



भारतीय प्रौद्योगिकी संस्थान इन्दौर

खण्डवा रोड, सिमरोल, इन्दौर - 453 552, भारत

Indian Institute of Technology Indore

• Khandwa Road, Simrol, Indore - 453 552, India

www.iiti.ac.in

IIT Indore

NIT No.: IITI(MM)/CH(PRJ)/1/1A/219/BP/2020-21

PREBID REPORT

The Query raised by the undermentioned firms through mail for Pre-bid discussion and presentation for **High Performance Computing Cluster (CPU-GPU Based)**, Tender ID: 2021_IITI_614564_1

The report of the meeting is as below:

Sl. No.	Reference Document	Query raised by firms	Query/ Clarification/ Deviation Sought	Response from IITI
Master Node				
01.	Technical Specification Chapter 6 Technical Bid	M/s. Netweb Technologies India Pvt. Ltd.	<u>Point: - Processor</u> We kindly request you to clarify on submission of multiple options as vendors have been asked to quote with 2 different processor models in both Master Node and Compute Nodes however in the Price Bid BoQ (Excel Sheet), we are getting the option of submitting single price only.	Vendors can quote machines with the following minimum specifications: (Atleast 2.90 GHz, atleast 22 MB Cache, at least 24 cores per node)
02.	Technical Specification Chapter 6 Technical Bid		<u>Point: - Chipset</u> The mentioned processors Intel 6226R and Intel 6136 support C621 Chipset. So, we kindly allow us to quote Intel C621 Chipset.	Intel C620 series or OEM Standard
03	Technical Specification Chapter 6 Technical Bid		<u>Point: - Graphics</u> Currently you have asked for AST ASPEED2600 BMC which is not available yet. Kindly allow AST ASPEED2500 BMC to be quoted as Graphics	You can quote AST ASPEED2600-2500 BMC Graphics or updated version (you can also quote other certified graphics cards)

प्रशासनिक अधिकारी
Administrative Officer
भारतीय प्रौद्योगिकी संस्थान इन्दौर
Indian Institute of Technology Indore

04	Technical Specification Chapter 6 Technical Bid		Point: - CPU-GPU Compute Node You have asked for 200TFlops Compute Power in Double Precision from the GPU which is not possible with any single GPU. The maximum Double Precision performance as per Nvidia for the asking GPU Nvidia Tesla V100S is 8.2 TFlops. We request you to kindly amend this point accordingly.	agree with V100S (8.2 TFlops)
05	Technical Specification Chapter 6 Technical Bid		Point: - Total Compute Power We humbly request to clarify this below point.	Total compute power means we would like to perform some test calculations to compare CPU vs GPU performance. Adding GPC means we will get 25% more performance compared to CPU
06	Technical Specification Chapter 6 Technical Bid		Point: - USB Ports / VGA & HDMI Ports We request you to relax/remove HDMI Port since it will not be useful for Cluster environment. Also you have mentioned 40 Gbps Interconnect. Kindly help to clarify on the same.	Agree with VGA port. Please quote Interconnect IB-EDR (100 Gbps Interconnect) with IB-EDR (100 Gbps) Cable of appropriate length. We have an existing IB-EDR (100 Gbps) switch within our corrigendum.
Compute Node				
07	Technical Specification Chapter 6 Technical Bid	M/s. Netweb Technologies India Pvt. Ltd.	Point: - Processor We kindly request you to clarify on submission of multiple options as vendors have been asked to quote with 2 different processor models in both Master Node and Compute Nodes however in the Price Bid BoQ (Excel Sheet), we are getting the option of submitting single price only.	Vendor can quote only machines with the following minimum specifications: (Atleast 2.90 GHz, atleast 22-MB Cache, atleast 24 cores per node)
08	Technical Specification Chapter 6 Technical Bid		Point: - Chipset The mentioned processors Intel 6226R and Intel 6136 support C621 Chipset. So, we kindly allow us to quote Intel C621 Chipset.	Intel C620 series or OEM Standard



09	<p>Technical Specification</p> <p>Chapter 6 Technical Bid</p>		<p>Point: - Memory You have asked for 12x 16 GB (Total 192 GB) in Compute Nodes along with 8 - 10 GB / Core. This will be sufficed if we quote processor as 2x 6136 Processor. But with 2x 6226R we have total 32 cores and 192 GB Memory will be distributed as 6 GB/core only. For 8 - 10 GB/core we need to quote min. 256 GB RAM. So we request you to clarify on this point.</p>	<p>Vendors need to quote atleast 8-GB per core</p>
10	<p>Technical Specification</p> <p>Chapter 6 Technical Bid</p>		<p>Point: - Disk (Disk Capacity) You have asked for Hardware RAID Controller with single 1 TB SATA Drive in Compute Nodes. Since only single hard disk is being populated in the Compute Node, we request you to relax/remove this point.</p>	<p>RAID provides data redundancy and/or improves hard disk drive performance. So, we need this configuration in each node</p>
11	<p>Technical Specification</p> <p>Chapter 6 Technical Bid</p>		<p>Point: - Graphics Currently you have asked for AST ASPEED2600 BMC which is not available yet. Kindly allow AST ASPEED2500 BMC to be quoted as Graphics</p>	<p>You can quote AST ASPEED2600-2500 BMC Graphics or updated version (you can also quote other certified graphics cards)</p>
12	<p>Technical Specification</p> <p>Chapter 6 Technical Bid</p>	<p>M/s. Netweb Technologies India Pvt. Ltd</p>	<p>Point: - CPU-GPU Compute Node You have asked for 200TFlops Compute Power in Double Precision from the GPU which is not possible with any single GPU. The maximum Double Precision performance as per Nvidia for the asking GPU Nvidia Tesla V100S is 8.2 TFlops. We request you to kindly amend this point accordingly.</p>	<p>agree with V100S (8.2 TFlops) card with at least 32 GB main memory</p>
13	<p>Technical Specification</p> <p>Chapter 6 Technical Bid</p>		<p>Point: - Total Compute Power We humbly request to clarify this below point.</p>	<p>Total compute power means we would like to perform some test calculations to compare CPU vs GPU performance. Adding GPC means we will get 25% more performance compared to CPU</p>

14	Technical Specification Chapter 6 Technical Bid		Point: - USB Ports / VGA & HDMI Ports We request you to relax/remove HDMI Port since it will not be useful for Cluster environment. Also you have mentioned 40 Gbps Interconnect. Kindly help to clarify on the same.	Agree with VGA port. Please quote Interconnect IB-EDR (100 Gbps Interconnect) with IB-EDR (100 Gbps) Cable of appropriate length. We have an existing IB-EDR (100 Gbps) switch within our corrigendum.
15	Technical Specification Chapter 6 Technical Bid		Point: - Operating Systems Kindly clarify if you need TPM Certified servers or we have to quote with TPM.	Vendors need to quote TPM certified servers

Other Accessories

16	Technical Specification Chapter 6 Technical Bid	M/s. Netweb Technologies India Pvt. Ltd	Point: - For Rack You have not asked for Server Rack however you have mentioned PDU, Cables and Accessories. We request you to clarify on this point.	Rack is not required. But other accessories will be required during server assembling (like PDU, Cables and other accessories) as per requirement
----	---	---	---	--

Software's and Installations

17	Technical Specification Chapter 6 Technical Bid	M/s. Netweb Technologies India Pvt. Ltd	Point: - Single User License Currently Intel Parallel Studio has been replaced by Intel OneAPI Toolkit which comes in two options Intel OneAPI Base Toolkit and Intel OneAPI HPC Toolkit. Kindly let us know which version of the toolkit is required at your end along with the support period.	Intel Parallel Studio or OneAPI HPC toolkit for installation
----	---	---	--	--

Compute Node

18	Technical Specification Chapter 6 Technical Bid		Point: -Processor (i) 2 x Intel® Xeon® Gold 6226R CPU @ 2.90 GHz, 22 MB Cache (total: 32 cores) Qty:4(Total 128 Cores) and (ii) 2 x Intel® Xeon® Gold 6136 CPU @ 3.0 GHz, 24.75 MB Cache (total: 24 cores) Qty:4(Total 128 Cores)	Vendors can quote machines with the following minimum specifications: (Atleast 2.90 GHz, 22 MB Cache (atleast 24 cores per node)
19	Technical Specification Chapter 6 Technical Bid		Point: -Chipset Intel C622 chipset or better(C624)	Intel C620 series or OEM Standard



20	Technical Specification Chapter 6 Technical Bid	M/s. Locuz Enterprise Solutions Ltd.	Point: -RAM (12 x 16 GB) PC4-21300 DDR4-2666(required 8-10 GB/core)	Vendors need to quote min 8- GB per core
21	Technical Specification Chapter 6 Technical Bid		Point: -Disk 1 TB SATA per node, 7200 RPM disk, hardware RAID controller with hardware RAID 0,1,5,6,10	RAID provides data redundancy and/or improves hard disk drive performance. So, we need this configuration in each node
22	Technical Specification Chapter 6 Technical Bid		Point: -Graphics AST 2600 Remote Management Server processor, The 7th generation of ASPEED Base Board Management Controller	Yes
23	Technical Specification Chapter 6 Technical Bid		Point: -Accelerator 1 x Nvidia Tesla V100S (32 GB) PCIe Passive Cooling Board	Yes
24	Technical Specification Chapter 6 Technical Bid		Point: -CPU-GPU compute node 200 Tflops of compute power in double precision; 1 GPU per node. Nvidia Tesla V100S (32 GB) card with at least 32 GB main memory	agree with V100S (8.2 TFlops) card with at least 32 GB main memory
25	Technical Specification Chapter 6 Technical Bid		Point: -Total Compute Power PCPU+200 Tflops of GPU Installation. The overall system must support expansion to 25% more CPU compute power. For additional expansion in future, the vendor must offer at the bid price or below.	Total compute power means we would like to perform some test calculations to compare CPU vs GPU performance. Adding GPC means we will get 25% more performance compared to CPU.
26	Technical Specification Chapter 6 Technical Bid		Point: -Remote Management Out of band remote management over network using dedicated Ethernet port. Capabilities should include KVM over IP, power on, off & reset virtual media with appropriate perpetual licenses.	Required

27	Technical Specification Chapter 6 Technical Bid	M/s. Locuz Enterprise Solutions Ltd.	<u>Point: -USB Ports/VGA & HDMI</u> Ports 2 USB (2 x USB 3.0), 2 x Network, 1 x Management, 1 x Interconnect (40 Gbps), 2 x Video (1 x VGA & 1 HDMI)	Agree with VGA port. Please quote Interconnect IB-EDR (100 Gbps Interconnect) with IB-EDR (100 Gbps) Cable of appropriate length. We have an existing IB-EDR (100 Gbps) switch within our corrigendum.
28	Technical Specification Chapter 6 Technical Bid		<u>Point: -Exp Slots</u> 1 x PCI-E 3.0 x 16, 2 x PCI E3.0x8(low-profile slots) (2 free slots)	Yes
29	Technical Specification Chapter 6 Technical Bid		<u>Point: -Power Supply</u> Redundant and hot swappable with 80 PLUS Platinum compliance	Yes
30	Technical Specification Chapter 6 Technical Bid		<u>Point: -Fans</u> Redundant and hot swap	Yes
31	Technical Specification Chapter 6 Technical Bid		<u>Point: -Systems Management</u> Advance failure analysis support on systems for CPU, memory, HDD, Power Supply and fans. LED diagnostics on server even without power, Automatic server restart, and management port	Yes
32	Technical Specification Chapter 6 Technical Bid		<u>Point: -Operating System</u> Red Hat Enterprise Linux or CentOS 7.0 or UBUNTU, Any Certified OS which fulfill the compatibility and requirement by the hardware and other application software	Yes
33	Technical Specification Chapter 6 Technical Bid		<u>Point: -Peripherals</u> 32" TFT Color Monitor display(anti-glare), keyboard & optical mouse	Yes
34	Technical Specification Chapter 6 Technical Bid		<u>Point: -Warranty</u> 5 Years of onsite warranty for all parts, support and labor. SLA or guarantee for 4 hours response time and 24 hrs resolution times.	Yes

35	Technical Specification Chapter 6 Technical Bid	M/s. Locuz Enterprise Solutions Ltd.	<p>Point: -Security Should have a cyber resilient architecture for a hardened server design for protection, detection & recovery from cyber attacks Should protect against firmware which executes before the OS boots Should provide effective protection, reliable detection & rapid recovery using:</p> <ul style="list-style-type: none"> - Silicon-based Hardware Root of Trust - Signed firmware updates - Secure default passwords - Configuration and firmware drift detection - Persistent event logging including user activity - Secure alerting - Automatic BIOS recovery - Rapid OS recovery - System erase <p>Configuration upgrades should be only with cryptographically signed firmware and software Should provide system lockdown feature to prevent change (or "drift") in system firmware image(s) & prevent malicious modification of server firmware</p>	Yes
Compute Node				
36	Technical Specification Chapter 6 Technical Bid	M/s. Locuz Enterprise Solutions Ltd.	<p>Point: -Processor (i) 2 x Intel® Xeon® Gold 6226R CPU @ 2.90 GHz, 22 MB Cache (total: 32 cores) Qty:4(Total 128 Cores) and (ii) 2 x Intel® Xeon® Gold 6136 CPU @ 3.0 GHz, 24.75 MB Cache (total: 24 cores) Qty:4(Total 128 Cores)</p>	Vendors can quote machines with the following minimum specifications: (Atleast 2.90 GHz, 22 MB Cache (atleast 24 cores per node))
37	Technical Specification Chapter 6 Technical Bid		<p>Point: -Chipset Intel C622 chipset or better(C624)</p>	Intel C620 series or OEM Standard
38	Technical Specification Chapter 6 Technical Bid		<p>Point: -RAM (12 x 16 GB) PC4-21300 DDR4-2666(required 8-10 GB/core)</p>	Vendors need to quote min 8-GB per core

39	Technical Specification Chapter 6 Technical Bid		Point: -Disk 1 TB SATA per node, 7200 RPM disk, hardware RAID controller with hardware RAID 0,1,5,6,10	RAID provides data redundancy and/or improves hard disk drive performance. So, we need this configuration in each node
40	Technical Specification Chapter 6 Technical Bid		Point: -Graphics AST 2600 Remote Management Server processor, The 7th generation of ASPEED Base Board Management Controller in each computing node	You can quote AST ASPEED2600-2500 BMC Graphics or updated version (you can also quote other certified graphics cards)
41	Technical Specification Chapter 6 Technical Bid		Point: -Accelerator 1 x Nvidia Tesla V100S (32 GB) PCIe Passive Cooling Board in each computing node	agree
42	Technical Specification Chapter 6 Technical Bid	M/s. Locuz Enterprise Solutions Ltd.	Point: -CPU-GPU compute node 200 Tflops of compute power in double precision; 1 GPU per node. Nvidia Tesla V100S (32 GB) card with at least 32 GB main memory.	agree with V100S (8.2 Tflops) card with at least 32 GB main memory
43	Technical Specification Chapter 6 Technical Bid		Point: -Total Compute Power PCPU+200 Tflops of GPU Installation. The overall system must support expansion to 25% more CPU compute power. For additional expansion in future, the vendor must offer at the bid price or below.	yes
44	Technical Specification Chapter 6 Technical Bid		Point: -Power Supply Redundant and hot swappable with 80 PLUS Platinum compliance	required
45	Technical Specification Chapter 6 Technical Bid		Point: -Fans Redundant and hot swap	required

46	Technical Specification Chapter 6 Technical Bid		Point: -USB Ports/VGA & HDMI Ports 2 USB (2 x USB 3.0), 2 x Network, 1 x Management, 1 x Interconnect (40 Gbps), 2 x Video (1 x VGA & 1 HDMI)	Agree with VGA port. Please quote Interconnect IB-EDR (100 Gbps Interconnect) with IB-EDR (100 Gbps) Cable of appropriate length. We have an existing IB-EDR (100 Gbps) switch within our corrigendum.
47	Technical Specification Chapter 6 Technical Bid		Point: -Systems Management Advance failure analysis support on systems for CPU, memory, HDD, Power Supply and fans. LED diagnostics on server even without power, Automatic server restart, and management port	Yes
48	Technical Specification Chapter 6 Technical Bid		Point: -Operating System Red Hat Enterprise Linux or CentOS 7.0 or UBUNTU, Any Certified OS which fulfill the compatibility and requirement by the hardware and other application software. Trusted Platform Module TPM 1.2 Certified	Yes
49	Technical Specification Chapter 6 Technical Bid	M/s. Locuz Enterprise Solutions Ltd.	Point: -Graphics Onboard graphics using server Grade Graphics controller	Yes
50	Technical Specification Chapter 6 Technical Bid		Point: -Warranty 5 Years of onsite warranty for all parts, support and labor. SLA or guarantee for 4 hours response time and 24 hrs resolution times.	Yes
Other Accessories				
51	Technical Specification Chapter 6 Technical Bid	M/s. Locuz Enterprise Solutions Ltd.	Point: -Network Managed Switch Compatibility with OpenSM and OpenMPI, should provide full quoted performance on open-source software (Linux-OpenMPI). All software/firmware/drivers should be supplied	Yes
52	Technical Specification Chapter 6 Technical Bid		Point: -Rack Not Required	Not Required



53	Technical Specification Chapter 6 Technical Bid		Point: -Accessories All required accessories including cables for connectivity wires must be quoted	Yes
54	Technical Specification Chapter 6 Technical Bid		Point: -Redundancy Fully redundant Hot Plug Power supply and fans for the storage	Yes
55	Technical Specification Chapter 6 Technical Bid		DELIVERY: Within 01 month from the date of purchase order.	01-02 Months
56		M/s Meganet Query	Kindly confirm that below software's mention in tender specifications are Commercial or Open ? VASP 6.0, Turbomole, G09 with Linda, ORCA, AMBER, Material studio, NAMD, Natural Bond Orbital NBO 6.0 Program, AIMALL (Version 17.11.14 B), Polyrate 17-C, Multiwell, Gaussrate 17-B, VMD, NCI, CASTEP, DMOL3, MATLAB, GULP 5.1, DL_Poly 4.0, MOPAC2016, DACAPO.	Some are commercial and some are open. We are asking for help in installing the software. You do not have to buy and install. We have already purchased all the commercial softwares.
57			Kindly explain briefly about the Polyrate 17-C software.	We don't need to install this software. You please ignore this.

The date of submission of bids is extended upto 04/03/2021 @ 3.00 P.M.

The date of Opening of bids is extended upto 05/03/2021 @ 3.00 P.M.

All prospective/willing bidders are requested to take note of this report as part of the Tender document. All other parts of the tender including the terms and conditions of the tender will remain Unchanged.

AO (MMS)

