

Tender Enquiry No IITD/SCFBio/Augment/01

Indian Institute of Technology Delhi
Hauz Khas, New Delhi - 110 016

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Due Date:21 Jan, 2009

**Subject: Augmentation of Clusters/Servers at Supercomputing Facility for
Bioinformatics & Computational Biology, IIT Delhi**

1. Background:

Supercomputing Facility for Bioinformatics & Computational Biology (SCFBio) IIT Delhi intends to augment clusters/servers which includes an addition **at least 35 Nos. of Intel based nodes or 40 Nos of AMD based nodes** (Technical Specification is mentioned below) of compute capacity to the existing setup. This setup also includes a 12 Tera Byte of storage array directly attached to the master node.

Sealed tenders (technical & commercial are to be provided separately) are, therefore invited from reputed vendors for the aforesaid purpose as per the details given in the technical specifications. These details are available on the IIT Delhi website www.iitd.ac.in and SCFBio's web site: www.scfbio-iitd.res.in

2. Eligibility Criteria of Bidders:

- i) Bidder should preferably be either an **Original Equipment Manufacturer (OEM)** or should be **Authorized System Integrator Partner** having Direct Purchase and Support Agreement with the OEM. In case the tenderer is a System Integration Partner of the Principal Manufacturer, a Certificate from the Principal Manufacturer clearly stating the relationship with the Partner and authorization to the Partner to quote for this Specific tender Enquiry is to be furnished.
- ii) All **Components** offered in the Bill of Material should be covered under OEM support enabling program so that to get back end support / benefits from Principles / OEM in terms of Free Software Update Support / Maintenance releases, if any, to particular Software Version, Access to 24 x 7 x 365 online support from Technical Assistance Center of OEM for resolution of problems with the help of Online tools and technical database for on-line resolution, advance defective part replacement during warranty period (3 years) within a period of two working days and OEM Login Access. The undertaking from the OEM for the same should be enclosed with the technical bid.
- iii) a). Bidder should have supplied and installed similar type of equipment mentioned in the Technical specification in the last 24 months
b) At least one similar completed work costing not less than the amount equal to 80% of the estimated cost.
c). At least two similar completed works costing not less than the amount equal to 50% of the estimated cost, **or**

- d) At least three similar completed works costing not less than the amount equal to 40% of the estimated cost,
- e) Copies of work orders for clusters of x86-based nodes with Infiniband interconnect for MPI applications successfully executed during last three years, out of which at least one order should be of value not less than 80% of estimated cost
- f) Financial standing through latest ITCC, Annual Report (balance sheet and Profit and Loss Account) of last 3 years

3. Obtaining Bid Documents:

- i) The bid documents can be downloaded from IIT Delhi website www.iitd.ac.in or SCFBio website www.scfbio-iitd.res.in.
- ii) The bidder for this solution must deposit a non-refundable fee of Rs.1000/- in the form of Demand Draft of any scheduled bank payable at New Delhi in favor of "Registrar IIT Delhi" by **21 Jan 2009**.

4. Submission of Proposals:

- i) The bidder shall go through the entire document and must comply with all the terms and conditions. A Compliance statement in the form of 'Complied' or 'Not Complied' shall be given against each item and specification of the tender documents. The compliance statements should be supported by authentic documentation. **Please note that any deviation from the laid down requirements/specifications shall be duly signed and stamped by the bidder.** Failing to comply with this requirement may result in the bid being rejected.
- ii) The proposals shall be submitted in two parts and should be super-scribed as "**PART-I: COVER FOR TECHNICAL BIDS**" and "**PART-II: COVER FOR COMMERCIAL BIDS**".
- iii) **Part-I** shall be a Technical Offer with full details including description of Hardware / equipments so as to enable technical assessment of the proposal. This shall also include Earnest Deposit Money as per **Para 5**.
- iv) **The Technical bid** must be submitted in an organized and structured manner. No brochures/leaflets etc. should be submitted in loose form. The Technical Offer should consist of the following:
 - a. A letter of authority duly signed by an authorized signatory.
 - b. Complete Technical Specification along with Make, Model, Manufacturer and Part Number.
 - c. Technical Documentation [Product brochures, leaflets, manuals etc.]
 - d. Delivery and implementation schedule.
 - e. Compliance of terms with any deviation clearly indicated in remarks.
 - f. Warranty and AMC (Comprehensive Annual Maintenance) details.
 - g. **Do not fill any column related to commercials.**

- v) **Part – II** should contain **The Commercial Bids** for the entire proposal. The rates should be quoted in Indian Rupees / USD. All prices shall be fixed and shall not be subject to escalation of any description. Also following details should be provided:
- a. A letter of authority duly signed by an authorized signatory.
 - b. All costs should be given in Figures and Words.
 - c. Govt. Levies like Sales Tax, Octroi, Excise Duty, Work Contact Tax (WCT) and Education cess etc., if any, shall be paid at actual rates applicable on the date of delivery. Rates should be quoted accordingly giving the basic price, duties and taxes etc., if any.
 - d. Include information as to Technical offer.
 - e. Itemizes prices for each equipment, cabling, and installation, and total cost.(Prices should be quoted as CIF New Delhi, for items to be imported, inclusive of sales tax / Vat if suppliers are local.
 - f. Terms of Payment.
 - g. Period of validity of Bid.
- vi) **Both the covers should be first sealed separately** and then both the cover should be kept in **a single sealed bigger cover**. This envelope should be duly signed by an authorized signatory and should bear the inscription as given in tender notice.
- vii) **Bids Acceptance:** The bid must reach

**Supercomputing Facility for Bioinformatics & Computational Biology, 3rd
Floor (above Sip n Bite), Synergy Building, IIT Delhi, Hauz Khas, New
Delhi -110016, Phone +91-11-26596786**

on or before **21 Jan 2009 at 3pm**. Bids received after the due date and time are shall be rejected. In the event of due date being a closed holiday or declared holiday for Central Government offices, the due date for submission of the bid will be the following working day at the appointed time and venue.

- viii) **Validity of bids:** Bids should be valid for a minimum period of 60 days after the due date.

5. Earnest Money Deposit:

- i) Each bid for this augmentation must be accompanied by Earnest Money Deposit of 2.5 % (Two and a half percent) of the quoted price in the form the form of Demand Draft/Pay Order/Bank Guarantee of any Indian Nationalized Bank taken in the name of 'Registrar, IIT Delhi'. Bank Guarantee should be valid for a minimum period of 60 days from due date of the quotation. **Quotations received without Earnest Money Deposit shall be rejected. It should be a part of Technical Bid.**
- ii) Earnest Money shall be forfeited and bid is liable to be rejected, if the bidder withdraws or amends or impairs or derogates from the tender in any respect within the period of validity of the tender.
- iii) The Earnest Money of unsuccessful bidder shall be returned within one week of finalization of purchases.
- iv) The earnest money shall be liable to be forfeited upon non supply of order.
- v) No interest will be payable by IIT Delhi on the Earnest Money Deposit returned to the unsuccessful bidder.

6. Rejection of Bids:

- i) IIT Delhi reserves the right to accept or reject any bid or cancel the tender proceedings without assigning any reason whatsoever.
- ii) If a bidder gives wrong information in their bid, IIT Delhi reserves the right to reject such bid at any stage and forfeit the Earnest Money Deposit / Performance Guarantee / Security Deposit and cancel the contract, if awarded.
- iii) Incomplete quotations are liable to be rejected.
- iv) **If the technical offer contains any price information the offer will be summarily rejected.**
- v) Canvassing in any form in connection with the tenders is strictly prohibited and the bids submitted by the bidders who resort to canvassing are liable for rejection.
- vi) IIT Delhi may not pay any costs incurred towards preparation and submission of the bid of any other expenditure in this regard.
- vii) Unsigned tenders, unattested corrections and over writing by bidders are also liable for rejection.

7. Evaluation Process:

For the bidders satisfying the Qualifying Criteria and Technical Specifications, the price comparison shall be made over the total cost of the project with three years of comprehensive warranty. The lowest price in terms of cost to performance ratio will be selected.

8. Payment Terms:

Payment for this augmentation shall be made in INR/USD with all taxes and levies except custom duty and excise duty since the Institute is exempt from CD & ED. Vendor must indicate their preferred mode of payments in the price bid.

9. Clarifications:

In case the bidder requires any clarification regarding the tender documents, they are advised to submit their question in writing to SCFBio, 3rd Floor, Synergy Building, IIT Delhi.

10. Quantity Variations:

The proposed solution is subject to change depending on requirement.

11. Inspection:

IIT Delhi shall have the right to inspect or to test the items after delivery to confirm their conformity to the required specifications. The supplier shall provide all reasonable facilities and assistance to the inspector at no charge to IIT Delhi. In case any inspection of tested service fail to conform the specifications, IIT Delhi may reject them and supplier shall make all alterations necessary to meet specification required free of cost to IIT Delhi.

12. Performance Bank Guaranty: A Bank guaranty of 5% of the total amount should be given by the vendor on whom the order is placed. It should be for a period of two months beyond the date of completion of performance obligations under the contract. The amount and the validity period are to be specified in the bidding documents itself.

13. Warranty:

- i) **Three Years comprehensive warranty** should be given by the vendor. Warranty shall include free maintenance of the whole equipment supplied including free replacement of part. The defects, if any shall be attended to on immediate basis but in no case any defect should prolong for more than 24 hours. Free Software Update Support. No separate payment shall be made for the maintenance of equipment / hardware and software during the warranty period.

14. Supply and Installation:

- i) This is a time bound and high priority project. It must be understood that the bidder has made the proposal after fully considering all such factors, which may have any bearing on the time schedule. The bidder will be required to supply, install and enable services at all the locations **within 6 weeks** from the date of placement of work order in the order of priority as will be decided by IIT Delhi.
- ii) The bidder will have to arrange for all the testing equipment & tools required for installation, testing & maintenance etc. at his own cost.
- iii) IIT Delhi will have the right to reject the component /equipments supplied, if it does not comply with the specifications at any point of installation/inspections.

15. Liquidated Damages:

If the supplier fails to deliver any or all of the goods or complete the installation within the period specified in the purchase order, IIT Delhi shall without prejudice to its other remedies, deduct as liquidated damage **0.5 percent** of the price of the delayed goods for every week or part thereof while making the initial payment itself.

16. Force Majeure:

If there is a delay in performance of schedules of contract due to event of Force Majeure, IIT Delhi may deal with the case differently.

17. Arbitration and Laws:

Except where otherwise provided for in the contract, all questions and disputes relating to interpretation and application of the provisions of the contract shall be settled mutually within thirty (30 only) days (or such longer period as may be mutually agreed upon) for the date that either party notifies in writing that such dispute or disagreement exists, under the Rules of India Arbitration and Conciliation Act, 1996. The venue of Arbitration shall be New Delhi, India. The arbitration resolution shall be final and binding upon the parties and judgment may be entered thereon, upon the application of either party, by any court having jurisdiction. The Indian laws shall govern this contract.

**Technical Specification for the Proposed
Augmentation of Servers for SCFBio, IITD**

Technical Specification for the Proposed Augmentation

I) Existing Setup at SCFBio (fig 1)

32 Sun Fire 280R Server Dual Ultra Sparc III Processors connected over a Gigabit switch and has storage (SAN) of 4TB. A tape drive is also connected for backup as shown in the diagram. The current setup has SUN GRID ENGINE for queuing and scheduling jobs.

Also there are 26 dual socket dual core X2200 amd cluster with a total of around 600 GFlops of Compute capacity.

Augmentation of Clusters/Servers at SCFBio

Specifications for High Performance Cluster

Configuration for Master/Head Node

- Dual Socket Enhanced Quad Core (8 core per node) of AMD 2380 or above CPUs @ at least 2.5 GHz or Intel 5460 or above CPUs @ at least 3.16 GHz
- 2 U Form Factor
- 32 GB ECC DDR-2 667 MHz ECC RAM upgradeable to 64 GB
- At least 2.2 TB total internal Hot Swap SAS Disk (at least 10k rpm) with RAID controller supporting RAID levels 0,1,5,6 controller
- Dual Redundant Hot Swappable Power Supplies
- DVD/RW Drive
- At least 6 PCI-E slots out of which one must be 16 lane
- 1 serial port, 6 USB ports
- Integrated Lights out Management (CLI (in-band and out-of-band), IPMI 2.0 (in-band and out-of band), SNMP (out-of-band only)
- 4 x Gigabit Ethernet ports and 1 Dedicated 10/100 Base-T Management port
- Tool less Slide Rail kit
- Power Consumption and BTU/Hr rating to be provided for full configuration

Direct Attached Storage Array on Master Node as per following specifications:

- At least 4 x 3 Gb/s SAS Host Interfaces
- 2 U form factor
- Should support Hardware RAID levels 0, 1, 10, 1E, 5, 6, 50, 5EE, 60
- Should be configured with total 12 TB raw storage using not higher than 1 TB SATA-II drives
- Should be capable of supporting at least 32 TB raw Storage using not higher than 1 TB SATA-II disks
- Dual hot-swappable, redundant, and load-sharing power supplies
- Hot-swappable and redundant cooling fans

Addition of Compute Nodes as per specifications below: (at least 35 Nos)

- Dual Socket Enhanced Quad Core AMD 2376 or above CPUs @ at least 2.3 GHz or Intel 5472 CPUs or above @ at least 3.0 GHz
- 1 U Form Factor
- 8 GB ECC RAM upgradeable to 32 GB (667 MHz/800 MHz)
- 1 x 250 GB Hot Plug SATA-II Disks
- DVD ROM
- Dedicated High Efficiency Power Supply
- At least 1 PCI Express x 8 slots
- 1 serial port, 6 USB ports
- At least 2 Gigabit Ethernet ports and a dedicated management port.
- IPMI 2.0 compliant Service Processor with embedded Lights Out management offering Remote power + KVM (keyboard + video + mouse) and media capability
- Racking kit
- Power Consumption and BTU/Hr rating to be provided for full configuration.

Interface (Switch, Cards) for communication between nodes

- 35 Nos of Infiniband Card with Two 4X InfiniBand copper ports (Each 4X port should support 20 Gb/s on DDR).
- Card should be memory free.
- Card should be IBTA v1.1 compatible design with network protocol support for IpoIB (IP over IB) and uDAPL.
- Card should support x8 PCI Express Bus Specification 1.1, full-duplex point-to-point links running at 2.5 Gb/s per lane

A single switch (DDR Switch)of 36 ports or more (Flextronics, Voltaire, Mellanox, Q-Logic) with 36 or more IB cables (depending on the no of ports on the switch).

Single port Infiniband card should also be quoted.

Scope of Work:

<ul style="list-style-type: none">• Master and Compute Node Installation
<ul style="list-style-type: none">• ROCKS Cluster Toolkit Implementation
<ul style="list-style-type: none">• Compiler/Library configuration and tuning for better performance.
<ul style="list-style-type: none">• Racking and Stacking
<ul style="list-style-type: none">• Networking

- The Vendor should certify that both serial and parallel versions of Bioinformatics related software and applications can be run on the cluster
- Prepare Cluster for loading of Open Source Bio-Informatics software (public domain) using Open Source Linux/Unix

- Pre-install, if any, packages, libraries and software that are needed by the bioinformatics applications (for running the parallel MPI codes)

The entire installation must be done by the vendor with following responsibilities

- a) The entire set-up should be ready with middleware for parallel job submission, queuing system, job monitoring.
- b) System should be compliant with latest technology in low heat dissipation.
- c) All peripherals (connecting wires, ties, network cables, etc) required for the setup should be provided by the vendor.
- d) All the components under the procurement should come with comprehensive on-site warranty for a minimum of 3 years.
- e) All the compilers and libraries (like C, C++, Fortran, etc) along with the licenses required to run the job in the parallel environment on the proposed machine/architecture should be provided by the vendor.
- f) The performance should be certified on High Performance Linpack Parallel Benchmark.
- g) Remote 8x5 Support to be quoted as an option**

Training:

Training should be given during installation to at least two persons from the Supercomputing Facility for doing System management/administration jobs.

Check List

Please verify the following documents before submission of the tender, to avoid rejection or disqualification of your tender.

- 1) non-refundable fee of Rs.1000/- in the form of Demand Draft of any scheduled bank payable at New Delhi
- 2) Separate Sealed Envelopes containing the Technical and Commercial Bid. Technical bid should not contain any price information.
- 3) Earnest Money Deposit of 2.5 % (two and a half percent) of the quoted price in the form of Demand Draft/Pay Order/Bank Guarantee of any Indian Nationalized Bank
- 4) Price Schedule with terms and conditions
- 5) Statement on Compliance of the Technical Specifications with deviations, if any
- 6) Three Years Comprehensive Warranty on the Products along with AMC.
- 7) Copies of work orders for clusters of x86-based nodes with Gigabit interconnect for MPI applications successfully executed during last three years
- 8) Income tax clearance certificate issued by the concerned IT circle for the past three years with the seal of the tenderer.
- 9) For the Commercial bid a letter of authority duly signed by an authorized signatory should be attached.
- 10) Delivery and implementation schedule
- 11) The tender document should be submitted on or before the due date.

Amendments to tender Enquiry No IITD/SCFBio/Augments/01 (Tender ID. 2008/1833)

Technical Specification for the Proposed Augmentation of Servers for SCFBio, IITD

Specifications for High Performance Cluster **Configuration of Master/Head**

Point 5

- “Dual Redundant Hot Swappable Power Supplies” should be read as **“Redundant Hot Swappable Power Supplies”**

Point 7

- “At least 6 PCI-E slots out of which one must be 16 lane” should be read as “**At least 5 PCI-E slots out of which one must be 16 lane**”

Point 8

- “ 1 serial port, 6 USB ports” should be read as “**1 serial port, 4 USB ports**”

Point 12

- “Power Consumption and BTU/Hr rating to be provided for full configuration” should be read as “**Power Consumption and BTU/Hr rating to be provided for full and actual configuration**”

Direct Attached Storage Array on Master Node as per following specifications

Point 3

- “Should support Hardware RAID levels 0, 1, 10, 1E, 5, 6, 50, 5EE, 60” should be read as “**Should support Hardware RAID levels 0, 1, 5, 6**”

Point 6

- “Dual hot-swappable, redundant, and load-sharing power supplies” to be read as “**Hot-swappable, redundant, and load-sharing power supplies**”

Addition of Compute Nodes as per specification below: (at least 35 Nos)

Point 8

- “1 serial port, 6 USB ports” should be read as “**1 serial port, 4 USB ports**”

Point 12

- “Power Consumption and BTU/Hr rating to be provided for full configuration” should be read as “**Power Consumption and BTU/Hr rating to be provided for full and actual configuration.**”

Check List

Sl. No. 1 – Should be read as

“Non-refundable fee of Rs. 1000/- in favour of IRD Accounts, IIT Delhi in the form of Demand Draft of any scheduled bank payable at New Delhi.”

Sl. No. 3 - Should be read as

“Earnest Money Deposit of 2.5 % (two and a half percent) of the quoted price in the form of Demand Draft/Pay Order/Bank Guarantee of any Indian Nationalized Bank in favour of IRD Accounts, IIT Delhi to be given in a separate sealed envelope along with the technical bid.”

Sl. No. 7 – Should be read as

“Copies of work orders for clusters of x86-based nodes with Gigabit interconnect for MPI applications successfully executed during last three years” should be read as “Copies of work orders for clusters of x86-based nodes with IB interconnect for MPI applications successfully executed during last three years”