



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

Ref. No. 22-23/06 (PR: 100026434)

RFx. No.6100001122

Technical Specification of SERVER

Processor		Bidder Compliance (Yes/No)
Processor Architecture	CISC(X86)	
Processor Make	Intel	
Number of Cores per Processor	24	
Processor Base Frequency (GHz)	2.2	
Processor Turbo Frequency (GHz)	4	
Total Cache (L1+L2+L3)(MB)	35.75	
Processor Description/ Number	Intel Xeon Gold 5220R	
Chassis		
Form Factor	Rack	

Size (RU)	2	
Motherboard		
Chipset compatible with CPU	Intel C621	
Expansion Slots Gen 3 (PCIe x1)	0	
Expansion Slots Gen 3 (PCIe x4)	0	
Expansion Slots Gen 3 (PCIe x8)	6	
Expansion Slots Gen 3 (PCIe x16)	2	
Maximum number of Sockets available on Server	2	
Maximum number of Sockets populated with Processors available on Server	2	
Co-Processor / GPU		
Availability of Co-Processor /GPU	No	
If Yes, Maximum Number of Slots available for Co-Processor/GPU	0	
If Yes, Maximum Number of slots populated with Co processor/GPU	0	
If Yes, Co Processor /GPU Description	NA	
Memory		
Type of RAM	DDR4 SDRAM with ECC	
Total Number of DIMM Slots available	24	

Number of DIMM Slots populated with DDR SDRAM	16	
Number of DIMM Slots populated with DDR NVRAM	0	
DDR SDRAM Size (GB)	512	
DDR NVRAM Size (GB)	0	
DDR SDRAM upgradable up to using spare DIMM Slots (GB)	768	
DDR NVRAM upgradable up to using spare DIMM Slots (GB)	0	
SSD Storage		
Type of Interface for SSD	NA	
Type of SATA SSD	NA	
SATA SSD Hot Swappable	NA	
Endurance for SATA SSD (DWPD - Drive Writes Per Day) (X)	0	
Total Number of Slots available for SATA SSD	0	
Number of Slot Populated with SATA SSD	0	
Capacity offered per SATA SSD (GB)	0	
Total Capacity Offered with SATA SSD (GB)	0	

Type of SAS SSD	NA	
SAS SSD Hot Swappable	NA	
Endurance for SAS SSD (DWPD - Drive Writes Per Day) (X)	0	
Total Number of Slots available for SAS SSD	0	
Number of Slots populated with SAS SSD	0	
Capacity Offered per SAS SSD (GB)	0	
Total Capacity Offered with SAS SSD (GB)	0	
Type of NVMe SSD	NA	
NVMe SSD Hot Swappable	NA	
Endurance for NVMe SSD (DWPD - Drive Writes Per Day) (X)	0	
Total Number of Slots available for NVMe SSD	0	
Number of Slots populated with NVMe SSD	0	
Capacity Offered per NVMe SSD (GB)	0	
Total Capacity Offered with NVMe SSD (GB)	0	
HDD Storage		
Type of Interface for Hard Disk Drive	SAS	

Total number of Slots available for SATA Drive	0	
Number of Slots populated with SATA Drive	0	
Capacity offered per SATA Drive (GB)	0	
SATA drive speed (hot plug or better) (RPM)	NA	
Total Storage Capacity offered with SATA Drive (GB)	0	
Total number of slots available for SAS drive	12	
Number of Slots populated with SAS Drive	8	
Capacity offered per SAS Drive (GB)	14000	
SAS drive Speed (Hot plug or better) (RPM)	7200	
Total Storage Capacity offered with SAS Drive (GB)	112000	
Total number of slots available for NL SAS drive	0	
Number of Slots populated with NL SAS Drive	0	
NL SAS drive speed (hot plug or better) (RPM)	NA	
Total Storage Capacity offered with NL SAS Drive (GB)	0	

RAID		
RAID level	1,0,5,10	
No of RAID Controller Ports	8	
Speed of RAID Controller Ports (Gbps)	12	
RAID Controller Cache (GB)	4	
Ports & Interfaces		
Network Card Supported	1G,10G	
Number of Networking Interface Cards (LAN)	1	
Whether Network Interface Card Embedded	Yes	
Total Number of Ethernet Ports required in Server	4x1G,2x10G RJ 45	
Networking Interface Card Features	Asset Feature Tracking	
Server Network Ports Should Support SR-IOV Feature	Yes	
Server network ports should support DPDK and it should deliver zero packet loss as per RFC 2544 and deliver 100%-line rate for all the packet sizes over 64 Bytes, Vendor must submit latest DPDK test report for the same	Yes	
Number of Single port FC HBA card	0	
Number of Dual port FC HBA card	0	

Number of Quad port FC HBA card	0	
FC HBA Speed (Gbps)	NA	
vHBA Card Features Supported	Yes	
Number of Converged Network Adaptor (CNA)	0	
Number of Ports per CNA card	NA	
CNA Port Speed (Gbps)	0	
Length of LC-LC Cable per SFP+ Port (meter)	0	
Length of LC-LC Cable per HBA Port (meter)	0	
Length of LC-LC Cable per CNA Port (meter)	0	
Length of Twinax Breakout Cables per Port (meter)	0	
Video Controller (support VGA or above resolution)	Yes	
Keyboard Port	No	
Mouse Port	No	
DVD ROM (Internal/External)	No	
USB Ports (version 2point0/3point0)	5	
Total number of Spare Bays Available for	0	

Future Upgradation (Internal)		
Total number of Spare Bays Available for Future Upgradation (Hot Pluggable)	0	
Certifications		
Certifications/Compliance (OS)	Windows, Red Hat Linux, Suse Linux, Ubuntu, Cent OS	
Certifications/Compliance (Virtualization/Cloud Platform)	VM ware, PROXMOX (Debian Hypervisor)	
Features		
Management Features-1	Remoter power on/ Shutdown of server, Remote Management of Server over LAN & WAN with SSL encryption through gigabit management port, should have virtual Media support with all required licenses., Remote KVM, Server Health Logging, Out of Band Management, E-Mail Notification of incident.	
Management Features-2	Management of multiple Servers from single console with single source of truth for multiple sites	
Security Features-1	Secure Boot (Firmware and Bios Level Security), Provision to lock the system on breach, Hardware root of trust/Dual Root of Trust, Server should provide policy-based security, Server should provide server intrusion detection,	

	“Malicious Code Free design" (to be certified by OEM)	
Security Features-2	Provision for Cryptographic firmware updates	
Server scalability to be achieved within the box & without adding nodes	NA	
support for high availability clustering and virtualization	No	
Generic		
Redundant Power Supply	Yes	
Hot Swappable (Redundant Power Supply)	Yes	
Power Supply Efficiency	Platinum	
Redundant Fan	Yes	
Hot Swappable (Redundant Fan)	Yes	
Server Main Supply	230 +/- 10% Vac	
Benchmark		
SPEC int_rate_base 2017 for the product (must be available on SPEC dot ORG before evaluation)	303	
SPEC fp_rate_2017 for the product (must be available on SPEC dot ORG before	226	

evaluation)		
SPEC int_speed_base 2017 for the product (must be available on SPEC dot ORG before evaluation)	10.1	
SPEC fp_speed_2017 for the product (must be available on SPEC dot ORG before evaluation)	137	
Miscellaneous		
Maximum power consumption of the system (Watts)	800	
BIS Registration under CRS of MeitY	Yes	
Other Certifications Available	UL	
RoHS Compliance	Yes (Certificate needs to be submitted)	
Scope Of Supply		
Installation and Commissioning shall be included in the scope of supply	Yes	
Warranty		
On Site OEM Warranty (Including all parts accessories and licenses associated with the server)with NBD Parts Replacement (Years)	5	
The OEM should be in the Gartner leader's magic quadrant for Enterprise servers.	For 3 consecutive years	

Terms and Conditions

- 1) OEM Must have 24*7*365 days onsite/telephonic support system facility, response time against any complain/query should not beyond 4 hours, resolution time for any nature of problem related to server should not beyond 24 hours. Toll free number for above kind of support must be submitted. Each and every component of the supplied server, security keys, accessories, and licenses should have an on-site comprehensive 24x7x365 days warranty for the period of 60 months No parts, accessories, licenses of the systems should be excluded from such warranty.
- 2) Bidder must submit proper technical data sheet along with compliance sheet against mentioned specification in the bid. The same technical specs must be available on OEM website.
- 3) If require vendor should give functional demo of the server onsite with their own cost.
- 4) Mean time between failures (MTBF): If during the warranty period, server fails four or more occasions in a period of less than three months or six times in less than twelve months, it shall be replaced by equivalent or better configured and robust new server by the Bidder/OEM at no cost to the IRCC, IIT Bombay.
- 5) Along with the technical bid, the OEM/Bidder should submit a letter of commitment for 60 months from the installation date, with respect to Hardware, Software, licenses and Firmware support, and uptime commitment. The bid will be rejected if they are not accompanied by the letter from the OEM. The 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,

Uptime (%) = ((Sum of total hours during the month - Sum of downtime hours during the month) X 100) / Sum of total hours during the month
Total hours during the month = No. of working days x 24 hours

- 6) No new information will be accepted from the bidder after the submission of the bids. However, IIT Bombay may ask for clarifications, if required, on submitted information in order to evaluate the proposal. The bidder should respond to such a clarification request within the specified time.

- 7) The quoted server 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, IRCC IITB may invalidate the bid and disqualify the bidder.
- 8) 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 OEM's original list of deliverables, the OEM shall supply such items to ensure the completeness of the configuration at no extra cost.
- 9) 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 asked by the purchaser with page numbers. Failure to do the same will invalidate the bid and result in disqualification.
- 10) Bidder cannot outsource any work mentioned in the scope of work for this tender to a third party.
- 11) The bidder has to give an undertaking of acceptance of all terms & conditions along with the technical bid on the company's letterhead. Failure to do the same will invalidate the bid and result in disqualification.
- 12) Server should support feature for improved workload throughput for applications sensitive to frequency fluctuations. This feature should allow processor operations in turbo mode without the frequency fluctuations associated with running in turbo mode. Server should support workload Profiles for simple performance optimization.
- 13) Proposed server should be benchmarked for Powers on Self-Test, Burn-In/stress test performance in respect of increased workload in all major components of server, Relevant Document should be submitted.
- 14) The Bidder 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 warranty period of 60 months.
- 15) The bidder 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 bidder fails to provide the support, OEM has to provide technical support for the warranty period mentioned in the contract. Bidder has to attach a confirmation letter from the OEM.
- 16) The said warranty should not be considered violated if the **IIT Bombay** buys or install any other compatible supplemental hardware/Software from a third party and installs it in the machines with an intimation to the Bidder. However, the warranty will not apply to such additional hardware items installed.

17) For any delay in delivery of replacement of faulty parts during the inspection, commissioning of the systems, or for acceptance tests/checks, IIT Bombay have right to charge a penalty.

18) The OEM/Bidder shall depute an experienced engineer as and when required to visit the site and assist the staff during the failure and ensure the system's proper functioning.

19) The Root Cause Analysis (RCA) faced for any issues related to the system should be provided by the OEM within 3 Business Days.

20) If any component supplied by the Vendor/OEM is inoperative, which renders the entire system useless, then it will be treated as system downtime.

21) The OEM/Bidder should be well equipped and located to honor 4 hours of response time in case of failures.

22) Bidder should submit all Industry Standard Compliance reports which are most relevant in respect of proposed server now a days as follows:

- a) PXE Support
- b) Energy Star
- c) ASHRAE A3/A4
- d) Redfish API
- e) SNMPv3
- f) TLS 1.2
- g) DMTF
- h) ACPI 6.1, PCIe 3.0, UEFI 2.6, SMBIOS

Bidder/OEM should submit above compliance reports or relevant URL with the bid document for proposed server.

23) The Bidder has to ensure that the proposed equipment/components of entire Server must not be declared “End of Life” or “End of Support” in the next 7 years from the date of purchase. If the supplied equipment is declared End of Support/End of Life during the warranty period of 5 years, the bidder/OEM has to replace the equipment having equivalent or higher configurations without any additional cost to the IRCC, IIT Bombay.

24) OEM Must have more than **15 years** of experience in Enterprise Servers in Indian/International market, preferable supply and installation in Government Educational institutions, relevant document should submit.

25) Bidder/OEM must have service center in Mumbai Region, address of the service center must be submitted.

26) The OEM should be in the Gartner leader's magic quadrant for Enterprise Servers, at least for three consecutive years, URLs of OEM and Gartner website should be provided or relevant document should be submitted in OEM Letterhead.

27) 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.

28) Bidder have to ensure successful installation and commissioning of entire Server Setup supplied by them.