



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

PR No. 1000029718 (Rfx No. 6100001264)

Detailed Technical Specifications for 25G Network Enterprise Servers

Specifications per server:

Quantity: 3 Servers

Sr. No.	Specifications	Quantity per server
1.	Processor: AMD Epyc/Intel XEON latest generation CPU With at least 48 Cores, 256M L3 Cache, 2.3 GHz base clock, PCIe 4.0x128 per CPU.	2
2.	Motherboard: 2 socket server board (compatible with item 1) with the following characteristics: <ul style="list-style-type: none">● Total 32 DIMM slots.● Memory is upgradable up to 2TB per CPU with RDIMM.● Hot-swap support for SATA, SAS, SSD, and NVMe.● Minimum of 2 numbers of internal usb 3.1 ports.● At least Primary and Secondary risers installed.● Minimum 8 PCI-Express 4.0 slots, out of which at least two x16 PCIe slots and at least two x8 PCIe slots.● Must have an integrated server management system.● support upto 8 single wide GPUs	1
3.	Memory: <ul style="list-style-type: none">● Total 512GB Memory: 128GB Quad Rank DDR4-3200 LRDIMM Memory (i.e. 2 memory modules for each CPU arranged in such a way that maximum 1 DIMMS will be connected per channel)● Memory blanks for remaining slots.	128 GB x 4 LRDIMMS 28
4.	Disks: 1.92TB Enterprise series SAS 12Gbps SSD with DWPD=5 or mixed load	3
5.	M.2 Storage for OS: 400GB usable 6Gbps M.2 in RAID 1 configuration or equivalent.	1
6.	Raid Support: On-board raid support for raid 0, 1, 10, 5, 6, 50, 60 from day one with 24Gbps port speed and 8GB cache with support for Secure encryption/data at rest Encryption. Also, the controller must support Mixed Mode which combines RAID and HBA mode operation simultaneously and support 6G SATA, 6G/12G/24G SAS, Gen 3/Gen4 NVMe. The disk must be directly visible to OS if not included in RAID. RAID controller should support standard drivers coming in Debian, Centos/RHEL, Proxmox.	1
7.	Network Cards: Dual Port 25G (capable of auto-negotiation to 10G) Ethernet Adapter with at least the following features and either from Intel, Mellanox or Xillinx only. <ul style="list-style-type: none">● must be a Converged Network Adapter.● Should support RDMA.● Should meet the IEEE 802.3 standard.	2

	<ul style="list-style-type: none"> ● 802.1q VLAN tagging support. ● The adapter should deliver 50 Gbps bi-directional Ethernet transfer rate per port. ● The adapter should support IPv6, Jumbo frame, PXE, WOL. ● The adapter should support Single-Root I/O Virtualization (SR-IOV). ● The adapter should support standard drivers that come in Debian, Centos/RHEL, Proxmox operating system. 	
8.	<p>SFP: Compatible SFP28 SR bi-directional transceiver module with the item mentioned in point no. 7 with the following feature and from the same OEM.</p> <ul style="list-style-type: none"> ● Connectivity with standard, multi-mode LC connectors. ● Compatible in environments with Arista, Cisco, Dell, Intel, Juniper, Mellanox, Extreme, and more. ● Compatible with existing SFP28 SR, and bi-directional transceivers already in your configuration. ● Support industrial temperatures (-40C to +85C). 	1 per Ethernet port
9.	<p>Front Panel IO:</p> <ul style="list-style-type: none"> ● USB Ports. ● VGA / HDMI. ● DVD Writer. ● 8 SFF Drive Bay. 	2 1 1 1
10.	<p>Back Panel IO:</p> <ul style="list-style-type: none"> ● Onboard/FlexLOM based 10G Base-T Ethernet ports. ● Dedicated Management port. ● USB ports 2.0 and ● USB ports 3.1 ● VGA / HDMI ● Serial port 	4 1 2 (at least 1) 2 (at least 1) 1 1
11.	<p>Server Management:</p> <ul style="list-style-type: none"> ● The server Management system must be based on either of ILO5, IDRAC 9, XCC, IMC system strictly. ● The server should have a dedicated 1Gbps server management port. ● Remote management should support browser-based remote consoles, virtual power, and virtual media based on HTML5 and java free systems. ● Browsers like Mozilla Firefox and Google Chrome must be supported for the full functionality of the on-board management system. ● The management system should have a dashboard view to view the manages resources to assess the overall health of all the servers. ● The remote console can be shared among at least 3 users simultaneously during operating with a server based on the role assigned to them (role based access). ● Users must be able to install Operating systems remotely using the on-board management system by mounting ISO/USB from their own machine. (perpetual license must be included, if required) ● The on-board management should support Zero Touch Provisioning (ZTP) of a bare metal server. ● The on-board management should support group power control, group virtual media, group firmware upgrade without installation of any software or agent, and via a dedicated management port mentioned above. ● Policy template for deployment of single policy to multiple Servers simultaneously. ● Server utilization statistics collection (including firmware updates and diagnostic tools) ● Solution should be open and programmable providing Rest API, SDK for programming languages like Python, power shell scripts etc. ● Should have customizable dashboard to show overall 	1

	<p>faults/health/inventory for all managed infrastructure the solution should provide option to create unique dashboards for individual users. The user should be flexibility to select name for dashboards and widgets (viz. health, utilization etc)</p> <ul style="list-style-type: none"> ● Must support monitoring using SNMP v2 and v3. ● The possibility to integrate with LDAP/SAML2/Oauth2 based authentication/authorization will be an added advantage in technical evaluation. ● The on-board management system should be capable of sending email alerts. The alert should also include SSD wear. ● The on-board management should support NTP synchronization. ● Offered servers shall have a provision for cloud enabled monitoring and analytics engine for proactive management from the same OEM and with features like a. Providing Firmware upgrade and patch upgrade recommendations proactively, b. Providing power and support entitlement status, c. Recommendations to eliminate performance bottlenecks and critical events, etc. 	
12.	<p>Power Supply:</p> <ul style="list-style-type: none"> ● RPS (redundant power supply) & hot-swappable SMPS with minimum of 94% efficiency should be able to supply power for a maximum capacity of RAM, HDD, etc. ● Power Cord, IEC Male to IEC Female connectors 230V C13 to C14 connectors with 3 meters in length. 	1 2
13.	<p>Server Chassis:</p> <ul style="list-style-type: none"> ● 2U Rack-mountable chassis. ● Hot-swappable Redundant High-Performance fans ● Compatible easy to install Rail Kit with locking system. ● Cable Management Arm compatible with rail kit. ● Maximum 28 SFF drives should be supported in server chassis. 	1 6 1 1
14.	<p>Server Security:</p> <ul style="list-style-type: none"> ● 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 server intrusion detection. ● Provision for Cryptographic firmware updates. ● Server should be RoHS complaint. ● Capability to stop execution of Application/Hypervisor/ Operating System on predefined security breach ● Secure/Automatic BIOS recovery ● System should support FIPS/Common criteria compliance. ● Network Card secure firmware boot in case of any security breach system should provide the lock down feature ● For firmware security, system should support remote management creating a fingerprint in the silicon, preventing servers from booting up unless the firmware matches the fingerprint. This feature should be immutable. ● Should maintain repository for firmware and drivers recipes to aid rollback or patching of compromised firmware. Should also store Factory Recovery recipe preloaded to rollback to factory tested secured firmware 	
15.	<p>Temperature Range: The server should work efficiently in the temperature range of 10°C to 35°C.</p>	-NA-