

प्रसार भारती / Prasar Bharati
प्रसार भारती सचिवालय / Prasar Bharati Secretariat
सूचना एवं प्रौद्योगिकी प्रभाग / IT Division
आकाशवाणी भवन, संसद मार्ग / Akashvani Bhawan, Parliament Street
नई दिल्ली-११०००१ / New Delhi-110001

No. J-16024/102/2024-IT INFRA

Date: 10th February, 2025

Subject: Inviting Industry Feedback on Draft Technical Specification for SITC of GPU Servers and associated equipment in Prasar Bharati.

Prasar Bharati, India's Public Service Broadcaster, intends to invite bids for SITC of GPU Servers and Associated equipment to be set up at Data Center, NBH, New Delhi through GeM Portal. Draft of technical specifications are hereby published to invite Industry feedback from prospective Bidders/OEMs or their authorized dealers/sellers. Draft Technical Specification as for the SITC are attached.

Budgetary quote for the SITC of GPU Servers and Associated equipment is mandatorily required to be submitted alongwith the feedback.

The response alongwith the feedback on technical specifications as well as budgetary quote for the project may be furnished by 25.02.2025 on the following eMail ID :-

ddgit@prasarbharati.gov.in



(Ram Bir Singh)
Assistant Engineer(IT)

To,
Director (PBNS) for publishing on Prasar Bharati Corporate Website.



TECHNICAL SPECIFICATION DOCUMENT

For

The Supply, Installation, Testing, and Commissioning (SITC) of GPU Servers and its Associated Equipments

Date: 15/01/2025

Prasar Bharati (India's Public service Broadcaster) invites bids through GeM Portal for **SITC of GPU Servers and Associated Equipments** to be set up at Datacenter, NBH, New Delhi .

1. Scope of Work:

The selected bidder is required to complete supply, installation, testing and commissioning of the **GPU Servers and associated equipment**, as per the scope and Bill of Material given at Sr. No.4 of this document. The scope also includes all associated hardware, software licenses, configuration, installation, training and a **three-year onsite warranty**.

2. Eligibility Criteria:

Sl No.	Criteria	Description	Required Documentary proof
1	All commercials of the bid such as Company Registration, Average Annual Turnover of the Bidder/OEM, work experience etc	As per the standard terms and conditions on GEM.	As per the standard terms and conditions on GEM.
2	Non – Blacklisting Certificate	The bidder should not have been blacklisted /debarred by any Governmental / Non – Governmental Organisation in India in last three years.	Self-Declaration certificate is to be attached.

Sl No.	Criteria	Description	Required Documentary proof
3.	Certification	The Bidder should have valid ISO 9001:2005 and ISO 27001.	Copies of the certificate to be attached.

3. Technical Evaluation

1. The tender shall be technical evaluated on the basis of eligibility of the bidder.
2. Technical Evaluation shall be done on the basis of compliance statement, customer reference certificates, technical literature related to quoted products.
3. If required, bidder may be asked to arrange a demonstration of the offered items.
4. Documents required for Technical Evaluation:
 - a. A point by point compliance statement duly signed by the bidder in respect of all the points laid down in the specifications for all the equipment/ items shall be submitted along with the bid by the bidder.
 - b. One set of Maintenance/operational manuals of each hardware from OEM shall be provided by the bidder.
 - c. Detailed Literature giving complete details of features and performance data on non-returnable basis to facilitate the technical evaluation.
 - d. Back to Back Support commitment from OEM for Sr No. 1 & 2 of BOM for the period of three years.
 - e. A copy of un-priced Bill of Material (BOM) indicating make, model no., and complete configuration details of offered item shall be quoted clearly.

4. Warranty & Maintenance

1. All items shall be warranted for trouble free operation for a minimum period of 3 years from the date of commissioning.
2. In case of failure of any equipment or its part/module, the tenderer will send a replacement. The faulty part shall be sent back to tenderer after rectification of fault.
3. However, if it is not possible to rectify the fault remotely or by replacement of part/module, onsite support for replacement/servicing/debugging of software /reinstallation/reconfiguring of software etc. shall be provided by tenderer free of cost.
4. No separate charges will be paid for the visit of engineers for attending to faults and repairs or supply of spare parts.

5. Delivery Period

1. All items listed in BOM at Sr. No. 6 including installation shall be supplied within 60 days.

6. Bill of Material

Details of Items:

S.No.	Item	Quantity and Unit of Measurement
1.	GPU SERVER	2 Nos
2.	Data Center Grade Switches	2 Nos
3.	Fiber Patch Cords- SM(Single Mode)	10Nos
4.	SFP Modules SM - 10G	48Nos
5.	Monitor, Keyboard, and Mouse(1 each)	1 Set

7. The Detailed Technical Specifications are as below:

Item wise detailed requirements and technical specifications as per BOM are given below:

ItemNo1: GPU SERVER

Item	Technical Specification
Form Factor	2U Rack Mountable
Processor(s)	1 x AMD EPYC™ 9754, 128Cores , 2.25GHz, 256 Threads ,256MB, 360W or equivalent
Published Spec rating of processor	SPEC int_rate_base 2017 for the product (must be available on SPEC.ORG before evaluation)– 1650 (minimum) SPEC fp_rate_base 2017 for the product (must be available on SPEC.ORG before evaluation)– 1250 (minimum) Benchmark Report must be attached
NVMe Support	At least Two or more drive /Slots must have native support for NVMe drives.
Memory configured	(Total 256 GB) 8 x 32 GB DDR5 memory by using 32GB per DIMM slots. The bidder must provide above memory using RDIMM operating at 4800MT/s. At least 12DIMM slots or higher on board and support up to 2TB Memory in future.
GPU Card	2 x Nvidia L4 Ada dedicated 24GB GPU
Disks Bays	Server should support controller which combines RAID and HBA mode operation simultaneously : Must support mix-and-match SAS, SATA, and NVMe drives to the same controller, supporting RAID 0, 1, 5, 6, 10
RAID Controller	Controller should support RAID 0, 1, 5, 6, 10
Disks configured	Support Upto 8 SFF SAS/SSD/NVMe , populated with 1. 2 x 960GB TB SSD drives or higher 2. 4 x 2.4TB SAS HDD drive 10K RPM or greater.
I/O slots	Server should support upto six PCI-Express 5.0x16 slots.

Scheduling Utility	Licensed based unified system management/monitoring utility with JOB scheduling capabilities on single node. OEM Commercial S/W utility only be acceptable. Detailed datasheet of same OEM should be submitted with bid documents.
Ethernet ports and other ports	2 x 1Gbps RJ-45 Ethernet Ports, 1 x VGA, 4 x USB 3.0 Ports, 1 TPM, 1 COM or higher. 2 x 10Gbps SFP+ Ports
Operating System	Operating System Linux 64 bit preloaded from day one.
Operating System Support	Windows Server. Red Hat Enterprise Linux(RHEL). SUSE Linux Enterprise Server. VMware ESXI and virtualization support to integrate with existing system.
Power Supply	Minimum 1200W (N+1) or redundant Power Supplies with minimum 85% efficiency.
Cooling Subsystem	Redundant hot plug system fans along with monitoring of cooling sub system of server through metering utility, with speed control,
Bundled Software	Commercial Software Utility with precompiled frameworks repository python, tensor flow, Theano and torch for GPU and CPU both, for ML /DL codes /applications. Datasheet of software / utility must be upload with bid.
System Management Utility	IPMI Management Port with Activated License. Out of band Management Capabilities, Stack with a full IPMI implementation, HardwareHealth monitor, Remote power control Etc. Product datasheet/manual must confirm the compliance, Data sheet must be attached. Management software should support integration with popular virtualization platform management software like Vmware vCenter & vRealize Operations. Shall have dashboard for firmware baselines while performing minimum required firmware checks and highlighting out-of-compliance devices for updates with the selected firmware baseline. The Server Management Software shall be of the same brand as of the server supplier.
System Security	Root-of-Trust, Secure Boot, Malicious Code Free Design, Network card secure firmware boot, Detail mentioned document must be submitted with technical bid.
Warranty	Minimum 3 years comprehensive onsite warranty.
Local support	OEM must have their own registered Service and support centre in India. Details must be listed on OEM Website.
Standard Compliance	OEM /bidder must not be banned or debarred by any govt organization for >3 months during last 5 years.
	OEM must be ISO 27001, Compliance /Registered, all Certificate copy must be attached with Bid.
	OEM must have Bureau of Indian Standards certification for workstation product category. Certification copy must be attached with bid documents.
OEM Authorization	BID Specific OEM Authorization Certificate and compliance of specification on OEM letterhead should be submitted with bid.

Item2: DataCenter Grade Switches

Architecture & Port Density	1. The Switch shall have 24x 1G/10G SFP+ Ports and 2x 40G/100G QSFP+ Port from Day 1. All ports shall be fully populated with 24x 10G SM SFP+ and 2x 40G transceivers. Also each switch should be supplied with 40G DAC cable. Transceivers and DAC cable should be from the same OEM as switch.
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	<ol style="list-style-type: none"> 2. The Switch shall support Virtual Switching System (VSS) or Virtual Chassis (VC) or equivalent Switch Clustering/Stacking feature 12 Switches or More, where the Switch Clustering feature shall combine multiple switches into a single network element. Switch should support aggregated stacking bandwidth of up to 2.4Tbps.
Performance	<ol style="list-style-type: none"> 1. Switching Bandwidth: The Switch shall provide Switch Fabric Bandwidth Capacity of 1080 Gbps or more. 2. Forwarding Capacity: The Switch shall provide Packet Forwarding Capacity of 803 MPPS or more. 3. The Switch should support long distance stacking of up to 10KMs.
Layer 2 features: it shall support from day 1	<ol style="list-style-type: none"> 1. Shall support 4K vlan Id with Minimum 1000 active VLANs. 2. Shall support 100K MAC addresses or more. 3. The Switch shall support centralized VLAN Management, VLANs created on the core switch should be propagated automatically. 4. IP multicast snooping IGMP v1, v2, v3. 5. Jumbo Frames (up to 9216 bytes)
Layer 3 features: it shall support from day 1	<ol style="list-style-type: none"> 1. Basic IPv4 and IPv6 Static Routing, ECMP, Host Routes, Virtual Interfaces, Routed Interfaces, Route Only and Routing between directly connected subnets from Day 1. 2. IPv4 & IPv6 Routing protocols & multicast routing available from day 1. such as RIP v1 or v2, RIPng, OSPFv2, OSPFv3, BGP4, BGP4+, Multi-VRF, VRRP for both IPV4 and IPV6 protocol ,VRRPv2 & VRRPv3 ,VRRP-E (IPv4, IPv6),GRE. 3. PIM-SSM, PIM Sparse, PIM Dense, PIM Anycast RP, and PIM passive IPv4 multicast routing. 4. PIM-SSM, PIM Sparse, PIM Anycast RP, MSDP and PIM6-SM Snooping IPv6 multicast routing
Security features	<ol style="list-style-type: none"> 1. RADIUS, TACACS/TACACS+ and username/password for Authentication, Authorization and Accounting (AAA) with Local User Accounts and Local User Passwords. 2. Secure communications to the management interface and system through SSL, Secure Shell (SSHv2), Secure Copy and SNMPv3. 3. IP Source Guard, DHCP snooping, DHCPv4, DHCPv6 and Dynamic ARP Inspection. 4. IPv4 and IPv6 ACLs: with up to 8000 rules / ACL per system. 5. Flexible Authentication with 802.1x Authentication and MAC Authentication 6. Switch shall support MACsec. 7. Switch shall support RADSEC (RFC 6614). 8. Switch shall support Protection against Denial of Service (DoS) attacks Authentication, Authorization, and Accounting (AAA). 9. It shall support Integrated Standard based Command Line Interface (CLI), Telnet, TFTP, HTTP access to switch for management/monitoring. 10. It shall also support NetFlow or sFlow or equivalent. 11. The Switch shall support Redundant power supply. 12. The switch shall have 4Gb DRAM and 16Gb FLASH with 4Mb Packet buffer.
Manageability	<ol style="list-style-type: none"> 1. Shall support manageability using CLI and web/GUI based management. 2. It shall support Integrated Standard based Command Line Interface (CLI), Telnet, TFTP, HTTP access to switch for management/monitoring. 3. It shall also support NetFlow or sFlow or equivalent.

	<ol style="list-style-type: none"> The Switch shall support Redundant power supply. The switch shall have 4Gb DRAM and 16Gb FLASH with 4Mb Packet buffer
Physical Attributes, Memory, Power Supply and Fans	<ol style="list-style-type: none"> The Switch shall be compatible with 19" Universal rack. The Switch shall support redundant power supply. The Switch shall have 4Gb DRAM and 16Gb FLASH with 4Mb Packet buffer
Mandatory Compliance	<ol style="list-style-type: none"> Switch shall conform to IS 13252-1 or IEC 60950-1 or IEC: 61368-1 Annex-A for Safety requirements of Information Technology Equipment as per TEC Standard. TEC certificate to be furnished along with the bid. OEM shall have ISO 9001:2015 certification. All switches and Transceivers shall be from the same OEM for better interoperability, management and support. Switch / Switch's Operating System should be Common Criteria Certification(India). Switch shall be MTCTE (Mandatory Testing & Certification Of Telecommunication Equipment) Certified and Certificate issued by TEC (Telecommunication Engineering Center), Department of Telecommunications must be submitted. The Switching System shall come with 3 years Hardware warranty with advance hardware replacement and 3 years OEM TAC support.

Item3 : Fiber Patch Cords- SM(Single Mode)

1	Cable Type 0.9mm buffer
2	Corning Single-Mode OS2 with LSZH Sheath
3	Connector: Zirconia ceramic ferrule
4	Pre-radiuses and pre-polished ferrule
5	Type—SC-LC MM Duplex
6	Length -- 1 Mtr

Item 4 : SFP Modules(Transceivers) Single Mode(SM) - 10G

1	SFP should support Single-Mode Fiber 1310nm.
2	SFP should support Single-Mode Fiber Cable
3	SFP should be 802.3ae compliant and shall support a distance up to 10 Kilometers
4	SFP should have LC Connector
5	SFP should be protocol independent & Hot-Swappable
6	SFP should be ROHS 5 & 6 Compliant
7	SFP should support Digital Optical Monitoring
8	SFP should support operating temperature from (0° C to 70°C)
9	Warranty-3 Years

Item5: Monitor, Keyboard, and Mouse

Monitor	Display Size (Diagonal)	60.45 cm (23.8)
	Aspect Ratio	16:9
	Resolution	FHD (1920 x 1080)
	Resolutions Supported	1024 x 768; 1280 x 1024; 1280 x 720; 1280 x 800; 1440 x 900; 1600 x 900; 1680 x 1050; 1920 x 1080; 640 x 480; 720 x 400; 800 x 600
	Display Scan Frequency (Vertical)	50-60 Hz
	Input voltage	100 to 240 VAC
Keyboard	Connectivity	Wired (USB-A) or Wireless (USB receiver or Bluetooth)
	Form Factor	Full-size keyboard (includes a number pad) for general office use
Mouse	Connectivity	Wired (USB-A) or Wireless (USB receiver, Bluetooth).
	Sensor Type	Optical or Laser
	Buttons	3 buttons (left-click, right-click, and scroll wheel).
Warranty		Minimum 3 year Warranty for all 3 items i.e Keyboard, Mouse and Monitor.