEIR EFFECT MAY PLEASE BE SUPERSCRIBED ON THE ENVELOP.

### **THE FOLLOWING DOCUMENTS ARE REQUIRED FROM THE INDIAN AGENTS OF FOREIGN FIRMS:**

1.1 FOREIGN PRINCIPAL'S PROFORMA INVOICE INDICATING THE COMMISSION PAYABLE TO THE INDIAN AGENT AND NATURE OF AFTER SALES SERVICE TO BE RENDERED BY THE INDIAN AGENT.

1.2 COPY OF THE AGENCY AGREEMENT WITH THE FOREIGN PRINCIPAL INDICATING THE NATURE OF AFTER SALES SERVICES, PRECISE RELATIONSHIP BETWEEN THEM AND THEIR MUTUAL INTEREST IN THE BUSINESS.

1.3 PLEASE ENCLOSE THE DOCUMENT(S) RELATED TO THE ENLISTMENT OF THE INDIAN AGENT WITH DIRECTOR GENERAL OF SUPPLIES & DISPOSALS (DGS & R) UNDER THE COMPULSORY REGISTRATION SCHEME OF MINISTRY OF FINANCE.

2. TECHNICAL CATALOGUE/LEAFLET SHOULD BE ENCLOSED WITHOUT FAIL. PROVIDE COMPLIANCE STATEMENT WITH RESPECT TO THE TECHNICAL SPECIFICATIONS MENTIONED ABOVE.
3. PLEASE CONFIRM WHETHER YOU ARE AUTHORISED TO QUOTE ON BEHALF OF YOUR PRINCIPALS AND IF SO, PLEASE ENCLOSE A COPY OF SUCH AUTHORISATION WITH YOUR QUOTATION.
4. **PRICE BIDS FOR FOREIGN FIRMS:** PRICES ARE TO BE QUOTED ON 'EX-WORKS' DULY PACKED OR ON "FCA/FOB" INTERNATIONAL PORT" BASIS AND ALSO INCLUDING AGENCY COMMISSION PAYABLE TO YOUR INDIAN AGENTS, IF ANY SHOWING CLEARLY THE FOLLOWING BREAK UP:-

I) EX-WORKS PRICE : in INR only

II) PACKING & FORWARDING: in INR only

III) FREIGHT : in INR only

IV) ANY OTHER RELEVANT EXPENSES.: in INR only

V) TAXES PAYABLE BY THE INSTITUTE: in INR only

INSURANCE WILL BE PAID BY OUR INSTITUTE SEPARATELY AND SHOULD NOT FORM PART OF THE QUOTED PRICE.

**PRICE BIDS FOR INDIAN FIRMS:** PRICES ARE TO BE QUOTED ON F.O.R., IIT KHARAGPUR, ON DOOR DELIVERY BASIS CLEARLY SHOWING THE BREAK UP OF TAXES. **ALL PRICES SHOULD BE QUOTED ONLY IN INDIAN RUPEES.**

5. **PERIOD OF VALIDITY:** BIDS SHALL REMAIN VALID FOR ACCEPTANCE FOR A PERIOD OF 120 DAYS FROM THE DATE OF OPENING.
6. INDIAN AGENTS ADDRESS AND PERCENTAGE OF AGENCY COMMISSION INCLUDED IN ABOVE F.O.B./EX-WORKS PRICE. (THIS WILL BE PAID TO THE INDIAN AGENTS IN INDIAN RUPEES ONLY AND NOT IN FE). PLEASE ENCLOSE COPY OF AGENCY AGREEMENT ENTERED INTO WITH YOUR PRINCIPALS INDICATING THE NATURE OF AFTER SALES SERVICES OF INDIAN AGENTS, PRECISE RELATIONSHIP & MUTUAL INTEREST IN THE BUSINESS.
7. **MEASUREMENTS/WEIGHT:** NETT/GROSS OF THE CONSIGNMENT. IN CASE OF AN ORDER, YOU SHALL USE AIR WORTHY PACKAGE (AS APPLICABLE) DULY CERTIFIED WITH DOCUMENTS – PLYTO – SANITARY CERTIFICATE (AS PER QUARANTINE ORDER 2003).
8. **SCOPE OF SUPPLY:** SHOULD INCLUDE FREE INSTALLATION AND COMMISSIONING
9. **PAYMENT TERMS FOR FOREIGN FIRMS**
  - A) 100% PAYMENT THROUGH SIGHTDRAFT/FORIGN DEMAND DRAFT/LC (EXCEPTIONAL CASES)/SWIFT TELE TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER AND CONDITION.
  - B) BANK CHARGES ON LC/SD (WITHIN INDIA APPLICANT ACCOUNT AND OUTSIDE INDIA TO BENEFICIARY ACCOUNT).
- PAYMENT TERMS FOR INDIAN FIRMS**
  - A) 100% PAYMENT THROUGH CROSSED ACCOUNT PAYEE CHEQUE / ELECTRONIC TRANSFER AFTER RECEIPT OF STORE IN GOOD ORDER AND CONDITION.
  - B) ENSURE MENTIONING
    - i) BANK DETAILS OF THE BENEFICIARY, VAT NO., SERVICE TAX NO. AND PAN NUMBER
    - ii) FULL NAME AND ADDRESS OF THE BENEFICIARY ON WHOM ORDER HAS TO BE PLACED
10. WHETHER ANY EXPORT LICENCE IS REQUIRED FROM YOUR GOVERNMENT, IF SO, PLEASE CONFIRM WITH DETAILS.
11. COUNTRY OF ORIGIN OF THE GOODS IS TO BE MENTIONED.
12. THE INSTITUTE SHALL PROVIDE THE CONCESSIONAL CUSTOMS DUTY AND EXCISE DUTY EXEMPTION CERTIFICATE AS PER GOVT. NOTIFICATION NO. 51/96 CUSTOMS DATED: 23.07.1996 AND CENTRAL EXCISE DUTY EXEMPTION IN TERMS OF GOVT. NOTIFICATION NO. 10/97 – CENTRAL EXCISE DATED: 01.03.1997 AS AMENDED FROM TIME TO TIME.
13. **LIQUIDATED DAMAGES:** THE STORES SHOULD BE DELIVERED / DISPATCHED TO DESTINATION AND READY FOR OPERATION NOT LATER THAN THE DELIVERY DATE SPECIFIED. IF THE SUPPLIER FAILS TO DELIVER ANY OR ALL THE STORES OR PERFORM THE SERVICE BY THE SPECIFIED DATE, LIQUIDATED DAMAGES AT 1% PER MONTH OR PART THEREOF IN RESPECT OF THE VALUE OF STORES WILL BE DEDUCTED FROM THE CONTRACT PRICE SUBJECT TO A MAXIMUM OF 5%.

ALTERNATIVELY, THE ORDER WILL BE CANCELLED AND THE UNDELIVERED STORES PURCHASED FROM ELSEWHERE AT THE RISK AND EXPENSE OF SUPPLIER.

14. **PATENT RIGHTS:** THE SUPPLIER SHALL INDEMNIFY THE PURCHASE AGAINST ALL THIRD PARTY CLAIMS OF INFRINGEMENT OF PATENT, TRADEMARK OR INDUSTRIAL DESIGN RIGHTS ARISING FROM USE OF THE GOODS OR ANY PART THEREOF IN INDIA.
15. ONLY THOSE BIDDERS WHO'S BIDS HAVE BEEN TECHNICALLY FOUND ACCEPTABLE WILL ONLY BE INVITED FOR PARTICIPATION IN THE PRICE BID.
16. THOSE BIDDERS WHO DO NOT RECEIVE ANY COMMUNICATION FOR PARTICIPATION IN PRICE BID OPENING MEETING MAY PRESUME THAT THEIR BID HAS NOT BEEN ACCEPTED BY THE INSTITUTE.
17. CONDITIONAL OFFER WILL NOT BE ACCEPTED.
18. LATE TENDERS I.E. TENDER RECEIVED AFTER THE DUE DATE AND TIME OF SUBMISSION AS MENTIONED ABOVE SHALL NOT BE ACCEPTED.
19. BIDDERS TO ENCLOSE THE FOLLOWING DOCUMENTS:-
  - A) CURRENT INCOME TAX AND SALES TAX CLEARANCE CERTIFICATES (VAT No.), SERVICE TAX NO. AND PAN NO.
  - C) BANKER'S SOLVENCY CERTIFICATE
  - C) SUMMARY OF AUDITED STATEMENT OF ACCOUNTS FOR THE LAST THREE YEARS TO BE ENCLOSED AND FINANCIAL HIGHLIGHTS AND THE KEY PERFORMANCE DURING THE LAST THREE QUARTERS TO BE ENCLOSED AS PER FORMAT:-

COMPANY'S KEY PERFORMANCE

DESCRIPTION	JAN. TO MARCH	APRIL TO JUNE	JULY TO SEPT.
GROSS REVENUE			
PROFIT BEFORE TAX			
PROFIT AFTER TAX			
RETURN ON INVESTED			
CAPITAL (ROIC)			

D) CUSTOMER SATISFACTION CERTIFICATE FROM ONE SUCH ORGANIZATION IS TO BE ATTACHED WITH THE TECHNICAL BID AND PRICE BID.

E) NAME AND ADDRESS OF MINIMUM THREE CLIENTS TO WHOM SUCH EQUIPMENT HAVE BEEN SUPPLIED SHOULD BE MENTIONED.

20. **WARRANTY / GUARANTEE:** THIS COMPREHENSIVE WARRANTY / GUARANTEE SHALL REMAIN VALID FOR 60 MONTHS AFTER THE GOODS (OR ANY PORTION THEREOF AS THE CASE MAY BE) HAVE BEEN DELIVERED AND COMMISSIONED TO THE FINAL DESTINATION.
21. THE INSTITUTE DOES NOT BIND ITSELF TO OFFER ANY EXPLANATION TO THOSE BIDDERS WHO'S TECHNICAL BID HAS NOT BEEN FOUND ACCEPTABLE BY THE EVALUATION COMMITTEE OF THE INSTITUTE.
22. ALL TENDERS (UNLESS OTHERWISE SPECIFIED) ARE TO BE SUBMITTED / HANDED OVER TO **HEAD, DEPARTMENT OF PHYSICS, INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR - 721 302** AND ACKNOWLEDGEMENT TO BE OBTAINED.

## **IMPORTANT**

1. IIT Kharagpur authority may accept or reject any or all the bids in part or in full without assigning any reason and does not bind itself to accept the lowest bid. The Institute at its discretion may change the quantity / upgrade the criteria / drop any item or part thereof at any time before placing the Purchase Order.
2. Promptly make arrangements for repair and / or replacement of any damaged item (s) irrespective of settlement of claim.
3. In case of any dispute, the decision of the Institute authority shall be final and binding on the bidders.
4. For any query pertaining to this bid document correspondence may be addressed to Head, Department of Physics at the address mentioned above.

### **LAST DATE FOR SUBMISSION OF SEALED BIDS: 03.10.2017 at 15:00 Hrs**

- 1) Please Note that the Institute remains closed during Saturdays & Sundays and all specified government holidays.
  - 2) Fax, e-mail Tender will not be accepted.
  - 3) The General Terms and Conditions as stated above relate to supply of stores / equipment /assets etc. and for specific service other terms and conditions of the Institute will apply.
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**Uploading Tenders (e-Publishing) on the Central Public Procurement Portal (CPPP)**

<b>Name of Work/Item of Procurement</b>	<b>High Performance Computer (HPC) Servers</b>
<b>No. of Covers</b>	<b>NA</b>
<b>Bid Validity in Days</b>	<b>120 days</b>
<b>Bid Opening Place</b>	<b>Department of Physics, IIT Kharagpur</b>
<b>Bid Submission Closing Date</b>	<b>03-10-2017 at 15:00 Hrs</b>
<b>Bid Opening Date</b>	<b>03-10-2017 at 16:30 Hrs</b>
<b>Tender Submission Fee (if any)</b>	<b>NIL</b>
<b>Estimated Tender Value (if any)</b>	<b>NA</b>
<b>EMD (if any)</b>	<b>Rs. 50,000/-</b>