INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai - 400076

PR No. 1000037159 **Rfx No. 6100001614**

Technical Specification for New Hardware Procurement for ERP System

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1 Overview & Objective

The scope of work consists of supply, installation, configuration and maintenance of the hardware and related software for the ERP Data Center (DC) and Disaster Recovery (DR) site. The successful bidder is expected to configure as well as test the entire DC & DR set up on the new hardware. The selected bidder is also required to provide comprehensive On-site maintenance of the hardware supplied for a period of 5 years along with the warranty period. Details are available in the "Scope of Work" section of this document.

The quantity of hardware & peripherals are as under :-

S/N	Item Category	Item Description	Qty
1	DC Servers	8SFF NC Configure-to-order Server (with 5 years warranty)	3
2	DR Servers	8SFF NC Configure-to-order Server (with 5 years warranty)	3
3	DC Switches	24 Port 1/10G 6QSFP+ or 2QSFP28 Switch (with 5 years warranty)	2
4	DR Switches	24 Port 1/10G 6QSFP+ or 2QSFP28 Switch (with 5 years warranty)	2
5	Network Switch	48 x 1/10G BaseT with 6x40/100G QSFP28 Switch (with 5 years warranty)	1
6	Network Fibre Switch	48 x 1/10/25G SFP28 with 8x40/100G QSFP28 fiber switch (with 5 years warranty)	1
7	DC SAN Switches	32Gb 24/8 8-port 32Gb Short Wave SFP28 Fibre Channel Switch (with 5 years warranty)	2
8	DR SAN Switches	32Gb 24/8 8-port 32Gb Short Wave SFP28 Fibre Channel Switch (with 5 years warranty)	2
9	DC Backup Server	12 Large form factor Configure-to-order Server (with 5 years warranty)	1
10	DC Tape Library	Scalable Base/Storage Module (with 5 years warranty)	1
11	DC SAN Storage	Block Storage (with 5 years warranty)	1
12	DR SAN Storage	Block Storage (with 5 years warranty)	1
13	-	One time set-up/installation charges for hardware at DC & DR	1
14	-	AMS for Hardware, OS, and hardware mgmt. for 5 yrs.	5

Detailed specifications available at the following link.

IITB ERP Hardware Specifications

2 Pre-Qualification Criteria

2A Bidder Eligibility Criteria

S.No	Qualifying Criteria	Mandatory Document proof to be furnished
1	The bidder should be a company registered in India under the Companies Act or a Limited Liability Partnership (LLP) with a registered office and operations in India for the last 10 years. In case the Bidding Company is the result of a merger/acquisition, at least one of the merging companies should have been in operation for at least five years as on the date of submission of the bid.	Certificate of Incorporation issued by Registrar of Companies.
2	The bidder should have supplied at least one single order in the last 10 years of at least 20 physical servers from a reputed OEM like HPE, DELL, IBM, Lenovo,etc., to State/Central Government/PSUs or any listed corporate company.	Purchase order copies along with satisfactory work completion certificate/Final Acceptance certificate issued by Client. Relevant Purchase Orders received in the last 10 years.
3	The bidder should have at least five qualified and experienced Server Engineers/professionals on its payroll with a minimum experience of five years in handling servers from reputed brands.	Bio-data of the personnel proposed to be deployed for the project along with copies of the biodata, valid company ID, and salary slips.
4	Bidder has to be an OEM or partner authorized by OEM for this tender.	Letter of authorization (MAF) from OEM for this tender as per the format given in Annexure-IV.
5	The Bidder should have an average annual turnover of ₹3 Crores and should be a positive net worth company for the last three financial years.	The Audited Financial Statements (Profit and loss statement, Balance sheet) for the last three years and CA certificate should be furnished/ uploaded.
		Solvency certificate for the value of ₹75 Lakhs issued by Scheduled Banksto be furnished.
6	The bidder should be an ISO 9001 certified company at least for the last three years.	The ISO certificate should be enclosed.
7	Bidders should have an office/branch in the Mumbai Metropolitan Region (MMR).	Any government-approved address proof should be provided.

8	The bidder should not be blacklisted by any of the following entities: Any department of IIT Bombay, any other IITs, any state or central government body or organization, any autonomous body governed by state or central government, in Government E-Marketing portal (GeM) in the past 3 years w.r.t the tender date.	Self-declaration should be given on companies letterhead as per the format provided in the Annexure-II.

2B OEM Qualification Criteria

S. No	Qualifying Criteria	Mandatory Document proof to be furnished
1.	The OEM for the servers, switches, and storage should be in the Gartner leader's magic quadrant at least for the last three years OR in the top of 5 IDC Worldwide Quarterly Server Tracker (mainline servers) for the last four consecutive Quarters from India region.	URLs of OEM and Gartner/IDC website reference or an OEM self-declaration with all the details mentioned on a company letterhead.
2.	The OEMs of quoted products should have their own corporate office or spare parts warehouse and service centre or RMA depot in MMR with fully qualified engineers.	Any government authorized document in support or the OEM website URLs where this information is published or a self-declaration with all the details mentioned on the company letterhead.
3.	The OEM should be well equipped and located to honor 4 hours of response time in case of failures.	The OEM should submit a self-declaration with all the details mentioned on the company letterhead.
4.	The OEM should be well established at least for last 10+ years in enterprise servers.	Any government authorized document which will prove the establishment of OEM/Brand and or copy of PO needs to be attached.
5.	The OEM should have a direct presence in India at least for the last 10 years.	Any government authorized document which will prove the establishment of OEM/Brand and or copy of PO needs to be attached.

6.	The OEM (India part) should have an average annual turnover of at least Rs. 8 Crores from the last 3 consecutive years.	The Audited Financial Statements (Profit and loss statement, Balance sheet) for the last three years and CA certificate should be furnished/uploaded. OR a duly signed and stamped
		self-declaration on the company's letterhead.
7.	The OEM should have their own 24x7 technical support center in India (presence in MMR preferred) and the technical support resources should be on direct payrolls with the OEM.	Any government authorized document in support of this or the OEM website URLs where this information is published or a self- declaration with all the details mentioned on the company's letterhead.
8.	The OEM should not be blacklisted by any of the following entities: Any department of IIT Bombay, any other IITs, any state or central government body or organization, any autonomous body governed by state or central government, in Government E-Marketing portal (GeM) in the past 5 years w.r.t the tender date.	Self-declaration should be given on companies letterhead as per the format provided in the Annexure-II

3 General Terms and Conditions

Bidders are advised to read all the clauses mentioned in the tender carefully. Submitting your solution implies that you agree to act as per the terms and conditions mentioned in the tender.

1. The bidder shall bear all the costs during the preparation and submission of the proposal, site visit, proposed equipment production site visit.
2. The bidders are required to visit IIT Bombay and make a presentation of the solution(s) proposed in their technical bids.
3. No new information will be accepted from the bidder after the submission of the bids. However, IIT Bombay may ask for clarifications. IIT Bombay reserves the right to visit the manufacturing facility to verify the claim mentioned in the submitted bid. The bidder should respond to such a clarification request within the specified time.
4. The bidder has to supply a complete solution as per the items mentioned in the technical specification. On failing to do the same, IIT Bombay may invalidate the bid and disqualify the bidder.
5. The quoted product must be the most recent or currently supported models, and that they incorporate all recent improvements in design and materials. On failing to do the same, IIT Bombay may invalidate the bid and disqualify the bidder.
6. Due to a stringent deadline for incurring the expenditure, IIT Bombay has the right to **cancel the PO or charge the penalty** if the delivery, installation, and acceptance testing are not completed within the stipulated timeline.
    a. Specifically Delivery should be within **sixteen weeks** of issuing of PO.
    b. Installation, commissioning, and acceptance testing should complete within **one month of the delivery**.
7. The payment term will be 100% on completion of scope of work defined below in this tender.
8. The purchase committee will make the final decision on the quantity of purchase after evaluating the proposals. The actual quantity purchased could be lower or higher up to 25% of indicated quantity.
9. At the time of installation, if it is found that some minor additional hardware or software items are required to meet the operational requirement of the configuration but not included in the original list of deliverables, the bidder shall supply such items to ensure the completeness of the configuration at no extra cost.
10. Bidders should submit only the necessary documentation related to this tender with a proper index highlighting the required technical specs in the product documentation that matches the tender specs or requested by the purchaser with **page numbers**. Failure to do the same will invalidate the bid and result in disqualification.
11. Bidder is not allowed to outsource any work mentioned in the “scope of work” for this tender to a third party.
12. The bidder has to give an undertaking of authenticity along with the technical bid on the company's letterhead as per the format mentioned in Annexure-I. Failure to do the same

will invalidate the bid and result in disqualification.

13. The bidder has to give an undertaking of acceptance of all terms & conditions along with the technical bid on the company's letterhead as per the format given in Annexure-III. Failure to do the same will invalidate the bid and result in disqualification.
14. Along with the technical bid, the OEM has to submit Processor MAF (Manufacturer Authorization Form) for the CPU through the bidder as per the given format in Annexure-IV. Failure to do the same will invalidate the bid and result in disqualification.
15. Along with the technical bid, the bidder has to submit a) the **compliance sheet** as per the given format in Annexure-VII, b) **documents checklist** as per the given format in Annexure-VI, and c) complete **bill of material (BoM)**. Failure to do the same will invalidate the bid and result in disqualification.
16. IIT Bombay reserves the right to accept or reject, in full or in part, any or all the offers if a) seller fails to comply with any material term of the contract; b) seller fails to deliver the material(s) or any part thereof within the stipulated delivery period and /or fails to replace/ rectify any rejected or defective material(s) promptly; c) seller becomes bankrupt or goes into liquidation or the seller makes a general assignment for the benefit of the creditors or a receiver is appointed for any substantial property owned by the seller; d) seller has misrepresented to buyer.
17. IIT Bombay also reserves the right to re-issue the tender without any explanation. The bidders will not have any right to object to such re-issue of tender.
18. IIT Bombay reserves the right to terminate the order/tender/PO if the bidder/OEM violates any of the terms and conditions of the tender.

4 Tender Evaluation

The competent authority will evaluate all the proposals to determine whether these are complete in all respects as specified in the tender document. Evaluation of the proposal shall be done through a Two Bid System, as explained in the Notice Inviting Tenders.

4A Technical Bid evaluation

A. Institute shall evaluate the technical bid to determine whether these are meeting the essential eligibility criteria, whether the bidder has submitted the EMD, whether any computational errors have been made, whether all the documents have been properly signed & stamped, whether all the documents as mentioned / or required to be submitted with technical bid are submitted and whether a bid is complete and generally is in order.

B. After evaluating the performance parameters offered, support structures, technical evaluation of the proposed server as per the specified specifications, and references, the competent authority will shortlist a group of bidders. The disqualifications will be informed to the concerned bidders. Subsequently, the shortlisted bidders will be required to participate in the commercial bidding detailed below.

4B Financial Bid evaluation

In an event if IIT Bombay considers the lowest among the quoted bids is beyond our estimates for the contract, IIT Bombay reserves the right to continue the bidding through a **Reverse Auction (RA)** method starting at an initial bid value at the lowest quoted bid.

5 Evaluation Matrix

In Annexure-VII, a set of attributes pertaining to the equipment have been given in the form of a compliance sheet. The purchase committee at IIT Bombay will check whether the quoted product is matching with the tender specifications. The evaluation will be done based on the documentation, details, and remarks given by the bidder and from the OEM website. The bidder/OEM will be disqualified if the quoted product is not complying with any of the tender specifications.

6 Commercial Bid Format

S.No.	Item Category	Quantity
1	DC Servers	3
2	DR Servers	3
3	DC Switches	2
4	DR Switches	2
5	Network Switch	1
6	Network Fibre Switch	1
7	DC SAN Switches	2
8	DR SAN Switches	2
9	DC Backup Server	1
10	DC Tape Library	1
11	DC SAN Storage	1
12	DR SAN Storage	1
13	One time set-up/installation charges for hardware at DC & DR	1
14	AMS for Hardware, OS, and hardware mgmt. for 5 years	1

Beyond five years, the AMS may be renewed subject to satisfactory Annual performance at revised rates by allowing for a 7% increment for the first year, and subsequent years at an increment of 5%.

7 Scope of Work

ICT: Information and Communications Technology

1. The selected Bidder has to supply the listed items within the stipulated time.

2. The selected Bidder has to deploy, install, configure and test the servers as per specification mentioned in the tender at the Data Centre in accordance with the technical team of IIT Bombay. The scope of the work at this phase would include but not restricted to the following:
    A. Site Inspection and Bill of Material Verification.
    B. Rack Mounting and Stacking of the New Servers.
    C. Structured cabling of OFC, CAT6a/CAT7 and power and any other required cabling and enclosing via flexible pipes wherever necessary with design approval from Technical staff assigned by Application Software Centre IIT Bombay.
    D. Labelling for each and every cable, switch, server, and network diagram and documentation.
    E. Servers Power on Self/Burn-In/Stress Test activity using HPL(High- Performance LINPACK), Disk IO testing using flexible input/output, rados and network IO using Netstress and IPerf –Minimum 48 Hours
    F. Replacement of hardware if any fault is observed.
    G. License installation.
    H. Firmware upgradation.
    I. Management IP and user configuration.
    J. Installation of Linux operating system, drivers of all the peripherals, OS hardening as per the details and steps given by technical team of Application Software Centre IIT Bombay.
    K. User acceptance Test and Sign off.

3. The vendor has to ensure that the proposed equipment/components must not be declared “End of Support" in the next 7 years from the date of purchase. In case the supplied equipment is declared End of Support during the contract period, the vendor and OEM jointly have to replace the equipment having equivalent or higher configurations without any additional cost to the purchaser.

4. The vendor should have a back-to-back arrangement with the OEM so that the purchaser will be able to log a call with the OEM directly for the contract period.

5. Single Point of Contact: The selected vendor shall appoint a single point of contact, with whom IIT Bombay will deal with any activity pertaining to the requirements of this Tender. The vendor has to award all the necessary authority to this person at its own expense.

6. System Maintenance and Management

1. Troubleshooting issues in the ICT infrastructure solution to determine the areas where fixes are required and ensuring resolution of the same
2. Identification, diagnosis, and resolution of problem areas pertaining to the ICT Infrastructure and maintaining the defined SLA levels
3. Hardware health check
4. Ensure proper configuration of server parameters
5. Installation and reinstallation in the event of system crash / failures
6. Troubleshoot problems with web services, application software, desktop/server relationship issues and overall aspects of a server environment like managing and monitoring server configuration, performance, and activity of all servers
7. Managing the trouble tickets, diagnosis of the problems, reporting, managing escalation, and ensuring rectification of server problems as prescribed in Service Level Agreement. Power off and Power on during regular power maintenance activities
8. Management of Load balancers including firmware updates and upgrades, SSL certificate generation and deployment, troubleshooting incidents, etc.

Storage and Backup Administration

1. Management of the storage solution including, but not limited to, storage management policy, configuration and management of disk array, SAN fabric / switches, tape library, etc.
2. Management of storage including but not limited to management of space, SAN/NAS volumes, RAID configuration, LUN, zone, security, business continuity volumes, performance, etc.
3. Remotely manage the storage system and components and provide appropriate setup
4. Identifies parameters including but not limited to key resources in the storage solution, interconnects between key resources in the storage solution, health of key resources, connectivity and access rights to storage volumes and the zones being enforced in the storage solution
5. Create / delete, enable / disable zones in the storage solution
6. Create / delete / modify storage volumes in the storage solution
7. Create / delete, enable / disable connectivity and access rights to storage volumes in the storage solution o Facilitate scalability of solution wherever required.
8. Advise on media management and troubleshoot backup media related incidents

Vendor Management

1. Coordinate with all the relevant OEMs for all supplied ICT deployed at Data Centre
2. Ensure that the user problems and issues are resolved in accordance with the SLA of the OEM.
3. Ensure that unresolved items are escalated in accordance with the escalation matrix.
4. Follow up with the OEM till closure of tickets

8 Warranty & SLA

1. Each and every component of the supplied equipment, security keys, accessories, and licenses should have an on-site comprehensive 24x7x365 days warranty for 5 years. No parts, accessories, licenses of the systems shall be excluded from such warranty.
2. The said warranty will begin from the date of acceptance and sign-off from the technical team of IIT Bombay.
3. The payment of the AMS will be released on a half-yearly basis based on the performance, and if there is any penalty, it will be deducted from the payment of the next installment.
4. The vendor will be fully responsible for getting support from OEM in respect of each and every Hardware part, Software, Licenses, and technical support for the equipment mentioned in this tender. In case the vendor fails to provide the support, OEM has to provide technical support for the period mentioned in the contract. Vendor has to attach a confirmation letter from the OEM.
5. The said warranty and the AMC should not be considered violated if the IIT Bombay buys any other compatible supplemental hardware from a third party and installs it in the machines with an intimation to the awarded vendor/OEM.
6. Mean time between failures (MTBF): If during the warranty period, any server or its components fails more than three occasions that caused downtime (below 99% uptime) in a period of less than three months, it shall be replaced by equivalent or better configured robust new server by the vendor/OEM at no extra cost to the IIT Bombay.
7. For any delay in delivery of replacement of faulty parts during the inspection, commissioning of the systems, or for acceptance tests/checks, the IIT Bombay reserves the right to charge a penalty.
8. The vendor will depute an experienced engineer as and when required to visit the site and assist the staff during the initial configuration and/or during the failure to ensure the system's proper functioning.
9. The Root Cause Analysis (RCA) faced for any issues related to the system should be provided by the OEM within 3 Business Days.
10. If any component supplied as a replacement by the vendor/OEM is not compatible and proves to be useless to our solution, then the time passed during this replacement will be treated as system downtime.
11. The net uptime commitment of 99.6% monthly is a must on all the equipment, commencing from the date of the acceptance of the entire system (hardware/software). The uptime will be calculated as follows

    Uptime per server (%) = ((Total hours during the month - Sum of downtime hours during the month per servers) X 100) / Total hours during the month

    Total hours during the month = No. of days x24 hours

    Net Uptime = Sum of uptime of all the servers/ Number of servers.

12. Any hardware issues should be resolved/rectified within 24 hours. It is the responsibility of

the vendor to coordinate with the OEM to arrange for a replacement if required within the stipulated time period.

13. Along with the technical bid, the OEM should submit a letter of commitment for **5 years** from the installation date, with respect to Hardware, Software, Firmware support, and uptime commitment. The bid will be rejected if they are not accompanied by the letter from the OEM.
14. In case of merger/sale of a business by the OEM, the above-said warranty, AMC and SLA will be applicable to the new OEM. If the new OEM does not honor the said warranty, AMC, and SLA, the IIT Bombay reserves the right to blacklist and take appropriate legal action against both the vendor and the OEM. The OEM has to accept this clause in the commitment letter. Failure of the same may result in disqualification of the bid.

9 Penalty

1. Delivery of all equipment should be within 16 weeks from the date of issuing the Purchase Order. In the event of any or all equipment(s) not being delivered, installed, tested, and commissioned within a period of 16 weeks from the date of Purchase Order, a penalty of one percent of the total cost of the solution per week will be charged to the vendor. This amount of penalty so calculated shall be deducted at the time of making final payment after successful installation and commissioning of hardware.

2. Penalties during contract period:

Uptime Percentage	Penalty Details
During the first five years	
Net Uptime is more than 99.6%	No Penalty
Net Uptime lesser than 99.6% but more than 99%	3% of the product cost
Net Uptime lesser than 99%	Penalty at an incremental rate of 2% (in addition to a base of 3%) of the product cost for every 0.5%lower than the stipulated uptime

3. The penalty is to ensure that the OEM and vendor put their best efforts to honor SLAs committed. There will not be any upper limit on the penalty. If there is any penalty above the PBG, the vendor has to pay the penalty on demand raised by IIT Bombay. In case of failure to pay the penalty, IIT Bombay reserves the right to take legal action and blacklist the vendor/OEM.
4. The IIT Bombay reserves the right to publish the information about the unsatisfactory service by the vendor/OEM and action taken by the institute on their website and in the national newspaper (s).

10 Service Delivery Approach

1. Preventive maintenance visits shall be performed by the vendor in the first week of every quarter as per the agreed terms. The preventive maintenance service report should contain a check list of the works to be carried out.
2. Such Preventive Maintenance /System Health Check will include but not be limited to checking the logs, updating the patches (firmware, OS etc.) but also or replacements of the unserviceable parts.
3. The selected vendor shall have to conduct preventive maintenance every quarter for all the components, and corrective/remedial maintenance services to set right the malfunctioning of the system if any. This includes replacement of serviceable parts and unserviceable parts.
4. Vendor must maintain Helpdesk functions as a single point of contact for said IT Infrastructure.
5. Vendor's Helpdesk Team should log the incidents for the cases received on phone or email.
6. Vendor's Helpdesk Team should prioritize incidents based on severity / extent of outage.
7. Ticket number to be generated and assigned to the relevant incident group for onsite handling.
8. On-site support to the users for gathering logs as needed and uploading to the respective OEM for further analysis.
9. Spares failed are replaced and hardware is brought to functional state. Defective spares are collected back for further repair or eWaste disposal.
10. Cases should be tracked until resolution.
11. IIT Bombay should be updated with the incident status along with the ticket number (if any).
12. Generate and share monthly reports to the relevant authorities as per the reporting schedule and structure.
13. Call closure post confirmation from users.

11 Annexures

Annexure–I

Format for Undertaking of Authenticity
(To be given on company's letterhead)

Date:

To,
The Registrar
IIT Bombay,
Powai Mumbai – 400076

Sub: Undertaking of Authenticity for Hardware and/or Software Supplies Tender Reference No.: _____

Dear Sir,

1. With reference to the equipment being quoted to you, vide our Quotation No: dated , we hereby confirm that all the components, parts, assembly, software, etc. used in the equipment to be supplied shall be genuine, new components/parts/assembly/software and of the most recent or current supported models, and that they incorporate all recent improvements in design and materials, only from respective OEMs of the products and that no refurbished / duplicate / second-hand components /parts/assembly/software shall be supplied or shall be used. We also undertake to produce a certificate from the Original Equipment Manufacturers (if required by you) to support the above statement at the time of delivery/installation.
2. We also confirm that in respect of licensed operating systems and other software utilities to be supplied, the same will be procured from authorised sources and provided with an Authorized License Certificate.
3. In case of default and if the purchaser finds that the above conditions are not complied with, we agree to take back the equipment supplied and return the money paid by you, in full within seven days of intimation of the same by the purchaser, without demur or any reference to a third party and without prejudice to any remedies the purchaser may deem fit.
4. In case of default and if we are unable to comply with the above, at the time of delivery or during installation, for the IT Hardware / Software already billed, we agree to take back the equipment without demur if already supplied and return the money if any paid to us by you in this regard.
5. We also take full responsibility for both parts & Service SLA as per the content even if there is any defect by our authorized Service Centre / Reseller / SI.

Dated this ..... day of 202…

(Signature) (Name) (In the capacity of)

Duly authorised to sign Bid for and on behalf of _____

Annexure-II **Self declaration of blacklisting**

(To be given on company's letterhead)

Date:

To,
The Registrar
IIT Bombay,
Powai Mumbai –

Sub: Declaration of Non-Blacklisting.
Tender Reference No.: _____

Dear Sir,

With reference to the equipment being quoted to you vide our Quotation No: dated, we hereby declare that neither we nor our Start-up or a parent, subsidiary, or associate Company under direct or indirect common parent is/are presently not placed on any Blacklist or Holiday list by any department of IIT Bombay, or by any other IIT, or by any state or central government body or organization, or by any PSU's, or by an autonomous body governed by state or central government or in Government E- Marketing Portal (GeM) for any kind of fraudulent practice(s)/activity(s) in last three years.

It is understood that, If this declaration is found to be incorrect, then without prejudice to any other action that may be taken, my/ our security may be forfeited in full, and the tender, if any to the extent accepted, may be cancelled.

Dated this ..... day of 202…

(Signature) (Name) (In the capacity of)

Duly authorised to sign Bid for and on behalf of _____

Annexure-III **TENDER / CONDITIONS ACCEPTANCE LETTER**

(To be given on company's letterhead)

Date:

To,
The Registrar
IIT Bombay,
Powai Mumbai – 400076

Sub: Acceptance of Terms & Conditions of Tender. Tender Reference No.: _____

Dear Sir,

1. I/We have downloaded/obtained the tender document(s) for the above-mentioned 'Tender/Work.'
2. I/We hereby certify that I/We have read the entire terms and conditions of the tender documents (including all documents like annexure), schedule(s), etc.,) and I/We shall abide by the terms/conditions/clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/organization has also been taken into consideration while submitting this acceptance letter.
4. I/We hereby unconditionally accept the tender conditions of the above-mentioned tender document(s)/corrigendum(s) in totality/entirely.
5. In case any provisions of this tender are found violated, your department/ organization shall be at liberty to reject this tender/bid, including the forfeiture of the full said earnest money deposit absolutely, and we shall not have any claim/ right against the department in satisfaction of this condition.

Dated this ..... day of 202…

(Signature) (Name) (In the capacity of)

Duly authorised to sign Bid for and on behalf of _____

Annexure–IV **Manufacturer's Authorization Form**

(To be given on OEM's letterhead)

Date:

To,
The Registrar
IIT Bombay,
Powai Mumbai – 400076

Sub: Authorization for participation in the Tender.
Tender Reference No.: _____

Dear Sir,

We, who are established and reputable manufacturers / producers of _____having factories / development facilities at_____(address of factory / facility) do hereby authorise M/s_____(Name and address of Agent) to submit a Bid, and sign the contract with you against the above Bid Invitation.

2. We hereby extend our full warranty/support for the above firm's Solution, Products, and services against this Bid Invitation for the mentioned period.

3. We duly authorise the said firm to act on our behalf in fulfilling all installations, Technical support, and maintenance obligations required.

Dated this ……. day of 202…

(Signature) (Name) (In the capacity of)

Duly authorised to sign Bid for and on behalf of _____

Annexure – V **Manufacturer's Authorization Form for Processor**

(To be given on Processor OEM's letterhead)

Date:

To whom it may concern

Sub: Authorization for participation in the Tender.

Tender Reference No.: _____

Dear Sir,

This is to certify that we,_____(Eg. AMD/Intel) authorize M/s _____ (Name and address of server OEM) to use_____(Model number of the processor) against the above said tender inquiry and also do confirm that, they are manufactured and supplied by us.

We duly certify that, the said OEM will have full authority to install, maintain and provide technical support for the above mentioned processor.

Dated this ..... day of 202…

(Signature) (Name) (In the capacity of)

Duly authorized to sign Bid for and on behalf of _____

Annexure-VI **Format for the documents checklist**

All the bidders are requested to mention the details/any deviations with respect to the requested documents along with the exact reference page number from the documentation in the compliance sheet format given below.

Sr. No.	Requested Documents	Attached/Remark
1.	MAF (Manufacturer's authorization Form) (Server OEM)	
2.	Processor MAF (Manufacturer's authorization Form) (Processor OEM)	
3.	Compliance Sheet	
4.	BOM (Bill of Material)	
5.	The undertaking of authenticity	
6.	Self-declaration of blacklisting	
7.	Acceptance of Terms and Conditions	
8.	Letter of commitment	
9.	Technical Documents of quoted server, disk, NIC cards, SMPS, etc. (Datasheets/Manuals/whitepapers, etc)	
10.	Documents against the bidder's eligibility criteria (Turnover, copies of PO, Engineer's Bio-data, MMR region office address, etc.)	
11.	Documents against the OEM eligibility criteria (Details/URLs for Gartner/IDC presence, services centers, years of presence in India and globally, copies of PO, Turnover, etc.)	

Annexure-VII **Format for the compliance sheet**

All the bidders are requested to mention the details/any deviations with respect to the specifications along with the exact reference page number from the documentation in the compliance sheet format given below.

IIT Bombay DC Hardware BOM		
S.No.	**Specifications**	**Bidder Compliance/Remark**
1	**DC Server:**	
	8 Small form factor (SFF) NC Configure-to-order Server	
	ICX CTO Mod-X 8SFF	
	Minimum 2.8GHz 24-core 230W Processor (multi threading supported)	
	32GB (1x32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	
	600GB SAS 12G Mission Critical 10K SFF BC 5-years Warranty Multi Vendor HDD	
	x8/x16/x8 Primary FIO Riser Kit	
	x16 Lanes 4GB Cache NVMe/SAS 12G RAID Controller	
	32GB 2-port Fibre Channel Host Bus Adapter	
	Ethernet 10GB 2-port BASE-T Adapter	
	96W Smart Storage Lithium-ion Battery with 145mm Cable Kit	
	Ethernet 1Gb 4-port BASE-T OCP3 Adapter	
	Maximum Performance Fan Kit	
	Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	
	iLO (or equivalent Platform Management Architecture) Advanced 1-server License with 5 Years Support on Licensed Features	
	8SFF SAS/SATA Tri-Mode Cable Kit	
	Black Rivets Kit	
	2U SFF Easy Install Rail Kit	
	High Performance Heat Sink Kit	
	5 Years Technical Care Critical with Defective Media Retention Service	

	5 Years Technical Support for Server Hardware with replacement (24x7)	
2	**DC Switches:**	
	24 Port 1/10G 6QSFP+ or 2QSFP28 Switch	
	40G QSFP+ MPO SR4 Transceiver	
	Front-to-Back Fan Tray	
	450W Front-to-Back AC Power Supply	
	450W Front-to-Back AC Power Supply India English	
	5 Years Foundation Care Critical Service	
	5 Years 24G Support (24x7)	
3	**DC SANSwitches:**	
	32Gb 24/8 8-port 32GB Short Wave SFP28 Fibre Channel Switch	
	LC/LC Multi-mode OM4 2 Fiber 5m Cable	
	32GB 8-port Short Wave SFP28 Fibre Channel Upgrade License with Transceiver Kit	
	5 Years Technical Care Critical Service	
	5 Years 24/8 8p 32G Switch Support (24x7)	
4	**DC Backup Server:**	
	12 Large form factor (LFF) Configure-to-order Server (Commvault and windows server 2012 std operating system)	
	ICX CTO Mod-X 12LFF	
	Minimum 2.4GHz 16-core 135W Processor (multi threading supported)	
	32GB (1x32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	
	4TB SATA 6G Business Critical 7.2K LFF LP 5-Years Warranty Multi Vendor HDD	
	1TB SATA 6G Business Critical 7.2K LFF LP 5-Years Warranty Multi Vendor HDD	
	x8/x16/x8 Primary FIO Riser Kit	
	x16 Lanes 4GB Cache NVMe/SAS 12G RAID Controller	
	32GB 2-port Fibre Channel Host Bus Adapter	
	Ethernet 10GB 2-port BASE-T Adapter	
	96W Smart Storage Lithium-ion Battery with 145mm Cable Kit	

	Ethernet 1GB 4-port BASE-T OCP3 Adapter	
	800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	
	1-server License with 5 Years Support on Licensed Features of Platform Management Architecture	
	4LFF SAS/SATA Tri-Mode Cable Kit	
	LFF SAS/SATA Tri-Mode Cable Kit	
	Black Rivets Kit	
	2U LFF Easy Install Rail Kit	
	Standard Heat Sink Kit	
	5 Years Technical Care Critical with Defective Media Retention Service	
	5 Years Technical Support for Server Hardware with replacement (24x7)	
5	**DC Storage:**	
	Block Storage Base Configuration	
	2U Chassis	
	256GB 8-core Block Controller Node	
	Minimum of Raider 32/64GB 4-port Fibre Channel Host Bus Adapter	
	32GB SFP28 Short Wave 1-pack Pull Tab Optical Transceiver	
	1600W AC Power Supply	
	7.68TB NVMe SFF Encrypted SSD (Minimum 57TiB Usable Capacity on RAID6, minimum 100K IOPS 70:30 R:W, mininmum 16K block size)	
	250V 10Amp Black 1.4m WW Power Cord	
	IN1293 250V 16Amp IN Power Cord	
	250V 10Amp Gray 1.4m WW Power Cord	
	Raider CDM Bluetooth Connectivity Kit	
	Block Storage OS 8-core Tier-4, 5-Years Software and Support SaaS	
	FIPS Data Encryption E-LTU (Electronic License to use)	
	E-LTU (Electronic License to use)	

	Technical Installation Startup Service	
	Block Storage OS Startup Service	
	Block Storage 2N Startup Service	
	Block Storage Service	
	5 Years Technical Care Essential Service (24x7)	
	Base Configuration Support	
	2U Chassis Support	
	8C Switchless Node Support	
	32/64 4pt FC HBA Support	
	7.68TB NVMe FIPS SSD Support	
	Virtual Rack Service	
	Configurator Defined Build Instruction Option	
6	**DC Tape Library:**	
	Scalable Base/Storage Module	
	LTO-8 Ultrium 30750 FC Drive Upgrade Kit	
	Upgrade Power Supply Kit	
	LC/LC Multi-mode OM4 2 Fiber 5m Cable	
	Installation Service	
	Tape Drive Install Service	
	Universal Cleaning Cartridge	
	LTO-8 Ultrium 30TB RW Non Custom Labeled Library Pack 20 Data Cartridges with Cases	
	Installation and Startup Service	
	Base/Storage Module Installation and Startup Service	
	5 Years Technical Care Critical with Defective Media Retention Service	
	5 Years Base/Storage Module Support	

IIT Bombay DR Hardware BOM		
S.No.	**Specifications**	**Bidder Compliance/Remark**
1	**DR Server:**	
	8 Small form factor (SFF) NC Configure-to-order Server	
	ICX CTO Mod-X 8SFF	
	Minimum 2.8GHz 24-core 230W Processor (multi threading supported)	
	32GB (1x32GB) Dual Rank x4 DDR4-3200 CAS-22-22-22 Registered Smart Memory Kit	
	600GB SAS 12G Mission Critical 10K SFF BC 5-years Warranty Multi Vendor HDD	
	x8/x16/x8 Primary FIO Riser Kit	
	x16 Lanes 4GB Cache NVMe/SAS 12G RAID Controller	
	32GB 2-port Fibre Channel Host Bus Adapter	
	Ethernet 10GB 2-port BASE-T Adapter	
	96W Smart Storage Lithium-ion Battery with 145mm Cable Kit	
	Ethernet 1Gb 4-port BASE-T OCP3 Adapter	
	Maximum Performance Fan Kit	
	Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	
	iLO (or equivalent Platform Management Architecture) Advanced 1-server License with 5 Years Support on Licensed Features	
	8SFF SAS/SATA Tri-Mode Cable Kit	
	Black Rivets Kit	
	2U SFF Easy Install Rail Kit	
	High Performance Heat Sink Kit	
	5 Years Technical Care Critical with Defective Media Retention Service	

	5 Years Technical Support for Server Hardware with replacement (24x7)	
2	**DR Switches:**	
	24 Port 1/10G 6QSFP+ or 2QSFP28 Switch	
	40G QSFP+ MPO SR4 Transceiver	
	Front-to-Back Fan Tray	
	450W Front-to-Back AC Power Supply	
	450W Front-to-Back AC Power Supply India English	
	5 Years Foundation Care Critical Service	
	5 Years 24G Support (24x7)	
3	**DR SAN Switches:**	
	32Gb 24/8 8-port 32GB Short Wave SFP28 Fibre Channel Switch	
	LC/LC Multi-mode OM4 2 Fiber 5m Cable	
	32GB 8-port Short Wave SFP28 Fibre Channel Upgrade License with Transceiver Kit	
	5 Years Technical Care Critical Service	
	5 Years 24/8 8p 32G Switch Support (24x7)	
4	**DR Storage:**	
	Block Storage Base Configuration	
	2U Chassis	
	256GB 8-core Block Controller Node	
	Minimum of Raider 32/64GB 4-port Fibre Channel Host Bus Adapter	
	32GB SFP28 Short Wave 1-pack Pull Tab Optical Transceiver	
	1600W AC Power Supply	

	7.68TB NVMe SFF Encrypted SSD (Minimum 57TiB Usable Capacity on RAID6, minimum 100K IOPS 70:30 R:W, minimum 16K block size)	
	250V 10Amp Black 1.4m WW Power Cord	
	IN1293 250V 16Amp IN Power Cord	
	250V 10Amp Gray 1.4m WW Power Cord	
	Raider CDM Bluetooth Connectivity Kit	
	Block Storage OS 8-core Tier-4, 5-Years Software and Support SaaS	
	FIPS Data Encryption E-LTU (Electronic License to use)	
	E-LTU (Electronic License to use)	
	Technical Installation Startup Service	
	Block Storage OS Startup Service	
	Block Storage 2N Startup Service	
	Block Storage Service	
	5 Years Technical Care Essential Service (24x7)	
	Base Configuration Support	
	2U Chassis Support	
	8C Switchless Node Support	
	32/64 4pt FC HBA Support	
	7.68TB NVMe FIPS SSD Support	
	Virtual Rack Service	
	Configurator Defined Build Instruction Option	
	Block Storage Base Configuration	

IITB Legacy Hardware BOM for Switch

S.No.	Item Description	Bidder Compliance/Remark
7	**Network Switch**	
	48 x 1/10G BaseT with 6x40/100G QSFP28 Copper Switch	
	40G QSFP+ MPO SR4 Transceiver	
	5 Years Foundation Care Critical Service	
	5 Years 24G Support (24x7)	
A	**Switch Architecture and Performance:**	
	Switch should have minimum 2.16 Tbps of higher Switching bandwidth & min 1000 Mpps of forwarding rate	
	Switch should be equipped with minimum 16GB RAM, 128 GB Flash/ssd & 32 MB of packet buffer or more. Must support dual redundant power supplies that are hot swappable (supplied from day1). Must support N+1 redundant fan units with front to back airflow.	
	Switch should support IPv4 and IPv6 switching and routing in hardware from day 1	
	Should support 0°C to 45°C operating temperature and 10% to 95% relative humidity	
	The switch shall be supplied with the latest Modular OS version	
B	**Required Port Densities**	
	Switch form factor should be 1U /2U or Chassis based to meet the port configuration requirement with full functionalities.	
	As per solution requirement switch support minimum 48 x 1/10G BaseT and 6x40/100G QSFP28 fiber or higher ports. Vendor should quote the model to suffice the port requirement.	
	Should support high-speed stacking/cluster with the ability to stack up to eight units & should support minimum 400Gbps stacking bandwidth. Required 1 meter cables for stacking should be provided from day 1.	
C	**Layer 2 features**	
	802.1Q VLAN on all ports with support for 4k active concurrent VLANs & 4000 VLAN IDs and 802.1 AK for dynamic VLAN propagation.	

	Must support IEEE standard such as 802.3ab, 802.3ae, 802.3az , 802.1s, 802.1w, 802.1d, 802.1ba, 802.1x, 802.1q, 802.3ad,802.1ab	
	Support for minimum 290K or more MAC addresses	
	Support for STP , MSTP, PVST+ , RSTP	
	Should support Private VLAN , Vlan Aggregation , Translation , 802.1v	
	Should support snmp and syslog Notification for MAC addition, deletion and movement across ports	
D	**Layer 3 features**	
	Support for IP Unicast routing protocols (static, RIPv2, OSPFv2 & v3, VRRP ,BGP ,PIM-DM/SSM) from day 1	
	Support MVR and PIM-SM,PIM-SSM	
	Switch Should support min 200K IPv4 routes	
	Switch Should support min 150K IPv6 routes	
	Switch Should support 100K or more multicast entries.	
	Switch should support 4K multicast groups or more and	
	Should support policy based traffic redirection	
	Switch should support network virtualization. Must support VXLAN, DCBX, ETS, PFC.	
	The switch should support unicast reverse path forwarding (uRPF) check feature	
E	**Quality of Service (QoS) Features**	
	Must support Diffserv Marking	
	Should support standard based protocols to dynamically reserve QOS and ensure lossless delivery of realtime Traffic	
	Switch should support eight hardware queues per port.	
F	**Security Features**	
	Switch Must support minimum 300 ACLs	
	Must support SSH-2, SCP-2 and SFTP with encryption/authentication	

	Must support Denial of Service (DoS) protection. Please describe the switch capabilities to protect against DoS attacks	
	Must support 802.1x, RADIUS , TACACS+, Role-Base policy, Mac security	
	Must support the ability to authenticate multiple users on a single port via 802.1X, web, or MAC at the same time	
G	**Management Features**	
	Should support Serial RS232 port, OOB ethernet management port and USB or External Compact Flash slot	
	Should support scheduled archiving / uploading of configuration and system log to a central server	
	Switch should support ASIC based Flow monitoring like SFLOW/Netflow/IPFIX	
	Should support the ability to restart individual CPU process like snmp , ssh , stp etc in case of process crash without the need to reboot the entire switch.	
	Should be manageable by SSH,RMON, SNMP, and HTTP/s	
	Should support Fabric capabilities within the same hardware. Must support the ability to automatically connect to the fabric backbone. Licenses for fabric network, Controller/Orchestration tool (including automation, dynamic segmentation etc) or equivalent solution should be supplied from day 1	
	Should support OEM cloud management & Zero touch provisioning either via cloud or on prem NMS solution from day 1	
	Switch should support TCL or Python based scripting and Application Telemetry for visibility. Analytics licenses should be supplied from day 1 to provide granular insights into who is using what application, when, and where in network	
H	**Service Virtualization**	
	Virtualizing and Segregating users and services in isolated zones (more secured mechanism than traditional VLANs separation especially for IoT deployments).	
	The proposed solution needs to provide automated configuration of services end to end with minimal human intervention. configuration automation technologies provided by bidders should expand to be consistent across the access, campus core, the data center	

	fabric automation should be supported over the WAN to reach remote sites and make them part of the network in future. Bidder to explain how this is achieved.	
	Solution should be able to build virtualized Layer 2/3 encapsulated tunnels across multiple switches, Data centers to extend servers domains with high-availability and security. Bidder must clearly	
	mention what technology is used to achieve this.	
	It should support any topology regardless of the number of switches connected and regardless of how they are connected	
	The switch should support VXLAN or similar overlay technology	
I	**Standards**	
	Switch should be compliant to following certifications and Safety Regulation which are currently active: IEC 62368-1, EN 60825-1 , FCC CFR 47 Part 15 Class A, RoHS, WEEE, EN 55032, EN55035, IEC/EN 61000-4-2,3,4,5,6,11	
7	**Network Switch**	
	48 x 1/10G BaseT with 6x40/100G QSFP28 Copper Switch	
	40G QSFP+ MPO SR4 Transceiver	
8	**Network Fibre Switch**	
	48 x 1/10/25G SFP28 with 8x40/100G QSFP28 fiber switch (With 24 No 1G UTP/Copper Transceivers and 24 Nos of 25G SM transceivers)	
A	**Switch Architecture and Performance:**	
	Switch should have minimum 4 Tbps of higher Switching bandwidth & min 1000 Mpps of forwarding rate	
	Switch should be equipped with minimum 16GB RAM, 128 GB Flash/ssd & 32 MB of packet buffer or more. Must support dual redundant power supplies that are hot swappable (supplied from day1). Must support N+1 redundant fan units with front to back airflow. Switch should be supplied with 24 No 1G UTP/Copper Transceivers and 24 Nos of 25G SM transceivers.	
	Switch should support IPv4 and IPv6 switching and routing in hardware from day 1	
	Should support 0°C to 45°C operating temperature and 10% to 95% relative humidity	
	The switch shall be supplied with the latest Modular OS version	

B	**Required Port Densities**	
	Switch form factor should be 1U /2U or Chassis based to meet the port configuration requirement with full functionalities.	
	As per solution requirement switch support minimum 48 x 1/10/25G SFP28 and 8x40/100G QSFP28 fiber or higher ports. Bidder should quote the model to suffice the port requirement.	
	Should support high-speed stacking/cluster with the ability to stack up to eight units & should support minimum 400Gbps stacking bandwidth. Required 1 meter cables for stacking should be provided from day 1.	
C	**Layer 2 features**	
	802.1Q VLAN on all ports with support for 4k active concurrent VLANs & 4000 VLAN IDs and 802.1 AK for dynamic VLAN propagation.	
	Must support IEEE standard such as 802.3ab, 802.3ae, 802.3az , 802.1s, 802.1w, 802.1d, 802.1ba, 802.1x, 802.1q, 802.3ad, 802.1ab	
	Support for minimum 290K or more MAC addresses	
	Support for STP , MSTP, PVST+ , RSTP	
	Should support Private VLAN , Vlan Aggregation , Translation , 802.1v	
	Should support snmp and syslog Notification for MAC addition, deletion and movement across ports	
D	**Layer 3 features**	
	Support for IP Unicast routing protocols (static, RIPv2, OSPFv2 & v3, VRRP ,BGP, PIM-DM/SSM) from day 1	
	Support MVR and PIM-SM,PIM-SSM	
	Switch Should support min 200K IPv4 routes	
	Switch Should support min 150K IPv6 routes	
	Switch Should support 100K or more multicast entries.	
	Switch should support 4K multicast groups or more and	
	Should support policy based traffic redirection	
	Switch should support network virtualization. Must support VXLAN, DCBX, ETS, PFC.	

	The switch should support unicast reverse path forwarding (uRPF) check feature	
E	**Quality of Service (QoS) Features**	
	Must support Diffserv Marking	
	Should support standard based protocols to dynamically reserve QOS and ensure lossless delivery of realtime Traffic	
	Switch should support eight hardware queues per port.	
F	**Security Features**	
	Switch Must support minimum 300 ACLs	
	Must support SSH-2, SCP-2 and SFTP with encryption/authentication	
	Must support Denial of Service (DoS) protection. Please describe the switch capabilities to protect against DoS attacks	
	Must support 802.1x, RADIUS , TACACS+, Role-Base policy, Mac security	
	Must support the ability to authenticate multiple users on a single port via 802.1X, web, or MAC at the same time	
G	**Management Features**	
	Should support Serial RS232 port ,OOB ethernet management port and USB or External Compact Flash slot	
	Should support scheduled archiving / uploading of configuration and system log to a central server	
	Switch should support ASIC based Flow monitoring like SFLOW/Netflow/IPFIX	
	Should support ability to restart individual CPU process like snmp , ssh , stp etc in case of process crash without the need to reboot the entire switch.	
	Should be manageable by SSH,RMON, SNMP, and HTTP/s	
	Should support Fabric capabilities within same hardware. Must support the ability to automatically connect to the fabric backbone. Please describe the available features. Licenses for fabric network, Controller/Orchestration tool (including automation , dynamic segmentation etc) or equivalent solution should be supplied from day 1	
	Should support OEM cloud management & Zero touch provisioning either via cloud or on prem NMS solution from day 1	

	Switch should support TCL or Python based scripting and Application Telemetry for visibility. Analytics licenses should be supplied from day 1 to provide granular insights into who is using what application, when, and where in network	
H	**Service Virtualization**	
	Virtualizing and Segregating users and services in isolated zones (more secured mechanism than traditional VLANs separation especially for IoT deployments).	
	The proposed solution needs to provide automated configuration of services end to end with minimal human intervention. configuration automation technologies provided by bidders should expand to be consistent across the access, campus core, the data center	
	fabric automation should be supported over the WAN to reach remote sites and make them part of the network in future. Bidder to explain how this is achieved.	
	Solution should be able to build virtualized Layer 2/3 encapsulated tunnels across multiple switches, Data centers to extend servers domains with high-availability and security. Bidder must clearly mention what technology is used to achieve this.	
	It should support any topology regardless of the number of switches connected and regardless of how they are connected	
	The switch should support VXLAN or similar overlay technology	
I	**Standards**	
	Switch should be compliant to following certifications and Safety Regulation which are currently active: IEC 62368-1, EN 60825-1 , FCC CFR 47 Part 15 Class A, RoHS, WEEE, EN 55032, EN55035, IEC/EN 61000-4-2,3,4,5,6,11	
J	**Warranty and Certification**	
	All required licenses for above mentioned features and functionality should be included & quoted from day 1. All equipment should be covered under NBD Support contract with 24/7 TAC access. OEM should share NBD back-to-back contract copy with customer.	
	OEM should have India Toll Free number TAC number, India R&D Center and at least 2x Support depot in India	
	All switches should be from same OEM. Core Switch and Access switches should have same operating systems.	

	For Better integration all Management Automation / Orchestartion tool, wireless, switches and transceivers must be from same OEM.	