		Gujarat Biotechnology University		
		Prebid-Representations (Prebid dated 24-10-2024 at 11:00 am)		
		Bid No. : GBU/IT/Server/2024-25 dated 14-10-2024		
		Item Name: RFP for supplying, installing & commissioning of Servers,Storage, Network Switches, Smart Rack, and UPScomponents		
(Clause No & Page No)	**Component**	**Tender Specification**	**Representations Received from the bidders**	**GBU recommendations**
5	Section 2, 2.1	The Bidder shall furnish, as part of the Bid, EMD shall be submitted in the form of a Demand Draft OR Banker's Cheque / Pay Orders in the form of an unconditional Bank Guarantee (which should be valid up to the validity of bid + 90 days) of any Nationalized Bank including the public sector bank or Private Sector Banks or Commercial Banks or Co-Operative Banks and Rural Banks (operating in India having a branch at Gandhinagar in the name of "GUJARAT BIOTECHNOLOGY UNIVERSITY, Gandhinagar." payable at Gandhinagar as per prescribed format given, and in a separate envelope. The unpriced bid (Technical bid) will be opened subject to the confirmation of valid EMD and bid processing fees.) Rs. 15,00,000/-(Fifteen thousand only/-) Till 06/11/2024 up to 18:10 Hrs.	Clarification required whether we have to submit EMD as per Section -2 Point 2.1- Sub Point iii Page 5 - Rs. 15,00,000/- (In words: Fifteen Lakhs Only) **or** EMD of or As per Section 5 - Instruction to Bidder - Page 19 - 2,05,000/- (Two Lakh five thousand only) .	Bidder to Submit EMD of Rupees 15,00,000 /- (In Words Rupees Fifteen Lakhs Only).
9	Section - 3 Scope of Work		Installation Scope is not definend in your scope of work. i.e. OS, Virutalization, Connectivity etc.	Setup of AI/ML to be Deployed as per Industry Best Practice and Training of Operation, Maintenance and Utilization to be provided by the Bidder as mentioned in the Scope of Work.
9	Section - 3 Scope of Work	Supply of Required patch cords (CAT6a / FC) as per the requirements to interconnect and connect to the existing GBU Network.	**Clarification Sought** We understand, the cables are to be laid within the rack supplied. Kindly confirm or clarify**. This information is being sought to estimate length of the cables.**	You can consider Maximum Length of 30 Meter Distance from the AI Lab Setup Connectivity to Core Network.
9	Section - 3 Scope of Work	Training:	**Clarification Sought** We understand, the training is not required to be a "certification training". Kindly confirm or clarify	NVIDIA professional comprehensive on-site traning is required.
11	Section 4, b	Bidder must have completed at least the following numbers of Server, Storage, Network, Smart Rack & UPS of a value specified herein: One project of a similar nature not less than the amount value equal to 80% of the estimated cost for the Server, Storage, Network & Smart Rack **OR** Two projects of similar nature not less than the amount equal value equal to 60% of the estimated cost for Server, Storage, Network & Smart Rack **OR** Three projects of a similar nature not less than the amount equal <value equal to 40% of estimated cost> for Server, Storage, Network & Smart Rack.	Please confirm the estimated cost, it is not mentioned in the RFP. Also please confirm the experience required here for last how many years i.e.10 years, 7 years or 5 years. And requesting you to ask the experience required here for last 7 years.	As declared in the Prebid Project Estimated cost is 4.5 Cr. Bidder/OEM {themselves or through reseller(s)} must have completed at least the following numbers of Server, Storage, Network, Smart Rack & UPS of a value specified herein. Attachments - Completion Certificates / Installation Sign-off / Go-Live Certificate from the client since last 7 Years from the Date of Published Bid.
11	Section 4, b	b. Bidder must have completed at least the following numbers of Server, Storage, Network, Smart Rack & UPS of a value specified herein: One project of a similar nature not less than the amount value equal to 80% of the estimated cost for the Server, Storage, Network & Smart Rack **OR....**	**Change Request** b. Bidder must have completed at least the following numbers of Server, Storage, Network, Smart Rack & UPS of a value specified herein: One project of a similar nature not less than the amount value equal to 80% of the estimated cost for the Server, Storage, Network & ~~Smart Rack Justification:~~ We have executed many large projects however, for such projects the customers run multiple different projects and landscapes. Such data centres have separate power and cooling arrangements. **Query:** Please provide the estimated value of the project to arrive at 80% cost.	No Change.
12	Section 4, d	d. The Bidder should have at least one administrative office in Gandhinagar / Ahmedabad. The Bidder should have its own service & support infrastructure in Gujarat, to provide warranty and post-warranty services	Requesting to allow bidder to open office along with service and support center within 45 days of receiving the work order from GBU. For bid, we can submit the undertaking. We are new to this region hence we do not have office or service and support center. Since the bid contains infra, the clause can be revised to Bidder/OEM. with above changes we can bid.	No Change.
12	Section 4, d	d. The Bidder should have at least one administrative office in Gandhinagar / Ahmedabad. The Bidder should have its own service & support infrastructure in Gujarat, to provide warranty and post-warranty services	**Change Request** If the bidder does not have office in Gandhinagar / Ahmedabad, it will be setup with service and support facility within 30 days of issue of purchase order. We ably support customers across the country from our central location and engineers in major cities. And we are committed to setup office in Ahmedabad to meet the specific RFP requirement.	No Change.
11	Section 4, b	Bidder must have completed at least the following numbers of Server, Storage, Network, Smart Rack & UPS of a value specified herein. Attachments - Completion Certificates from the client	Bidder/OEM {themselves or through reseller(s)} must have completed at least the following numbers of Server, Storage, Network, Smart Rack & UPS of a value specified herein. Attachments - Completion Certificates / Go-Live Certificate from the client	Change Accepted : Bidder/OEM {themselves or through reseller(s)} must have completed at least the following numbers of Server, Storage, Network, Smart Rack & UPS of a value specified herein. Attachments - Completion Certificates / Go-Live Certificate from the client

12	Eligibility Criteria	OEM Eligibility Criteria missing in the RFP	Please include OEM Eligibility Criteria in the RFP: 1.The proposed OEM must be a company incorporated in India under the Companies Act, 1956 or 2013.	No Change.
12	Eligibility Criteria	OEM Eligibility Criteria missing in the RFP	Please include OEM Eligibility Criteria in the RFP: 2.The proposed OEM must be compliant with Department for Promotion of Industry and Internal Trade (DPIIT) Order No. P-45021/2/2017-B.E.-II dated 15.06.2017, as amended by Orders dated 28.05.2018, 29.05.2019 and 4.06.2020 and as per the guidelines laid down by Ministry of Electronics and Information Technology (IPHW Division) Gazette Notification dated 7.09.2020 regarding Make in India at the time of bid release or bid publish date.	No Change.
12	Eligibility Criteria	OEM Eligibility Criteria missing in the RFP	Please include OEM Eligibility Criteria in the RFP: 3.The proposed OEM must have an existing Service and Spares Centre within Gujarat at the time of bid release or bid publish date.	No Change.
12	Eligibility Criteria	OEM Eligibility Criteria missing in the RFP	Please include OEM Eligibility Criteria in the RFP: 4.The proposed OEM must have a valid ISO 9001:2015 Certificate at the time of bid release or bid publish date.	No Change.
12	Eligibility Criteria	OEM Eligibility Criteria missing in the RFP	Please include OEM Eligibility Criteria in the RFP: 5.The proposed OEM must have a valid ISO 27001:2013 Certificate at the time of bid release or bid publish date.	No Change.
12	Eligibility Criteria	OEM Eligibility Criteria missing in the RFP	Please include OEM Eligibility Criteria in the RFP: 6.The proposed OEM must have a valid ISO 14001:2013 Certificate at the time of bid release or bid publish date.	No Change.
19	Section 5	If an offer is submitted by authorized distributors/dealers, EMD of 2,05,000/- (Two Lakh five thousand only) should be submitted along with the offer by the way of Demand Draft / Pay Order should be drawn on any Nationalized Bank favoring "Gujarat Biotechnology University" and payable at Gandhinagar.	Clarification required whether we have to submit EMD as per Section -2 Point 2.1- Sub Point iii Page 5 - Rs. 15,00,000/- (In words: Fifteen Lakhs Only) **or** EMD of or As per Section 5 - Instruction to Bidder - Page 19 - 2,05,000/- (Two Lakh five thousand only) .	Bidder to Submit EMD of Rupees 15,00,000 /- (In Words Rupees Fifteen Lakhs Only).
19	Section 5	10% After completion of work and Final acceptance and Testing	**Query** 1. We request GBU to provide clarity on site-not-ready scenario. 2. We request GBU to provide list of activities to be performed for acceptance testing. **Justification:** The information is requested to arrive at requisite manpower, effort, time and skills required	No Changes, Site is Ready for the Deployment of the Intended AI Setup Proposed, as for other queries, it stricly depending on Bidder / OEM's Deployment Plan, Bidder to ensure that the Project is Completed within Stipulated Time Frame.
19	Section 5 and Section 2 (pg no 5)	If an offer is submitted by authorized distributors/dealers, EMD of 2,05,000/- (Two Lakh five thousand only) should be submitted along with the offer by the way of Demand Draft / Pay Order should be drawn on any Nationalized Bank favoring "Gujarat Biotechnology University" and payable at Gandhinagar.	EMD Value require to clarify	**Changes as per below :** If an offer is submitted by authorized distributors/dealers, EMD of 15,00,000/- (Fifteen Lakh only) should be submitted along with the offer by the way of Demand Draft / Pay Order should be drawn on any Nationalized Bank favoring "Gujarat Biotechnology University" and payable at Gandhinagar.
20	OEM	AI Server, Master Node and Storage to be from same.	AI Server, Master Node and Storage to be from same **OEM**.	Change Accepted : AI Server, Master Node and Storage to be from same OEM.
20	OEM	AI Server, Master Node and Storage to be from same.	**Change Request** We request GBU to relax this clause. **Justification:** This clause prevents us from proposing right design storage.	No Change.
28,33,37,46	Same OEM	Offered Servers and Storage must be from same OEM.	**Remove this**, **Justification**: Not all OEM's have servers and storage both. This clause is favoring some particular OEM's which is restrictive for us to participate , hence request you to kindly delete this clause for wider participation.	No Change.
	Eligibiliity Criteria	Additional clause required	You have nowhere mentioned that the bidder shall have prior experience and submit PO Copies with installation reports of the supplies HPC Clusters within India. Kindly add the same.	No Change.

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-	-	HPC Software Suite	You have nowhere mentioned about the HPC Cluster Software Suite which includes the Cluster Management Software and the Job Scheduler. Kindly add the same.	No Change.
-	-	HPC Benchmark Performance	You have nowhere mentioned about the desired performance of HPC Cluster. Kindly add the same.	No Change.
-	-	HPC Engineer	In the onsite manpower asked and also the list of engineers, kindly add the clause that bidder shall submit list of **HPC** Engineers available on payroll. Also the onsite manpower deployed at site should have the required technical expertise of maintaining an HPC Cluster with min. 5 years of HPC Cluster Experience.	No Change.
	-	Related to scope of work	**Clarification Sought** We understand, the RFP scope does not include any migration for the bidder. The connectivity from the ToR switch to core switch (cables, ports, transceivers etc.) will be taken care of by the university. Kindly confirm or clarify**.** If Migration is involved, please provide details of source systems and capacity.	this is Green field Project, hence No Migration activity required.
	-	Related to scope of work	**Clarification Sought** We understand, the RFP scope does not require any deployment of cluster, job scheduler. The GPU nodes will be used individually. Jobs will be submitted manually. **If the above is not incorrect, please add your requirements**	We intend to Build an AI LAB. Hence bidders are requested to consider the GPU Nodes Deployment Design and Scope Accordingly.

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33	MASTER NODE / HEAD NODE for Bioinformatics	**Chasis** - 2U Rack Mountable	Kindly allow 4U Rack Mount Form factor here.	No Changes
33	MASTER NODE / HEAD NODE for Bioinformatics	**Memory**: 24 DIMM slots or Higher. 256 GB DIMMS scalable up to 4.0 TB or Higher using DDR5 Registered DIMM (RDIMM) operating at 4800 MT/s or more.	**Memory**: **32** DIMM slots or Higher. 256 GB DIMMS scalable up to **8.0 TB** or Higher using DDR5 Registered DIMM (RDIMM) operating at **5600 MT/s or more**.	**Partial Change Accepted Memory**: **32 DIMM slots or Higher**. 1 TB DIMMS scalable up to **4.0 TB or Higher** using DDR5 Registered DIMM (RDIMM) operating at **5600 MT/s or more.**
33	MASTER NODE / HEAD NODE for Bioinformatics	**Memory**: 24 DIMM slots or Higher. 256 GB DIMMS scalable up to 4.0 TB or Higher using DDR5 Registered DIMM (RDIMM) operating at 4800 MT/s or more.	Upto **3tb** with 128 DIMMS.The maximum slot in **AMD servers** are **24**.	No Changes
33	MASTER NODE / HEAD NODE for Bioinformatics	**Bus Slots -** Server should support up to six PCI-Express 5.0 x16 slots.	Riser Config 5, 3 x16 FH (2x Gen5) + 2 x16 LP + 1 x16 DW	No Changes
34	MASTER NODE / HEAD NODE for Bioinformatics	**RAID Controller** Embedded / PCIe based RAID controller with 8GB Flash backed write cache supporting RAID 0, 1, 5, 6, 10, 50, 60. Must support mix-and-match SAS, SATA, and NVMe drives to the same controller. Controller must support 6G SATA, 12G SAS, 16G NVMe.	Kindly allow RAID Cards with 4 GB Cache as 8 GB Cache is restrictive and available with few OEM's only. Our offered controller supports SAS/SATA/NVMe but at a time it supports either 4 NVMe OR Multiple SAS/SATA Drives. Kindly help to clarify whether this is acceptable or not.	No Changes
34	MASTER NODE / HEAD NODE for Bioinformatics	**Networking features** Server should be provisioned with below networking cards from day one: 1. 1Gb 4-port network adaptors 2. 2 x 10/25Gb 2-port SFP28 Ethernet adaptor Infiniband Options Support for future expansions : 100Gb or 200Gb Single or Dual port Adapter	As discussed in the Pre-Bid Meeting that you want to create a HPC Cluster in this scenario, so wanted to know that you are planning to keep 25G Ethernet as Primary Interconnect ? If yes then this is not an ideal solution as this will create significant performance bottleneck. So, we recommend to remove 10G/25G and actually add atleast 1x IB HDR 200G port per server for obtaining a performance oriented HPC Cluster.	No Changes
34	MASTER NODE / HEAD NODE for Bioinformatics	**GPU Compatibility** Proposed server make and model should be NVIDIA certified system for NVIDIA H100 NVL GPU and this information should be available on public domain.	We can provide a server which can handle Nvidia H100 NVL (94 GB) GPU Cards. Kindly remove the criteria that the system should be NVIDIA Certified as it is restrictive to few OEM's. Also you are not asking for the GPU now, you just want the quoted server to be able to handle 1 qty. of Nvidia H100 NVL (94 GB) GPU. Kindly confirm. Also confirm you want the provision for how many such H100 NVL (94 GB) GPU's in this server ?	No Changes
34	MASTER NODE / HEAD NODE for Bioinformatics	**GPU Compatibility** Proposed server make and model should be NVIDIA certified system for NVIDIA H100 NVL GPU and this information should be available on public domain.	**Change Request** We request GBU to relax this clause as below for wider participation and still ensure all the functionality: Proposed server make and model should be NVIDIA system compatible for NVIDIA H100 NVL GPU and this information should be available on OEM documents. For widening participation. We will propose servers from a vendor who have very large NVIDIA setup running successfully.	No Changes
34	MASTER NODE / HEAD NODE for Bioinformatics	**Interfaces** Serial - 1 (Optional) USB support with Up to 4 total: 1 front, 2 rear, 1 internal 1GbE Dedicated management port	All the servers come standard with 2x USB 3.0 (rear), 1x VGA, 1x dedicated RJ45 Management. Kindly help to amend this clause accordingly.	No Changes
34	MASTER NODE / HEAD NODE for Bioinformatics	**Industry Standard Compliance:** ACPI 6.1 Compliant, PCIe 5.0 Compliant, WOL Support, Microsoft® Logo certifications, PXE Support, Energy Star, SMBIOS 3.1, UEFI 2.7, Redfish API IPMI 2.0, Secure Digital 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP v3, TLS 1.2, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), Active Directory v1.0, ASHRAE A3/A4	Microsoft Logo Certifications, Energy Star, Secure Digital 2.0 & ASHRAE (A3/A4) are restrictive to few OEM's. We are an Indian Manufacturer complying with the Make - In- India Policy of our Indian Government. We can submit BIS Certification for the quoted server in place of the above asked certifications. Kindly help to remove the above certifications and we humbly request you to kindly ask for BIS Certifications for the quoted server. Also, further kindly remove Triple Data Encryption Standard (3DES) as it is old and obsolete and it is being replaced by Advanced Encryption Standard (AES) which we are already complying.	**Changes as Per Below : Industry Standard Compliance:** ACPI 6.1 Compliant, PCIe 5.0 Compliant, WOL Support, Microsoft® Logo certifications, PXE Support, SMBIOS 3.1, UEFI 2.7, Redfish API IPMI 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP v3, TLS 1.2, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), Active Directory v1.0.
34	MASTER NODE / HEAD NODE for Bioinformatics	**Industry Standard Compliance:** ACPI 6.1 Compliant SMBIOS 3.1 Secure Digital 2.0	**Industry Standard Compliance:** ACPI **6.3** Compliant SMBIOS **3.2** Secure Digital **4.0**	**No Changes**

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35	MASTER NODE / HEAD NODE for Bioinformatics	**System Security:** UEFI Secure Boot and Secure Start support, Tamper-free updates - components digitally signed and verified, Immutable Silicon Root of Trust Ability to rollback firmware, FIPS 140-2 validation, Secure erase of NAND/User data, Common Criteria certification, Configurable for PCI DSS compliance, TPM (Trusted Platform Module) 2.0 option, Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser Bezel Locking Kit option, Support for Commercial National Security Algorithms (CNSA), Chassis Intrusion detection option,Secure Recovery - recover critical firmware to known good state on detection of compromised firmware	We need clarity on what do you mean by Common Criteria Certifications here. Also kindly help to remove Bezel Locking Kit option as it is restrictive to few OEM's.	**Changes as per Below :** System Security: UEFI Secure Boot and Secure Start support, Tamper-free updates - components digitally signed and verified, Immutable Silicon Root of Trust Ability to rollback firmware, FIPS 140-2 validation, Secure erase of NAND/User data, Configurable for PCI DSS compliance, TPM (Trusted Platform Module) 2.0 option, Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser Bezel Locking Kit option, Support for Commercial National Security Algorithms (CNSA), Chassis Intrusion detection option,Secure Recovery - recover critical firmware to known good state on detection of compromised firmware
35	MASTER NODE / HEAD NODE for Bioinformatics	**Operating Systems and Virtualization Software Support**	Requested to clarify the Operating System to be used for Container cluster for this proposed setup.	Bidder to Propose Solution with Opensource Operating System like Cent OS or Ubuntu as per Industry Standard Best Practice for AI / ML Setup.
35	MASTER NODE / HEAD NODE for Bioinformatics	**Operating Systems and Virtualization Software Support**	Kindly help to confirm on which of these particular OS you want to build this HPC Cluster Solution. Also let us know the list of applications which you are working on. If any commercial application has to be installed in this HPC Cluster, then the corresponding license and the source code of the same has to be provided by you.	Bidder to Propose Solution with Opensource Operating System like Cent OS or Ubuntu as per Industry Standard Best Practice for AI / ML Setup.
35	MASTER NODE / HEAD NODE for Bioinformatics	**Operating Systems and Virtualization Software Support**	**Change Request** We request GBU to relax this clause for wider OEM participation. OEM do not test systems for Oracle Linux and Oracle VM as these are used in pure Oracle environment only. Citrix (Xen hypervisor) is not in use any more. **For widening participation.** NVIDIA AI Enterprise is not used with Oracle or Citrix products. Also, we will propose servers from a vendor who have very large NVIDIA setup running successfully.	No Changes
35	MASTER NODE / HEAD NODE for Bioinformatics	**Provisioning** 1. Should support tool to provision server using RESTful API to discover and deploy servers at scale. 2. Provision one to many servers using own scripts to discover and deploy with Scripting Tool (STK) for Windows and Linux or Scripting Tools for Windows PowerShell.	1. In how many servers do you want RESTful API's integration. We recommend to use GUI based API's for this as it will be easier to use for this. This is OEM Specific. 2. How many servers you want to configure for this as you have mentioned one to many servers ?	The Entire Proposed AI-ML Setup should get integrated with Tools and Technologies for AI-ML Setup for Integration using RESTful API.
35	MASTER NODE / HEAD NODE for Bioinformatics	**Firmware security** 1. For firmware security, system should support remote management chip creating a fingerprint in the silicon, preventing servers from booting up unless the firmware matches the fingerprint.	Kindly amend the clause to cryptographically signed firmware updates to be provided in the quoted server.	No Changes
36	MASTER NODE / HEAD NODE for Bioinformatics	**Embedded Remote Management and firmware security** 6. Remote console sharing up to 6 users simultaneously during pre-OS and OS runtime operation, Console replay - Console Replay captures and stores for replay the console video during a server's last major fault or boot sequence. Microsoft Terminal Services Integration, 128 bit SSL encryption and Secure Shell Version 2 support. Should provide support for AES and 3DES on browser. Should provide remote firmware update functionality. Should provide support for Java free graphical remote console.	This feature is restrictive to few OEM's. Also this feature of remote console is not useful for HPC Cluster Scenarios as the usage of the HPC Cluster is governed / monitored by the HPC Cluster Software Suite which includes the Cluster Management Software and the Job Scheduler so kindly remove this point.	No Changes
36	MASTER NODE / HEAD NODE for Bioinformatics	7. Should support RESTful API integration.	In how many servers do you want RESTful API's integration. We recommend to use GUI based API's for this as it will be easier to use for this.	The Entire Proposed AI-ML Setup should get integrated with Tools and Technologies for AI-ML Setup for Integration using RESTful API.

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37	MASTER NODE / HEAD NODE for Bioinformatics	10. One-button Secure Erase designed to decommission/repurpose servers.	This feature is restrictive to few OEM's. Kindly remove this point.	Consider this clause Deleted.
37	MASTER NODE / HEAD NODE for Bioinformatics	11. Workload Performance Advisor - Provides server tuning recommendations to improve server performance.	Kindly remove this point as this is not relevant in the HPC Cluster Scenario where multiple servers are collectively used to run any job/simulation. In HPC Cluster Scenario, the applications have to be installed & complied as per their recommended OS versions alongwith all their associated dependencies which itself ensures that the applications runs optimally.	No Changes
37	MASTER NODE / HEAD NODE for Bioinformatics	Software should support dashboard view to quickly scan the managed resources to assess the overall health of the data center. It should provide an at-a-glance visual health summary of the resources user is authorized to view.	You are asking for only 3 servers but here you are asking for software to assess the overall health of data centres. A typical data centre has thousands of servers where this is absolutely necessary to optimize the downtime and servicing of servers. For just 3 qty. of servers this is actually not required as this unnecessarily increases the cost. Kindly remove this.	No Changes
37	MASTER NODE / HEAD NODE for Bioinformatics	The Dashboard minimum should display a health summary of the following: • Server Profiles • Server Hardware • Appliance alerts	Kindly clarify what alerts you require here.	The Point is Self Explainatory. We need monitoring of Server Health.
37	MASTER NODE / HEAD NODE for Bioinformatics	The Systems Management software should provide Role-based access control.	This has to be integrated with a Compatible Job Scheduler. Kindly mention Open Source SLURMs Job Scheduler to also be provided and installed by the supplier in all these 3 servers.	No Changes
37	MASTER NODE / HEAD NODE for Bioinformatics	Management software should support integration with popular virtualization platform management software like VMware vCenter & vRealize Operations, and Microsoft System Center & Admin Center.	This is not relevant to HPC Cluster Scenario. The asked points are of HCI Solution which is completely different from your requirement of HPC Cluster as confirmed by you in the Online Pre-Bid Meeting.	No Changes
37	MASTER NODE / HEAD NODE for Bioinformatics	Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD.	This feature is restrictive to few OEM's. Kindly remove this point.	No Changes
37	MASTER NODE / HEAD NODE for Bioinformatics	Should help to proactively identify out-of- date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.	This feature is restrictive to few OEM's. Kindly remove this point.	No Changes
38	MASTER NODE / HEAD NODE for Bioinformatics	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers. OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers only **and under any circumstances can't be offloaded / subcontracted to any Service Partner of the OEM.** OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	No Changes
38	MASTER NODE / HEAD NODE for Bioinformatics	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers. OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	Kindly ask for OEM MAF for all components like Servers, Storage, Switch and the Network Racks.	it has been already asked in Bidder Eligibility.

Gujarat Biotechnology University

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39	CENTRAL NAS Infrastructure for Bioinformatics	**Storage**: Offered Storage array shall be a Hybrid array supporting both SSD and spinning drives or NVMe drives.	**Storage**: Offered Storage array shall be a Hybrid array supporting both SSD and spinning drives **or flash optimised NVMe array** for NVMe drives	**Kindly read the Changes as below :** **Storage**: Offered Storage array shall be a Hybrid array supporting both SSD and spinning drives **or flash optimised NVMe array** for NVMe drives
39	CENTRAL NAS Infrastructure for Bioinformatics	**Capacity & Scalability:** 1. Offered storage array shall be supplied with 250TB usable capacity using SAS / SSD drives using minimum 10TB or Higher Capacity Drives.	**Capacity & Scalability:** 1. Offered storage array shall be supplied with 250TB usable capacity using SAS / SSD drives using **maximum 10TB capacity drives.**	**Changes as below :** **Capacity & Scalability:** 1. Offered storage array shall be supplied with 250TB usable capacity using SAS / SSD drives using Raid 6 and Hotspare.
39	CENTRAL NAS Infrastructure for Bioinformatics	**Capacity & Scalability:** 1. Offered storage array shall be supplied with 250TB usable capacity using SAS / SSD drives using minimum 10TB or Higher Capacity Drives.	**Clarification Sought** From the phrase "SAS / SSD drives", we understand that either SAS HDD or SSD (SAS interface or SATA interface) can be provided. The SAS HDD shall be SAS 7200rpm disks (also referred to as NL-SAS), Kindly confirm or clarify	**Changes as below :** **Capacity & Scalability:** 1. Offered storage array shall be supplied with 250TB usable capacity using SAS / SSD drives using Raid 6 and Hotspare.
39	CENTRAL NAS Infrastructure for Bioinformatics	**Capacity & Scalability** 1. Offered storage array shall be supplied with 250TB usable capacity using SAS / SSD drives using minimum 10TB or Higher Capacity Drives. 2. Offered storage array shall be flexible on both Scale-up and Scale-out using array in-built firmware enabled clustering technology. Offered storage array shall be scalable to at-least 200TB capacity in scale-up and at-least 3PB in scale-out. Vendor shall provide the required documentary proof for the in- built firmware enabled clustering technology.	Hybrid storage support up to 7.68TB SSD drive, **Request you kindly amend with :** 1. Offered storage array shall be supplied with 250TB usable capacity using SAS / SSD drives using **minimum 7.68TB** or Higher Capacity Drives. Also share the IOPS requirement to consider drive size to achieve 250TB usable.	**Changes as below :** **Capacity & Scalability:** 1. Offered storage array shall be supplied with 250TB usable capacity using SAS / SSD drives using Raid 6 and Hotspare.
39	CENTRAL NAS Infrastructure for Bioinformatics	**Capacity & Scalability** 1. Offered storage array shall be supplied with 250TB usable capacity using SAS / SSD drives using minimum 10TB or Higher Capacity Drives. 2. Offered storage array shall be flexible on both Scale-up and Scale-out using array in-built firmware enabled clustering technology. Offered storage array shall be scalable to at-least 200TB capacity in scale-up and at-least 3PB in scale-out. Vendor shall provide the required documentary proof for the in- built firmware enabled clustering technology.	1. Offered storage will be supplied with upto 7.68TB SSD Drives. Kindly help with the IOPS requirement or % of SSD/SAS drives to be considered. 2.Offered storage can scale upto 200TB and scale to 3PB with data in place controller upgrades. **Query** - Can you please help us understand why 10TB or higher capacity drives are required?As long as the performace paramters are matched?? 2. Our recommendation would be to go with scale up architecture with 3PB scalabilty and with the appropriate performace which is required as it would help optimze the solution. Request you to please highlight the IOPS requirement here.	**Changes as below :** **Capacity & Scalability:** 1. Offered storage array shall be supplied with 250TB usable capacity using SAS / SSD drives using Raid 6 and Hotspare.
39	CENTRAL NAS Infrastructure for Bioinformatics	**Cache:** 1. Offered storage array shall have dual controller and to be supplied with at-least 128GB Data Cache per Controller for read and write operations.	**Cache:** 1. Offered storage array shall have dual controller and to be supplied with at-least 128GB Cache across Controllers for read and write operations. **Offered storage shall also be offered with additional Flash cache memory using SSD drives. Vendor shall provide additional 16TB usable flash cache. If Flash Cache not supported, then 16TB DRAM Cache memory across Dual Controllers shall be built-in from day one. ECC memory or RAM can't be proposed for Controller Cache.**	**Changes as per below :** Cache: 1. Offered storage array shall have dual controller and to be supplied with at-least 128GB DATA Cache per Controller or 256 GB DATA Cache across Storage Array for read and write operations. Vendor shall provide additional 16TB usable flash cache or 20 TB Usable Capacity using NVME Drives in Auto Tiering with SAS Drives (Auto Tiering of NVME + SAS Drives)
39	CENTRAL NAS Infrastructure for Bioinformatics	**Cache:**2. Write operations shall be completely protected and there shall be no data loss in case of power failure. This mechanism must not rely on batteries.	**Query** We request GBU to clarify if capacitors or flash are to be provided in place of batteries.	**Answer :** Bidder to Propose a solution which is does not result in data loss in case of power failure and it should not be dependant on external battries. Weather using Capacitors or Flash is Bidder / OEM's Perogative.

Gujarat Biotechnology University
Prebid-Representations (Prebid dated 24-10-2024 at 11:00 am)
Bid No. : GBU/IT/Server/2024-25 dated 14-10-2024
Item Name: RFP for supplying, installing & commissioning of Servers,Storage, Network Switches, Smart Rack, and UPScomponents

(Clause No & Page No)	Component	Tender Specification	Representations Received from the bidders	GBU recommendations
39	CENTRAL NAS Infrastructure for Bioinformatics	2. There shall be minimal performance de-gradation due to a single component or controller failure 2. There shall be minimal performance de-gradation due to a single Controller failure. Vendor shall provide the documentary proof for same.	**Query** We request GBU to clarify the performance requirement in terms of throughput required at network level in MB/s or GB/s. By specifying performance parameters, GBU can be sure of getting correctly sized, correctly designed storage system.	**Answer :** As this is a Green Field Project there are no current benchmarkes on MB/s or GB/s. Hence bidders are suggested to comply to the RFP Spec of Storage.
39	CENTRAL NAS Infrastructure for Bioinformatics	2. Offered storage array shall be flexible on both Scale-up and Scale-out using array in-built firmware enabled clustering technology. Offered storage array shall be scalable to at-least 200TB capacity in scale-up and at-least 3PB in scale-out. Vendor shall provide the required documentary proof for the in-built firmware enabled clustering technology.	**Change Request** Please also allow a storage with integrated NAS funtion at **hardware level** instead of a storage array + discreet NAS gateway. **Justification:** With NAS header, scale-out OR scale-up cannot be achieved. A NAS header will create additional hop to the flow of data => additional latency. A NAS header cannot support seamless upgrade to next model. We will propose a unified storage which will support Scale-up, Scale-out for NAS function. The number of equipment (one storage + two header + two general purpose O.S.) will be replaced with one dual-controller storage running O.S. at firmware level	No Change.
39	CENTRAL NAS Infrastructure for Bioinformatics	1. Offered storage array shall have dual controller and to be supplied with at- least 128GB Data Cache per Controller for read and write operations. 2. Write operations shall be completely protected and there shall be no data loss in case of power failure. This mechanism must not rely on batteries.	1.Proposed solution has **192GB** cache acorss controllers and comes with capabilities to upgarde controller without disrupting the data. 2. There is a battery backup unit which protects cache in case of power failure. **Query** - Can you please hightlight the application and wokrload Details that required 192GB cache per controller and also the IOPS requirment. Our Proposed solution supports data in place Controller upgrades to higher models and can support up to 8PB raw capacity and 768GB cache across controllers using the same.	**Changes as per below :** Cache: 1. Offered storage array shall have dual controller and to be supplied with at-least 128GB DATA Cache per Controller or 256 GB DATA Cache across Storage Array for read and write operations. Vendor shall provide additional 16TB usable flash cache or 20 TB Usable Capacity using NVME Drives in Auto Tiering with SAS Drives (Auto Tiering of NVME + SAS Drives) **Answer :** We Intend to Build an AI Lab, we have mentioned our minimum requirements in the RFP, if bidder can propose higher scalibility storage solution, it will be surely accepted.
40	CENTRAL NAS Infrastructure for Bioinformatics	**Disk Drive Support and Encryption:** 1. Offered Storage array shall support various capacities of NVME / SSD / SAS drives.	**Clarification Sought** From the phrase "NVMe / SAS / SSD drives", we understand that either NVMe SSD or SAS HDD or SSD (SAS interface or SATA interface) can be provided. The SAS HDD shall be SAS 7200rpm disks (also referred to as NL-SAS). Kindly confirm or clarify	**Answer :** Storage Array should support NVME / SSD (SAS or SATA) SAS Drives (10K RPM or 7.2k RPM). That can address our current as well a futuristic needs for Scalibility and Performance.
40	CENTRAL NAS Infrastructure for Bioinformatics	**Disk Drive Support and Encryption:** 2. Offered Storage must support data encryption with day 1.	**Disk Drive Support and Encryption:** 2. Offered Storage array shall be supplied with **AES-256 XTS FIPS certified encryption at Granular LUN level without using encrypted SSD drives.**	No Change
40	CENTRAL NAS Infrastructure for Bioinformatics	**RAID Support:** 1. Offered Storage array shall be provided with 2-drive failure protection simultaneously. In case vendor doesn't support it then array shall be sized in RAID 1.	**RAID Support:** 1. Offered Storage array shall be provided with **3-drive** failure protection simultaneously. **In case vendor doesn't support 3-drive failure protection**, then array shall be sized in RAID 1.	No Change

Gujarat Biotechnology University
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(Clause No & Page No)	Component	Tender Specification	Representations Received from the bidders	GBU recommendations
40	CENTRAL NAS Infrastructure for Bioinformatics	Availability 1. Offered Storage model should have documented enterprise availability of 99.9999% or better. Documentary evidence of the same shall be available on public domain and same should be submitted along with the technical bid.	OEM Specific Clause Request you kindly remove this. Or amend this with 99.999% to participate	No Change.
40	CENTRAL NAS Infrastructure for Bioinformatics	**Availability** 1. Offered Storage model should have documented enterprise availability of 99.9999% or better. Documentary evidence of the same shall be available on public domain and same should be submitted along with the technical bid.	**Availability**: 1. Offered Storage model should have documented **data** availability of 99.9999% or better. Documentary evidence of the same shall be available on public domain and same should be submitted along with the technical bid.	**Changes as Below :** Availability: 1. Offered Storage model should have documented data availability of 99.9999% or better. The proposed model family must be certified to deliver 100% data availability guarantee. Documentary evidence of the same shall be available on public domain and same should be submitted along with the technical bid.
40	CENTRAL NAS Infrastructure for Bioinformatics	**Availability** 1. Offered Storage model should have documented enterprise availability of 99.9999% or better. Documentary evidence of the same shall be available on public domain and same should be submitted along with the technical bid.	1. Offered Storage model should have documented enterprise availability of **100%**. Documentary evidence of the same shall be available on public domain and same should be submitted along with the technical bid. **Justification** A 100% data availability guarantee ensures uninterrupted access to data, which is vital for business continuity and minimizing downtime costs. It helps meet regulatory requirements, making it essential for businesses reliant on constant data access. So please add this clause to the requirement.	**Changes as Below :** Availability: 1. Offered Storage model should have documented data availability of 99.9999% or better. The proposed model family must be certified to deliver 100% data availability guarantee. Documentary evidence of the same shall be available on public domain and same should be submitted along with the technical bid.
40	CENTRAL NAS Infrastructure for Bioinformatics	1. Offered Storage model should have documented enterprise availability of 99.9999% or better. Documentary evidence of the same shall be available on public domain and same should be submitted along with the technical bid. 2. There shall be minimal performance de-gradation due to a single Controller failure. Vendor shall provide the documentary proof for same. 3. There shall be minimal performance de-gradation during critical support activities like Firmware upgrade, patch upgrade etc. 4. Offered Storage array shall offer checksums that go beyond the T10-PI standard. The checksums will automatically detect and prevent errors resulting from lost/misplaced reads or writes that T10-PI and equivalent check summing systems cannot remediate	1. Offered storage shall support **99.999%** availability.Please refer data sheet of Unity XT. 2. Offered storage comes with Active-Active controller. Please refer spec sheet. 3. Offered storage will support non disruptive upgardes 4. Unity supports features equivalent to T10-PI. Please refer unity data integrity document. **Query** - can you please help us understand why you're looking for 6 9's of avaailibilty as it is very OEM specific.	**Changes as Below :** Availability: 1. Offered Storage model should have documented data availability of 99.9999% or better. The proposed model family must be certified to deliver 100% data availability guarantee. Documentary evidence of the same shall be available on public domain and same should be submitted along with the technical bid.
40	CENTRAL NAS Infrastructure for Bioinformatics	2. Offered Storage must support data encryption with day 1.	2. Offered Storage must support data **at rest and in flight** encryption with day 1. **Justification:** Since RFP demands for replication.	No Changes
40	CENTRAL NAS Infrastructure for Bioinformatics	4. Offered Storage array shall offer checksums that go beyond the T10-PI standard. The checksums will automatically detect and prevent errors resulting from lost/misplaced reads or writes that T10-PI and equivalent check summing systems cannot remediate	This is an OEM specific clause , kindly delete this clause.	No Changes

Gujarat Biotechnology University
Prebid-Representations (Prebid dated 24-10-2024 at 11:00 am)
Bid No. : GBU/IT/Server/2024-25 dated 14-10-2024
Item Name: RFP for supplying, installing & commissioning of Servers,Storage, Network Switches, Smart Rack, and UPScomponents

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40	CENTRAL NAS Infrastructure for Bioinformatics	**HyperVisor Integration** Monitoring and analytics engine integration with Hypervisor a. Offered monitoring and analytics engine shall be tightly integrated with Hypervisor layer and shall be certified to work with at-least VMware. b. Monitoring and integration tool shall provide AI-based recommendations to improve Hypervisor infrastructure health. c. Monitoring and integration tool shall have capability to identify the top VMs which are contributing towards maximum IOs and Latency.	This is an OEM specific clause , kindly delete this clause.	No Changes
42	CENTRAL NAS Infrastructure for Bioinformatics	**HyperVisor Integration** b. Monitoring and integration tool shall provide AI-based recommendations to improve Hypervisor infrastructure health.	**Query** We request GBU to elaborate the requirement "**improve Hypervisor infrastructure health**" in terms of storage monitoring.	Answer : We want IT Setup Monitoring Management and Monitoring Tool to recommend any changes required for finetuning of Infrastructure.
44	CENTRAL NAS Infrastructure for Bioinformatics	**Thin Provisioning and Space optimization** 1. Offered Storage shall support critical storage efficiency features - inline de- duplication, compression, thin provisioning at controller level. 2. Offered storage shall support both non-duplicated as well as duplicated volumes at the same time within the array. 3. Offered Storage shall support both non-compressed as well as compressed volumes at the same time within the array.	OEM specific Clause Request you kindly remove this.	No Changes
44	CENTRAL NAS Infrastructure for Bioinformatics	**Thin Provisioning and Space optimization** 1. Offered Storage shall support critical storage efficiency features - inline de- duplication, compression, thin provisioning at controller level. 2. Offered storage shall support both non-duplicated as well as duplicated volumes at the same time within the array. 3. Offered Storage shall support both non-compressed as well as compressed volumes at the same time within the array.	1. Offered Storage supports critical storage efficiency features - inline de-duplication, compression, thin provisioning at controller/Software level. Refer under All Inclusive base software on page 6/10 of Unity XT Spec Sheet. **Query** -Can you please help us understand what is the need disabling Deduplication and compression on certain volumnes?Also this is very OEM specific. we recommend having Deduplication and compression on for data/Storage efficiency	No Changes
45	CENTRAL NAS Infrastructure for Bioinformatics	**Snapshot / Point in time copy** Offered Storage array shall support more than 1000 Snapshots per LUN / Volume. Vendor shall use efficient performance technology like re-direct on write or better.	1000 Snapshots per LUN/Volume is OEM Specific Clause **Request you kindly remove this or amend this with :** Offered Storage array shall support more than 1000 Snapshots per LUN / Volume or Per Array.	No Changes
45	CENTRAL NAS Infrastructure for Bioinformatics	**Snapshot / Point in time copy** Offered Storage array shall support more than 1000 Snapshots per LUN / Volume. Vendor shall use efficient performance technology like re-direct on write or better.	Offered storage shall be provided with 1000 Snapshots per array. Please help us understand why 1000 Snapshots are required per volumne/LUN.As this is a very OEM specifc feature.	No Changes
45	CENTRAL NAS Infrastructure for Bioinformatics	**NAS Headers** Offered Storage Array shall be supplied with Dual NAS Headers with Microsoft Windows NAS, each NAS Header having atleast 16 Cores, 128 GB RAM, 2 x 960 Gb NVME, 2 x 25G SFP28 Port, Redundant Power supply and other relevant configuration in NSPOF configuration	**Suggestion :** Offered storage already comes with Native NAS functionalities and no additonal NAS headers are required.	No Changes
45	CENTRAL NAS Infrastructure for Bioinformatics	**NAS Headers** Offered Storage Array shall be supplied with Dual NAS Headers with Microsoft Windows NAS, each NAS Header having atleast 16 Cores, 128 GB RAM, 2 x 960 Gb NVME, 2 x 25G SFP28 Port, Redundant Power supply and other relevant configuration in NSPOF configuration	**Suggestion :** Every OEM 's has its own architecture, we do not require separate hardware for giving NAS functionality . We can offer both NAS and SAN functionality within same storage and using same OS for both NAS and SAN which maked management for the customer easy and seamless. In the given architecture, NAS funcationality is given by gateways.	No Changes

Gujarat Biotechnology University

Prebid-Representations (Prebid dated 24-10-2024 at 11:00 am)

Bid No. : GBU/IT/Server/2024-25 dated 14-10-2024

Item Name: RFP for supplying, installing & commissioning of Servers,Storage, Network Switches, Smart Rack, and UPScomponents

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45	CENTRAL NAS Infrastructure for Bioinformatics	**NAS Headers** Offered Storage Array shall be supplied with Dual NAS Headers with Microsoft Windows NAS, each NAS Header having atleast 16 Cores, 128 GB RAM, 2 x 960 Gb NVME, 2 x 25G SFP28 Port, Redundant Power supply and other relevant configuration in NSPOF configuration	**Change Request** Please also allow a storage with integrated NAS funtion at **hardware level** instead of a storage array + discreet NAS gateway. **Justification:** With NAS header, scale-out OR scale-up cannot be achieved. A NAS header will create additional hop to the flow of data => additional latency. A NAS header cannot support seamless upgrade to next model. We will propose a unified storage which will support Scale-up, Scale-out for NAS function. The number of equipment (one storage + two header + two general purpose O.S.) will be replaced with one dual-controller storage running O.S. at firmware level	**Changes as Below :** NAS Headers Offered Storage Array shall be supplied with Dual NAS Headers with Microsoft Windows NAS, each NAS Header having atleast 16 Cores, 128 GB RAM, 2 x 960 Gb NVME, 2 x 25G SFP28 Port, 1 x Dual Port 32 Gbps FC HBA, Redundant Power supply and other relevant configuration in NSPOF configuration
45	CENTRAL NAS Infrastructure for Bioinformatics	**NAS Headers** Offered Storage Array shall be supplied with Dual NAS Headers with Microsoft Windows NAS, each NAS Header having atleast 16 Cores, 128 GB RAM, 2 x 960 Gb NVME, 2 x 25G SFP28 Port, Redundant Power supply and other relevant configuration in NSPOF configuration	**Observation** If GBU allows us to propose purpose built NAS, the number of components (one storage + two header + two general purpose O.S.) can be replaced with one storage.	**Changes as Below :** NAS Headers Offered Storage Array shall be supplied with Dual NAS Headers with Microsoft Windows NAS, each NAS Header having atleast 16 Cores, 128 GB RAM, 2 x 960 Gb NVME, 2 x 25G SFP28 Port, 1 x Dual Port 32 Gbps FC HBA, Redundant Power supply and other relevant configuration in NSPOF configuration
45	CENTRAL NAS Infrastructure for Bioinformatics	**NAS Headers** Offered Storage Array shall be supplied with Dual NAS Headers with Microsoft Windows NAS, each NAS Header having atleast 16 Cores, 128 GB RAM, 2 x 960 Gb NVME, 2 x 25G SFP28 Port, Redundant Power supply and other relevant configuration in NSPOF configuration	1. offered storage already comes with Native NAS functionalities and no additonal NAS headers are required. Our recommendation would be to elimate the additonal cost and management of another NAS headers and to go for Storage where the Protocals supports is simply embedded within the storage itself instead of having to add More NAS hearder as the architure will be more simplier and easier to manage.	**Changes as Below :** NAS Headers Offered Storage Array shall be supplied with Dual NAS Headers with Microsoft Windows NAS, each NAS Header having atleast 16 Cores, 128 GB RAM, 2 x 960 Gb NVME, 2 x 25G SFP28 Port, 1 x Dual Port 32 Gbps FC HBA, Redundant Power supply and other relevant configuration in NSPOF configuration
46	CENTRAL NAS Infrastructure for Bioinformatics	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers. OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers only **and under any circumstances can't be offloaded / subcontracted to any Service Partner of the OEM.** OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	No Changes

Gujarat Biotechnology University
Prebid-Representations (Prebid dated 24-10-2024 at 11:00 am)
Bid No. : GBU/IT/Server/2024-25 dated 14-10-2024
Item Name: RFP for supplying, installing & commissioning of Servers,Storage, Network Switches, Smart Rack, and UPScomponents

(Clause No & Page No)	Component	Tender Specification	Representations Received from the bidders	GBU recommendations
-	CENTRAL NAS Infrastructure for Bioinformatics	Offered Storage array shall support heterogeneous storage virtualization natively for vendors like, but not limited to, EMC, HP, IBM, Hitachi, Netapp etc. Storage should be supplied with Unlimited capacity of virtualization license for existing storage.	**Addition of Clause** Offered Storage array shall support heterogeneous storage virtualization natively for vendors like, but not limited to, EMC, HP, IBM, Hitachi, Netapp etc. Storage should be supplied with Unlimited capacity of virtualization license for existing storage. **Justification** Including storage virtualization in storage specifications enhances resource utilization and simplifies management by providing centralized control over multiple devices. It offers flexibility and scalability for easy expansion, improves data protection through efficient backup and recovery, and reduces overall costs by maximizing existing hardware. Additionally, it optimizes performance through load balancing and supports various storage types, making it essential for modern storage strategies.	No Changes
-	CENTRAL NAS Infrastructure for Bioinformatics	The storage should have Symmetric Active-Active Controller architecture where a LUN should be accessible by all the controllers simultaneously.	**Addition of Clause** The storage should have Symmetric Active-Active Controller architecture where a LUN should be accessible by all the controllers simultaneously. **Justification** A Symmetric Active-Active Controller architecture in SAN storage allows all controllers to access LUNs simultaneously, which leads to higher availability, improved load balancing, reduced latency, simpler management, and better scalability. It ensures that the storage infrastructure is robust, fault-tolerant, and capable of handling high-performance workloads without downtime or performance bottlenecks.	No Changes
-	CENTRAL NAS Infrastructure for Bioinformatics	Detailed Specs as per CENTRAL NAS Infrastructure for Bioinformatics	You have asked for NAS Storage of same OEM as server for the HPC Cluster Scenario. This is not an ideal solution and NAS will create performance bottlenecks. For performance based HPC Cluster Solution, we recommend to use Parallel File Storage (PFS System) wherein all your nodes will be able to access this PFS Storage simultaneously and it will also give you overall much better and higher performance as compared to the traditional NAS Storage Boxes. Kindly add PFS Storage Solution.	This Suggestion is unsubstaintiated as we are Building AI Lab.

	A	B	C	D	E
1			Gujarat Biotechnology University		
2			Prebid-Representations (Prebid dated 24-10-2024 at 11:00 am)		
3			Bid No. : GBU/IT/Server/2024-25 dated 14-10-2024		
4			Item Name: RFP for supplying, installing & commissioning of Servers,Storage, Network Switches, Smart Rack, and UPScomponents		

	A (Clause No & Page No)	B Component	C Tender Specification	D Representations Received from the bidders	E GBU recommendations
5					
6	29	AI SERVER NODE for Bioinformatics with GPU.	**Chasis** - 2U Rack Mountable	Kindly allow 4U Rack Mount Form factor here.	No Changes
7	29	AI SERVER NODE for Bioinformatics with GPU.	**Memory** - 1 TB DIMMS scalable up to 4.0 TB or Higher using DDR5 Registered DIMM (RDIMM) operating at 4800 MT/s or more.	Incase of AMD servers, Maximum **3 TB Memory** is supported. We request you to kindly ammend the same.	No Changes
8	29	AI SERVER NODE for Bioinformatics with GPU.	**Memory** - 1 TB DIMMS scalable up to 4.0 TB or Higher using DDR5 Registered DIMM (RDIMM) operating at 4800 MT/s or more.	**Memory**: **32 DIMM slots or Higher**. 1 TB DIMMS scalable up to **8.0 TB or Higher** using DDR5 Registered DIMM (RDIMM) operating at **5600 MT/s or more.**	**Partial Change Accepted Memory**: **32 DIMM slots or Higher**. 1 TB DIMMS scalable up to **4.0 TB or Higher** using DDR5 Registered DIMM (RDIMM) operating at **5600 MT/s or more.**
9	29	AI SERVER NODE for Bioinformatics with GPU.	**Memory** - 1 TB DIMMS scalable up to 4.0 TB or Higher using DDR5 Registered DIMM (RDIMM) operating at 4800 MT/s or more.	Upto **3tb** with 128 DIMMS.The maximum slot in **AMD servers** are **24**.	No Changes
10	29	AI SERVER NODE for Bioinformatics with GPU.	**RAID Controller** Embedded / PCIe based RAID controller with 8GB Flash backed write cache supporting RAID 0, 1, 5, 6, 10, 50, 60. Must support mix-and-match SAS, SATA, and NVMe drives to the same controller. Controller must support 6G SATA, 12G SAS, 16G NVMe.	Kindly allow RAID Cards with 4 GB Cache as 8 GB Cache is restrictive and available with few OEM's only. Our offered controller supports SAS/SATA/NVMe but at a time it supports either 4 NVMe OR Multiple SAS/SATA Drives. Kindly help to clarify whether this is acceptable or not.	No Changes
11	29	AI SERVER NODE for Bioinformatics with GPU.	**Networking features** Server should be provisioned with below networking cards from day one: 1. 1Gb 4-port network adaptors 2. 2 x 10/25Gb 2-port SFP28 Ethernet adaptor Infiniband Options Support for future expansions : 100Gb or 200Gb Single or Dual port Adapter	As discussed in the Pre-Bid Meeting that you want to create a HPC Cluster in this scenario, so wanted to know that you are planning to keep 25G Ethernet as Primary Interconnect ? If yes then this is not an ideal solution as this will create significant performance bottleneck. So, we recommend to remove 10G/25G and actually add atleast 1x IB HDR 200G port per server for obtaining a performance oriented HPC Cluster.	No Changes
12	29	AI SERVER NODE for Bioinformatics with GPU.	**Bus Slots -** Server should support up to six PCI-Express 5.0 x16 slots.	Riser Config 5, 3 x16 FH (2x Gen5) + 2 x16 LP + 1 x16 DW	No Changes
13	29	AI SERVER NODE for Bioinformatics with GPU.	**Graphics Cards & Software** Server should be capable of housing 1 x NVIDIA H100 NVL 94GB PCIe Accelerator in future within the same server chassis itself.	We can provide a server which can handle Nvidia H100 NVL (94 GB) GPU Cards. Kindly remove the criteria that the system should be NVIDIA Certified as it is restrictive to few OEM's. Also you are not asking for the GPU now, you just want the quoted server to be able to handle 1 qty. of Nvidia H100 NVL (94 GB) GPU. Kindly confirm. Also confirm you want the provision for how many such H100 NVL (94 GB) GPU's in this server ?	**Changes as per Below :** Graphics Cards & Software : Server should be supplied with minimum 1 x NVIDIA H100 NVL 94GB PCIe Accelerator.
14	30	AI SERVER NODE for Bioinformatics with GPU.	**GPU Compatibility** Proposed server make and model should be NVIDIA certified system for NVIDIA H100 NVL GPU and this information should be available on public domain.	**Change Request** We request GBU to relax this clause as below for wider participation and still ensure all the functionality: Proposed server make and model should be NVIDIA system compatible for NVIDIA H100 NVL GPU and this information should be available on OEM documents. For widening participation. We will propose servers from a vendor who have very large NVIDIA setup running successfully.	No Changes
15	30	AI SERVER NODE for Bioinformatics with GPU.	**GPU Compatibility** Proposed server make and model should be NVIDIA certified system for NVIDIA H100 NVL GPU and this information should be available on public domain.	We can provide a server which can handle Nvidia H100 NVL (94 GB) GPU Cards. Kindly remove the criteria that the system should be NVIDIA Certified as it is restrictive to few OEM's. Also you are not asking for the GPU now, you just want the quoted server to be able to handle 1 qty. of Nvidia H100 NVL (94 GB) GPU. Kindly confirm. Also confirm you want the provision for how many such H100 NVL (94 GB) GPU's in this server ?	No Changes
16	30	AI SERVER NODE for Bioinformatics with GPU.	**Interfaces** Serial - 1 (Optional) USB support with Up to 4 total: 1 front, 2 rear, 1 internal 1GbE Dedicated management port	All the servers come standard with 2x USB 3.0 (rear), 1x VGA, 1x dedicated RJ45 Management. Kindly help to amend this clause accordingly.	No Changes

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1			Gujarat Biotechnology University		
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17	30	AI SERVER NODE for Bioinformatics with GPU.	**Industry Standard Compliance:** ACPI 6.1 Compliant, PCIe 5.0 Compliant, WOL Support, Microsoft® Logo certifications, PXE Support, **Energy Star,** SMBIOS 3.1, UEFI 2.7, Redfish API IPMI 2.0, **Secure Digital 2.0**, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP v3, TLS 1.2, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), Active Directory v1.0, **ASHRAE A3/A4**	Microsoft Logo Certifications, Energy Star, Secure Digital 2.0 & ASHRAE (A3/A4) are restrictive to few OEM's. We are an Indian Manufacturer complying with the Make - In-India Policy of our Indian Government. We can submit BIS Certification for the quoted server in place of the above asked certifications. Kindly help to remove the above certifications and we humbly request you to kindly ask for BIS Certifications for the quoted server. Also, further kindly remove Triple Data Encryption Standard (3DES) as it is old and obsolete and it is being replaced by Advanced Encryption Standard (AES) which we are already complying.	**Changes as Per Below :** **Industry Standard Compliance:** ACPI 6.1 Compliant, PCIe 5.0 Compliant, WOL Support, Microsoft® Logo certifications, PXE Support, SMBIOS 3.1, UEFI 2.7, Redfish API IPMI 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP v3, TLS 1.2, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), Active Directory v1.0.
18	30	AI SERVER NODE for Bioinformatics with GPU.	**Industry Standard Compliance** - Energy Star	Engery Star does not comply with GPU/DPU **Request you kindly remove this Clause.** **Justification :** Energy Start might try to put the system in a lower power state, but the GPU/DPU may need to stay in a higher power state for performance reasons, leading to conflicts. Energy Star is a type of certificate/label which is given to the products which meet strict efficiency and it does not comply with GPU and DPU. Since GPU cosumes more power and energy.	**Changes as Per Below :** **Industry Standard Compliance:** ACPI 6.1 Compliant, PCIe 5.0 Compliant, WOL Support, Microsoft® Logo certifications, PXE Support, SMBIOS 3.1, UEFI 2.7, Redfish API IPMI 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP v3, TLS 1.2, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), Active Directory v1.0.
19	30	AI SERVER NODE for Bioinformatics with GPU.	**Industry Standard Compliance** - Energy Star	Energy Star is a type of certificate/label which is given to the products which meet strict efficiency and it does not comply with GPU and DPU. Since GPU cosumes more power and energy.	**Changes as Per Below :** **Industry Standard Compliance:** ACPI 6.1 Compliant, PCIe 5.0 Compliant, WOL Support, Microsoft® Logo certifications, PXE Support, SMBIOS 3.1, UEFI 2.7, Redfish API IPMI 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP v3, TLS 1.2, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), Active Directory v1.0.
20	30	AI SERVER NODE for Bioinformatics with GPU.	**Industry Standard Compliance:** ACPI 6.1 Compliant SMBIOS 3.1 Secure Digital 2.0	**Industry Standard Compliance:** ACPI **6.3** Compliant SMBIOS **3.2** Secure Digital **4.0**	**No Changes**

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5	**(Clause No & Page No)**	**Component**	**Tender Specification**	**Representations Received from the bidders**	**GBU recommendations**
21	30	AI SERVER NODE for Bioinformatics with GPU.	**System Security:** UEFI Secure Boot and Secure Start support, Tamper-free updates - components digitally signed and verified, Immutable Silicon Root of Trust Ability to rollback firmware, FIPS 140-2 validation, Secure erase of NAND/User data, Common Criteria certification, Configurable for PCI DSS compliance, TPM (Trusted Platform Module) 2.0 option, Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser Bezel Locking Kit option, Support for Commercial National Security Algorithms (CNSA), Chassis Intrusion detection option,Secure Recovery - recover critical firmware to known good state on detection of compromised firmware	We need clarity on what do you mean by Common Criteria Certifications here. Also kindly help to remove Bezel Locking Kit option as it is restrictive to few OEM's.	Changes as per Below : System Security: UEFI Secure Boot and Secure Start support, Tamper-free updates - components digitally signed and verified, Immutable Silicon Root of Trust Ability to rollback firmware, FIPS 140-2 validation, Secure erase of NAND/User data, Configurable for PCI DSS compliance, TPM (Trusted Platform Module) 2.0 option, Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser Bezel Locking Kit option, Support for Commercial National Security Algorithms (CNSA), Chassis Intrusion detection option,Secure Recovery - recover critical firmware to known good state on detection of compromised firmware
22	31	AI SERVER NODE for Bioinformatics with GPU.	Operating Systems and Virtualization Software Support	Requested to clarify the Operating System to be used for Container cluster for this proposed setup.	Bidder to Propose Solution with Opensource Operating System like Cent OS or Ubuntu as per Industry Standard Best Practice for AI / ML Setup.
23	31	AI SERVER NODE for Bioinformatics with GPU.	Operating Systems and Virtualization Software Support	Kindly help to confirm on which of these particular OS you want to build this HPC Cluster Solution. Also let us know the list of applications which you are working on. If any commercial application has to be installed in this HPC Cluster, then the corresponding license and the source code of the same has to be provided by you.	Bidder to Propose Solution with Opensource Operating System like Cent OS or Ubuntu as per Industry Standard Best Practice for AI / ML Setup.
24	31	AI SERVER NODE for Bioinformatics with GPU.	Operating Systems and Virtualization Software Support	**Change Request** We request GBU to relax this clause for wider OEM participation. OEM do not test systems for Oracle Linux and Oracle VM as these are used in pure Oracle environment only. Citrix (Xen hypervisor) is not in use any more. **For widening participation.** NVIDIA AI Enterprise is not used with Oracle or Citrix products. Also, we will propose servers from a vendor who have very large NVIDIA setup running successfully.	No Changes
25	31	AI SERVER NODE for Bioinformatics with GPU.	**Provisioning** 1. Should support tool to provision server using RESTful API to discover and deploy servers at scale. 2. Provision one to many servers using own scripts to discover and deploy with Scripting Tool (STK) for Windows and Linux or Scripting Tools for Windows PowerShell.	1. In how many servers do you want RESTful API's integration. We recommend to use GUI based API's for this as it will be easier to use for this. This is OEM Specific. 2. How many servers you want to configure for this as you have mentioned one to many servers ?	The Entire Proposed AI-ML Setup should get integrated with Tools and Technologies for AI-ML Setup for Integration using RESTful API.
26	31	AI SERVER NODE for Bioinformatics with GPU.	**Firmware security** 1. For firmware security, system should support remote management chip creating a fingerprint in the silicon, preventing servers from booting up unless the firmware matches the fingerprint.	Kindly amend the clause to cryptographically signed firmware updates to be provided in the quoted server.	No Changes

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5	**(Clause No & Page No)**	**Component**	**Tender Specification**	**Representations Received from the bidders**	**GBU recommendations**
27	32	AI SERVER NODE for Bioinformatics with GPU.	**Embedded Remote Management and firmware security** **6**. Remote console sharing up to 6 users simultaneously during pre-OS and OS runtime operation, Console replay - Console Replay captures and stores for replay the console video during a server's last major fault or boot sequence. Microsoft Terminal Services Integration, 128 bit SSL encryption and Secure Shell Version 2 support. Should provide support for AES and 3DES on browser. Should provide remote firmware update functionality. Should provide support for Java free graphical remote console.	This feature is restrictive to few OEM's. Also this feature of remote console is not useful for HPC Cluster Scenarios as the usage of the HPC Cluster is governed / monitored by the HPC Cluster Software Suite which includes the Cluster Management Software and the Job Scheduler so kindly remove this point.	No Changes
28	32	AI SERVER NODE for Bioinformatics with GPU.	7. Should support RESTful API integration.	In how many servers do you want RESTful API's integration. We recommend to use GUI based API's for this as it will be easier to use for this.	The Entire Proposed AI-ML Setup should get integrated with Tools and Technologies for AI-ML Setup for Integration using RESTful API.
29	32	AI SERVER NODE for Bioinformatics with GPU.	10. One-button Secure Erase designed to decommission/repurpose servers.	This feature is restrictive to few OEM's. Kindly remove this point.	Consider this clause Deleted.
30	32	AI SERVER NODE for Bioinformatics with GPU.	11. Workload Performance Advisor - Provides server tuning recommendations to improve server performance.	Kindly remove this point as this is not relevant in the HPC Cluster Scenario where multiple servers are collectively used to run any job/simulation. In HPC Cluster Scenario, the applications have to be installed & complied as per their recommended OS versions alongwith all their associated dependencies which itself ensures that the applications runs optimally.	No Changes
31	32	AI SERVER NODE for Bioinformatics with GPU.	Software should support dashboard view to quickly scan the managed resources to assess the overall health of the data center. It should provide an at-a-glance visual health summary of the resources user is authorized to view.	You are asking for only 3 servers but here you are asking for software to assess the overall health of data centres. A typical data centre has thousands of servers where this is absolutely necessary to optimize the downtime and servicing of servers. For just 3 qty. of servers this is actually not required as this unnecessarily increases the cost. Kindly remove this.	No Changes
32	32	AI SERVER NODE for Bioinformatics with GPU.	The Dashboard minimum should display a health summary of the following: • Server Profiles • Server Hardware • Appliance alerts	Kindly clarify what alerts you require here.	The Point is Self Explainatory. We need monitoring of Server Health.
33	32	AI SERVER NODE for Bioinformatics with GPU.	The Systems Management software should provide Role-based access control.	This has to be integrated with a Compatible Job Scheduler. Kindly mention Open Source SLURMs Job Scheduler to also be provided and installed by the supplier in all these 3 servers.	No Changes
34	32	AI SERVER NODE for Bioinformatics with GPU.	Management software should support integration with popular virtualization platform management software like VMware vCenter & vRealize Operations, and Microsoft System Center & Admin Center.	This is not relevant to HPC Cluster Scenario. The asked points are of HCI Solution which is completely different from your requirement of HPC Cluster as confirmed by you in the Online Pre-Bid Meeting.	No Changes
35	33	AI SERVER NODE for Bioinformatics with GPU.	Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD.	This feature is restrictive to few OEM's. Kindly remove this point.	No Changes
36	33	AI SERVER NODE for Bioinformatics with GPU.	Should help to proactively identify out-of- date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.	This feature is restrictive to few OEM's. Kindly remove this point.	No Changes

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5	(Clause No & Page No)	Component	Tender Specification	Representations Received from the bidders	GBU recommendations
37	33	AI SERVER NODE for Bioinformatics with GPU.	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers. OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers only **and under any circumstances can't be offloaded / subcontracted to any Service Partner of the OEM**. OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	No Changes
38	33	AI SERVER NODE for Bioinformatics with GPU.	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers. OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	Kindly ask for OEM MAF for all components like Servers, Storage, Switch and the Network Racks.	it has been already asked in Bidder Eligibility.

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(Clause No & Page No)	Component	Tender Specification	Representations Received from the bidders	GBU recommendations
24	SERVER NODE for Bioinformatics without GPU.	**Chasis** - 2U Rack Mountable	Kindly allow 4U Rack Mount Form factor here.	No Changes
24	SERVER NODE for Bioinformatics without GPU.	**Memory** - 1 TB DIMMS scalable up to 4.0 TB or Higher using DDR5 Registered DIMM (RDIMM) operating at 4800 MT/s or more.	Incase of AMD servers, Maximum **3 TB Memory** is supported. We request you to kindly ammend the same.	No Changes
24	SERVER NODE for Bioinformatics without GPU.	**Memory** - 1 TB DIMMS scalable up to 4.0 TB or Higher using DDR5 Registered DIMM (RDIMM) operating at 4800 MT/s or more.	Upto **3tb** with 128 DIMMS.The maximum slot in **AMD servers** are **24**.	No Changes
24	SERVER NODE for Bioinformatics without GPU.	**Memory** - 1 TB DIMMS scalable up to 4.0 TB or Higher using DDR5 Registered DIMM (RDIMM) operating at 4800 MT/s or more.	**Memory**: **32 DIMM slots or Higher**. 1 TB DIMMS scalable up to **8.0 TB or Highe**r using DDR5 Registered DIMM (RDIMM) operating at **5600 MT/s or more**.	**Partial Change Accepted** **Memory**: **32 DIMM slots or Higher**. 1 TB DIMMS scalable up to **4.0 TB or Higher** using DDR5 Registered DIMM (RDIMM) operating at **5600 MT/s or more**.
24	SERVER NODE for Bioinformatics without GPU.	**Bus Slots -** Server should support up to six PCI-Express 5.0 x16 slots.	Riser Config 5, 3 x16 FH (2x Gen5) + 2 x16 LP + 1 x16 DW	No Changes
24	SERVER NODE for Bioinformatics without GPU.	**RAID Controller** Embedded / PCIe based RAID controller with 8GB Flash backed write cache supporting RAID 0, 1, 5, 6, 10, 50, 60. Must support mix-and-match SAS, SATA, and NVMe drives to the same controller. Controller must support 6G SATA, 12G SAS, 16G NVMe.	Kindly allow RAID Cards with 4 GB Cache as 8 GB Cache is restrictive and available with few OEM's only. Our offered controller supports SAS/SATA/NVMe but at a time it supports either 4 NVMe OR Multiple SAS/SATA Drives. Kindly help to clarify whether this is acceptable or not.	No Changes
24	SERVER NODE for Bioinformatics without GPU.	**Networking features** Server should be provisioned with below networking cards from day one: 1. 1Gb 4-port network adaptors 2. 2 x 10/25Gb 2-port SFP28 Ethernet adaptor Infiniband Options Support for future expansions : 100Gb or 200Gb Single or Dual port Adapter	As discussed in the Pre-Bid Meeting that you want to create a HPC Cluster in this scenario, so wanted to know that you are planning to keep 25G Ethernet as Primary Interconnect ? If yes then this is not an ideal solution as this will create significant performance bottleneck. So, we recommend to remove 10G/25G and actually add atleast 1x IB HDR 200G port per server for obtaining a performance oriented HPC Cluster.	No Changes
25	SERVER NODE for Bioinformatics without GPU.	**GPU Compatibility** Proposed server make and model should be NVIDIA certified system for NVIDIA H100 NVL GPU and this information should be available on public domain.	We can provide a server which can handle Nvidia H100 NVL (94 GB) GPU Cards. Kindly remove the criteria that the system should be NVIDIA Certified as it is restrictive to few OEM's. Also you are not asking for the GPU now, you just want the quoted server to be able to handle 1 qty. of Nvidia H100 NVL (94 GB) GPU. Kindly confirm. Also confirm you want the provision for how many such H100 NVL (94 GB) GPU's in this server ?	No Changes
25	SERVER NODE for Bioinformatics without GPU.	**GPU Compatibility** Proposed server make and model should be NVIDIA certified system for NVIDIA H100 NVL GPU and this information should be available on public domain.	**Change Request** We request GBU to relax this clause as below for wider participation and still ensure all the functionality: Proposed server make and model should be NVIDIA system compatible for NVIDIA H100 NVL GPU and this information should be available on OEM documents. For widening participation. We will propose servers from a vendor who have very large NVIDIA setup running successfully.	No Changes
25	SERVER NODE for Bioinformatics without GPU.	**Interfaces** Serial - 1 (Optional) USB support with Up to 4 total: 1 front, 2 rear, 1 internal 1GbE Dedicated management port	All the servers come standard with 2x USB 3.0 (rear), 1x VGA, 1x dedicated RJ45 Management. Kindly help to amend this clause accordingly.	No Changes
25	SERVER NODE for Bioinformatics without GPU.	**Industry Standard Compliance:** ACPI 6.1 Compliant, PCIe 5.0 Compliant, WOL Support, Microsoft® Logo certifications, PXE Support, Energy Star, SMBIOS 3.1, UEFI 2.7, Redfish API IPMI 2.0, Secure Digital 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP v3, TLS 1.2, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), Active Directory v1.0, ASHRAE A3/A4	Microsoft Logo Certifications, Energy Star, Secure Digital 2.0 & ASHRAE (A3/A4) are restrictive to few OEM's. We are an Indian Manufacturer complying with the Make - In- India Policy of our Indian Government. We can submit BIS Certification for the quoted server in place of the above asked certifications. Kindly help to remove the above certifications and we humbly request you to kindly ask for BIS Certifications for the quoted server. Also, further kindly remove Triple Data Encryption Standard (3DES) as it is old and obsolete and it is being replaced by Advanced Encryption Standard (AES) which we are already complying.	**Changes as Per Below :** **Industry Standard Compliance:** ACPI 6.1 Compliant, PCIe 5.0 Compliant, WOL Support, Microsoft® Logo certifications, PXE Support, SMBIOS 3.1, UEFI 2.7, Redfish API IPMI 2.0, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), SNMP v3, TLS 1.2, DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), Active Directory v1.0.
25	SERVER NODE for Bioinformatics without GPU.	**Industry Standard Compliance:** ACPI 6.1 Compliant SMBIOS 3.1 Secure Digital 2.0	**Industry Standard Compliance:** ACPI **6.3** Compliant SMBIOS **3.2** Secure Digital **4.0**	**No Changes**

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(Clause No & Page No)	Component	Tender Specification	Representations Received from the bidders	GBU recommendations
25	SERVER NODE for Bioinformatics without GPU.	**System Security:** UEFI Secure Boot and Secure Start support, Tamper-free updates - components digitally signed and verified, Immutable Silicon Root of Trust Ability to rollback firmware, FIPS 140-2 validation, Secure erase of NAND/User data, Common Criteria certification, Configurable for PCI DSS compliance, TPM (Trusted Platform Module) 2.0 option, Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser Bezel Locking Kit option, Support for Commercial National Security Algorithms (CNSA), Chassis Intrusion detection option,Secure Recovery - recover critical firmware to known good state on detection of compromised firmware	We need clarity on what do you mean by Common Criteria Certifications here. Also kindly help to remove Bezel Locking Kit option as it is restrictive to few OEM's.	**Changes as per Below :** System Security: UEFI Secure Boot and Secure Start support, Tamper-free updates - components digitally signed and verified, Immutable Silicon Root of Trust Ability to rollback firmware, FIPS 140-2 validation, Secure erase of NAND/User data, Configurable for PCI DSS compliance, TPM (Trusted Platform Module) 2.0 option, Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser Bezel Locking Kit option, Support for Commercial National Security Algorithms (CNSA), Chassis Intrusion detection option,Secure Recovery - recover critical firmware to known good state on detection of compromised firmware
26	SERVER NODE for Bioinformatics without GPU.	**Operating Systems and Virtualization Software Support**	Requested to clarify the Operating System to be used for deploying Container cluster for this proposed setup.	Bidder to Propose Opensource Operating System like Cent OS or Ubuntu as per Industry Standard Best Practice for AI / ML Setup.
26	SERVER NODE for Bioinformatics without GPU.	**Operating Systems and Virtualization Software Support**	Kindly help to confirm on which of these particular OS you want to build this HPC Cluster Solution. Also let us know the list of applications which you are working on. If any commercial application has to be installed in this HPC Cluster, then the corresponding license and the source code of the same has to be provided by you.	Bidder to Propose Opensource Operating System like Cent OS or Ubuntu as per Industry Standard Best Practice for AI / ML Setup.
26	SERVER NODE for Bioinformatics without GPU.	**Operating Systems and Virtualization Software Support**	**Change Request** We request GBU to relax this clause for wider OEM participation. OEM do not test systems for Oracle Linux and Oracle VM as these are used in pure Oracle environment only. Citrix (Xen hypervisor) is not in use any more. **For widening participation.** NVIDIA AI Enterprise is not used with Oracle or Citrix products. Also, we will propose servers from a vendor who have very large NVIDIA setup running successfully.	No Changes
26	SERVER NODE for Bioinformatics without GPU.	**Provisioning** 1. Should support tool to provision server using RESTful API to discover and deploy servers at scale. 2. Provision one to many servers using own scripts to discover and deploy with Scripting Tool (STK) for Windows and Linux or Scripting Tools for Windows PowerShell.	1. In how many servers do you want RESTful API's integration. We recommend to use GUI based API's for this as it will be easier to use for this. This is OEM Specific. 2. How many servers you want to configure for this as you have mentioned one to many servers ?	The Entire Proposed AI-ML Setup should get integrated with Tools and Technologies for AI-ML Setup for Integration using RESTful API.
26	SERVER NODE for Bioinformatics without GPU.	**Firmware security** 1. For firmware security, system should support remote management chip creating a fingerprint in the silicon, preventing servers from booting up unless the firmware matches the fingerprint.	Kindly amend the clause to cryptographically signed firmware updates to be provided in the quoted server.	No Changes
27	SERVER NODE for Bioinformatics without GPU.	**Embedded Remote Management and firmware security** 6. Remote console sharing up to 6 users simultaneously during pre-OS and OS runtime operation, Console replay - Console Replay captures and stores for replay the console video during a server's last major fault or boot sequence. Microsoft Terminal Services Integration, 128 bit SSL encryption and Secure Shell Version 2 support. Should provide support for AES and 3DES on browser. Should provide remote firmware update functionality. Should provide support for Java free graphical remote console.	This feature is restrictive to few OEM's. Also this feature of remote console is not useful for HPC Cluster Scenarios as the usage of the HPC Cluster is governed / monitored by the HPC Cluster Software Suite which includes the Cluster Management Software and the Job Scheduler so kindly remove this point.	No Changes
27	SERVER NODE for Bioinformatics without GPU.	7. Should support RESTful API integration.	In how many servers do you want RESTful API's integration. We recommend to use GUI based API's for this as it will be easier to use for this.	The Entire Proposed AI-ML Setup should get integrated with Tools and Technologies for AI-ML Setup for Integration using RESTful API.
27	SERVER NODE for Bioinformatics without GPU.	10. One-button Secure Erase designed to decommission/repurpose servers.	This feature is restrictive to few OEM's. Kindly remove this point.	Consider this clause Deleted.

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(Clause No & Page No)	Component	Tender Specification	Representations Received from the bidders	GBU recommendations
27	SERVER NODE for Bioinformatics without GPU.	11. Workload Performance Advisor - Provides server tuning recommendations to improve server performance.	Kindly remove this point as this is not relevant in the HPC Cluster Scenario where multiple servers are collectively used to run any job/simulation. In HPC Cluster Scenario, the applications have to be installed & complied as per their recommended OS versions alongwith all their associated dependencies which itself ensures that the applications runs optimally.	No Changes
27	SERVER NODE for Bioinformatics without GPU.	Software should support dashboard view to quickly scan the managed resources to assess the overall health of the data center. It should provide an at-a-glance visual health summary of the resources user is authorized to view.	You are asking for only 3 servers but here you are asking for software to assess the overall health of data centres. A typical data centre has thousands of servers where this is absolutely necessary to optimize the downtime and servicing of servers. For just 3 qty. of servers this is actually not required as this unnecessarily increases the cost. Kindly remove this.	No Changes
27	SERVER NODE for Bioinformatics without GPU.	The Dashboard minimum should display a health summary of the following: • Server Profiles • Server Hardware • Appliance alerts	Kindly clarify what alerts you require here.	The Point is Self Explainatory. We need monitoring of Server Health.
27	SERVER NODE for Bioinformatics without GPU.	The Systems Management software should provide Role-based access control.	This has to be integrated with a Compatible Job Scheduler. Kindly mention Open Source SLURMs Job Scheduler to also be provided and installed by the supplier in all these 3 servers.	No Changes
27	SERVER NODE for Bioinformatics without GPU.	Management software should support integration with popular virtualization platform management software like VMware vCenter & vRealize Operations, and Microsoft System Center & Admin Center.	This is not relevant to HPC Cluster Scenario. The asked points are of HCI Solution which is completely different from your requirement of HPC Cluster as confirmed by you in the Online Pre-Bid Meeting.	No Changes
28	SERVER NODE for Bioinformatics without GPU.	Should help provide proactive notification of actual or impending component failure alerts on critical components like CPU, Memory and HDD.	This feature is restrictive to few OEM's. Kindly remove this point.	No Changes
28	SERVER NODE for Bioinformatics without GPU.	Should help to proactively identify out-of- date BIOS, drivers, and Server Management agents and enable the remote update of system software/firmware components.	This feature is restrictive to few OEM's. Kindly remove this point.	No Changes
28	SERVER NODE for Bioinformatics without GPU.	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers. OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers only **and under any circumstances can't be offloaded / subcontracted to any Service Partner of the OEM.** OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	No Changes
28	SERVER NODE for Bioinformatics without GPU.	**Warranty & Installation Services from OEM:** 5Years 24x7x365 onsite comprehensive OEM Warranty. Warranty and Installation Services including break-fix, diagnosis, call-logging, reporting, fault identification, fault rectification, part replacement, configuration, spare management, spare movement etc. all pertaining to supplied hardware infrastructure have to be mandatorily owned and delivered by OEM Engineers. OEM should furnish undertaking on letterhead duly signed by company director or company secretary confirming the same at the time of bid submission.	Kindly ask for OEM MAF for all components like Servers, Storage, Switch and the Network Racks.	it has been already asked in Bidder Eligibility.

Gujarat Biotechnology University

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Item Name: RFP for supplying, installing & commissioning of Servers,Storage, Network Switches, Smart Rack, and UPScomponents

(Clause No & Page No)	Component	Tender Specification	Representations Received from the bidders	GBU recommendations
49, 1.1	Smart Rack with LCD Console	This specification covers Intelligent Integrated Smart Rack Infrastructure, standalone system design, engineering, manufacture, assembly, testing at manufacturer's works, supply, delivery at site, unloading, handling, proper storage at site, erection, testing and commissioning at site of complete infrastructure for the proposed Smart Rack solution to be installed at Rastriya Raksha Shakti University, Ahmedabad as detailed in the specification, complete with all accessories required for efficient and trouble-free operations	We hereby request to clarify for delivery and installation location	**Gift City, Gandhinagar Campus.**
49, 2.1	Smart Rack with LCD Console	The Integrated Smart Rack Solution with inbuilt hot and cold aisle containment of 1 rack should cater IT load up to 7 kW with N+1 Redundancy.	The Integrated Smart Rack Solution with inbuilt hot and cold aisle containment of 1 rack should cater IT load up to 7 kW with **N+1/Active Redundancy**. **Justification:** Active redundancy leads to higher energy efficiency & better air flow to the IT equipments	**Changes to be Read as Below :** The Integrated Smart Rack Solution with inbuilt hot and cold aisle containment of 1 rack should cater IT load up to 7 kW with N+1 / Active Redudancy.
50, 2.3	Smart Rack with LCD Console	The Integrated smart rack solution must be CE Certified.	It is recommended to include UL certification.	No Change
50, 2.4	Smart Rack with LCD Console	The critical components like UPS, PAC cooling unit, Rack, rack PDU & Monitoring unit should be from same & single OEM for better integration & service support.	Request you to Remove UPS from Single OEM Clause as UPS is not the Part of Smart Rack, Usually all the Items are from different and are integrated	No Changes
50, 2.4	Smart Rack with LCD Console	The critical components like UPS, PAC cooling unit, Rack, rack PDU & Monitoring unit should be from same & single OEM for better integration & service support.	The bidder should be an OEM of Precision air-conditioning, UPS, Racks, PDUs and monitoring system or should have strong tie-up as Joint venture for critical components with other OEM. Request to please consider to allow other bidder to participate	No Changes
50, 2.4	Smart Rack with LCD Console	The critical components like UPS, PAC cooling unit, Rack, rack PDU & Monitoring unit should be from same & single OEM for better integration & service support.	Request you to Remove UPS from Single OEM Clause as UPS is not the Part of Smart Rack	No Changes
50, 3.1.1	Smart Rack with LCD Console	The smart rack should be equipped with rack mounted cooling unit to provide closed loop cooling system which should be able to cool the equipment's uniformly right from 1st U to 42nd U of Rack	Horizontal flow of cold air from 1U to 47U all along the height of the smart rack.	**Changes to be Read as Below :** The smart rack should be equipped with rack mounted / vertical mounted cooling unit to provide closed loop cooling system which should be able to cool the equipment's uniformly distributed across the Rack.
50, 3.1.2	Smart Rack with LCD Console	Rack Mounted Air-Cooling unit should be of 7kW/2TR capacity, N+1 topology (02 no. of 7kW rack-based cooling unit).	Rack Mounted Air-Cooling unit should be of 7kW/2TR capacity, **N+1/Active redundant topology** (02 no. of 7kW rack-based cooling unit). **Both the Rack Mount Air conditioner units should be capable of 24 x 7 application**. **Justification**: With the recent advancements in AI, server OEMs are now offering power supplies with higher ratings and HPC/AI workload is generating more heat load, therefore Active redundancy is recommndded, also this setup/configuration leads to higher energy efficiency & better air flow to the IT equipments	**Changes to be Read as below :** Rack Mounted Air-Cooling unit should be of 7kW/2TR capacity, N+1/Active redundant topology (02 no. of 7kW rack-based cooling unit). Both the Rack Mount Air conditioner units should be capable of 24 x 7 application.
50, 3.1.2	Smart Rack with LCD Console	Rack based Air Cooling with indoor - out door design, SHR >0.9, 100% Duty cycle, scroll compressor, 9U rack mountable, electronically commutated (EC) fan, High Pressure & Low- Pressure protection, Washable filter with 80% efficiency down to 20-micron, Hydrophilic evaporator coil, ON/OFF switch at indoor unit for emergency purpose, R407C/R410A Refrigerant. The condenser/outdoor unit should comprise of scroll compressor. The unit should support ambient temperature for 0℃ to 45℃.	Inverter scroll compressors with BLDC Motor is recommended for longer life and energy saving.	No Changes : Bidder / OEM can propose Better Power Saving Technology.
50, 3.1.2	Smart Rack with LCD Console	Rack based Air Cooling with indoor - out door design, SHR >0.9, 100% Duty cycle, scroll compressor, 9U rack mountable, electronically commutated (EC) fan, High Pressure & Low- Pressure protection, Washable filter with 80% efficiency down to 20-micron, Hydrophilic evaporator coil, ON/OFF switch at indoor unit for emergency purpose, R407C/R410A Refrigerant. The condenser/outdoor unit should comprise of scroll compressor. The unit should support ambient temperature for 0℃ to 45℃.	The tender specificaiton supports the single OEM . Please allow the bidder/OEM to propose the better solution like inverter based compressor, should not occupy any "U" space . The filter are not required in closed loop Rack cooling solution, hence please remove the same from cooling specs.	**Changes as Below :** The units should be of zero U & not occupy any U space of rack height. Rack based Air Conditioner with Variable capacity scroll compressor should have following Features: Cooling System should be DX type (R410A refrigerant) Indoor unit of the cooling system should house ≥ 5 EC fan & together should deliver >2000 CMH. Outdoor unit should be with variable capacity scroll compressor. The unit should support indoor to outdoor piping up to 30 mtrs. The indoor unit should be accommodated inside the rack frame with width >100 mm

Gujarat Biotechnology University
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(Clause No & Page No)	Component	Tender Specification	Representations Received from the bidders	GBU recommendations
51, 3.2.1	Smart Rack with LCD Console	0U, Vertical Rack PDU with Unit Level monitoring, 32A x 3 Phase, 400V, 22.00kW, Vertical, (18) IEC C13, (12) IEC C19, 3m power cord with 2P+E (IP44), Black Powder Coat.	**Kindly amend as :** 0U, Vertical Rack PDU with Unit Level monitoring, 32A x 3 Phase, 400V **with minimum 30 no. Hybrid type outlet sockets Socket, 3m power cord with 3P+N+E (IP44), Black Powder Coat. All 30 outlets of hybrid nature should be utilized as either C13 or C19 outlet.** **Justification:** With the recent advancements in AI, server OEMs are now offering power supplies with higher ratings that require more C19-C20 power connections. Therefore, hybrid type outlets are recommend.	**Changes as below :** 0U, Vertical Rack PDU with Unit Level monitoring, 32A x 3 Phase, 400V with minimum 30 no. Hybrid type outlet sockets Socket, 3m power cord with 3P+N+E (IP44), Black Powder Coat. All 30 outlets of hybrid nature should be utilized as either C13 or C19 outlet.
51, 3.2.1	Smart Rack with LCD Console	0U, Vertical Rack PDU with Unit Level monitoring, 32A x 3 Phase, 400V, 22.00kW, Vertical, (18) IEC C13, (12) IEC C19, 3m power cord with 2P+E (IP44), Black Powder Coat.	As the IT load is 7 kW only hence the Single phase will be sufficient , request to please confirm on same	**Answer :** the PDU is sized as per current as well as futuristic needs for equipment that are to be housed in the RACK.
51, 3.2.1	Smart Rack with LCD Console	0U, Vertical Rack PDU with Unit Level monitoring, 32A x 3 Phase, 400V, 22.00kW, Vertical, (18) IEC C13, (12) IEC C19, 3m power cord with 2P+E (IP44), Black Powder Coat.	As the IT load mentioned in the specification is 7KW which means the PDU should be single phase with a capacity of 7.3 kva . For 22kW powder load per PDU it is recommended to have higher capacity of cooling unit . Customer to note the same.	No Changes
51, 3.2.1	Smart Rack with LCD Console	Protocols Supported: DHCP, HTTP, HTTPS, IPv4, IPv6, LDAP, NTP, RADIUS, RSTP, SSH, SMTP, SNMP (v1/v2c/v3), Syslog, TACACS+	The tender specificaiton supports the single OEM . Please allow the bidders/OEM's to propose the PDUs with better suported protocols IPv4 / IPv6, integral web server HTTP, HTTPS, SSL, SSH, NTP, Telnet TCP/IP v4 and v6, DHCP, DNS, NTP, Syslog SNMP v1, v2c und v3, Traps, FTP/SFTP (update/file transfer) OPC-UA, Modbus/TCP<(>,<)> FTP/SFTP (update/file transfer) E-mail forwarding (SMTP) User administration including rights management: Yes LDAP(S)/Radius/Active Directory connection: Yes	**Changes as below :** Protocols Supported: DHCP, HTTP, HTTPS, IPv4, IPv6, LDAP, NTP, RADIUS, SSH, SMTP, SNMP (v1/v2c/v3), Syslog, TACACS+
51, 3.2.1	Smart Rack with LCD Console	Certification/Agency Approvals: CE, EN55032 & EN55024, IEC62368-1, RoHS	Please allow bidder/OEM to propose the PDU's with updated industry standrds certification or equivalent .	**Changes as per below :** Certification/Agency Approvals: CE, EN55032 & EN55024, IEC62368-1, RoHS or Better / Latest
51, 3.3.1	Smart Rack with LCD Console	Rack mountable Power Output Device with essential breakers to be Provisioned.All input supply cables from POD unit to equipments are connected with industrial socket (male - female) with suitable rating	**Kindly accept as :** Rack/Wall mountable Power Output Device with essential breakers to be provisioned.All input supply cables from POD unit to equipments are connected with industrial socket (male - female) with suitable rating. **Justification** Request to accept Power distribution as per OEM design.	**Changes as Per Below :** Rack/Wall mountable Power Output Device with essential breakers to be provisioned.All input supply cables from POD unit to equipments are connected with industrial socket (male - female) with suitable rating.
51, 3.4.1	Smart Rack with LCD Console	Intelligent Smart Rack (02 Nos.) should include basic environmental controls:	Kindly confirm whether 1 rack or 2 rack to be considered. Pls confirm rack count to be considered	**Changes as Per Below :** Intelligent Smart Rack (01 Nos.) should include basic environmental controls:
51, 3.4.1	Smart Rack with LCD Console	Intelligent Smart Rack (02 Nos.) should include basic environmental controls:	Please confirm the rack quantity, point no 2.1 indicates single rack requirement.	**Changes as Per Below :** Intelligent Smart Rack (01 Nos.) should include basic environmental controls:
51, 3.5.2	Smart Rack with LCD Console	Front Glass door for complete 47U height visibility and rear split door with stiffener for strength	We hereby request to consider as Front Glass door for complete 42 or higher U height visibility and rear split door with stiffener for strength	**Changes as per Below :** Front Glass door for complete 42U height visibility and rear split door with stiffener for strength if Bidder / OEM are proposing In-Rack 0-U Cooling.
51, 3.5.4	Smart Rack with LCD Console	Cut outs with rubber/brush grommet on top and bottom cover of rack for cable entry	We hereby request to consider as Cut outs with rubber/brush grommet on bottom cover of rack for cable entry	**No Changes**
52, 3.6.1	Smart Rack with LCD Console	Intelligent Smart rack should have Min 26U(total)space availability for IT Equipemtns and network equipment equipment after placing Rack cooling unit, LCD KVM console, Monitoring console, electrical DB etc.	**Kinldy accept as :** Intelligent Smart rack should have Min 26U(total)space availability for IT Equipemtns and network equipment equipment after placing Rack cooling unit, LCD KVM console, Monitoring console etc. We under stand that UPS & batteries to be placed seperately .Kindly confirm	**Changes as per Below :** Intelligent Smart rack should have Min 26U(total)space availability for IT Equipemtns and network equipment equipment after placing Rack cooling unit, UPS, LCD KVM console, Monitoring console, electrical DB etc. Batteries shall be placed outside the Rack as per industry best practice.
52, 3.6.1	Smart Rack with LCD Console	Intelligent Smart rack should have Min 26U(total) space available for IT equipment's and network equipment after placing Rack cooling unit, LCD KVM console, Monitoring console, electrical DB etc.	Customer can get complete 47U usable with vertical cooling units mounted on the sides of the rack which is a ideal solution.	**No Change :** We have mentioned our Requirement, Bidder / OEM can propose better solution.

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46	TOP of Rack Switching Infra for Bioinformatics	**General Features** Switch should have integrated trusted platform module (TPM) for platform integrity to ensure the boot process is from trusted source	Each OEM having their own way of managing secure boot process. Secure Boot is a security standard that ensures a device boots only with software that is trusted by the Original Equipment Manufacturer (OEM). **Request you kindly allow Secure Boot also for platform integration.**	No Changes.
46	TOP of Rack Switching Infra for Bioinformatics	**General Features** Switch should have integrated trusted platform module (TPM) for platform integrity to ensure the boot process is from trusted source	Can we Secure the Boot Process in an alternate method? using Dell's Secure Image Download followed by Secure Boot & Secure Image Install. **Justification** : Each OEM having their own way of managing secure boot process.	No Changes.
46	TOP of Rack Switching Infra for Bioinformatics	**General Features** All mentioned features (above & below) should be available from day 1. Any license required to be factored from day 1	Please check with the Other OEM for the OS licence type (Subscription vs Perpetual)	Bidder / OEM should check If Features are default Part of Proposed Product and No Licences are required. In case of Additional Licenses needed for required functionality. Bidder / OEM can propose Perpetual License. If in case, Bidder / OEM wants to propose Subscription Licenses it should be with 7 Years of Subscription from Day 1.
46	TOP of Rack Switching Infra for Bioinformatics	**Port details:** Switch should have 24 nos. of 1G/10G/25G SFP+/SFP28 ports.	**Port details:** Switch should have **32 nos.** of 1G/10G/25G SFP+/SFP28 ports.	No Changes.
47	TOP of Rack Switching Infra for Bioinformatics	**Port details:** Switch should be populated with 2 nos. of single mode 10g transceivers from day-1	**Port details:** Switch should be populated with **8 nos. of Multimode 25G transceivers and** 2 nos. of single mode 10g transceivers from day-1	No Changes. Bidder to factor cables, connectors and accessories as per requirement of connectivity of the Proposed setup. 2 No's of Transrecievers asked are for connectivity to existing GBTU Network.
47	TOP of Rack Switching Infra for Bioinformatics	**Performance**: Should have 16GB DRAM	**Performance**: Should have 16GB DRAM **and 32GB Flash.**	**Changes as Below :** Should have 16GB DRAM and 32GB Flash or Higher
47	TOP of Rack Switching Infra for Bioinformatics	**Performance**: The switch will have at up to 1.6 Tbps or Higher switching capacity.	**Performance**: The switch will have at up to **2.4 Tbps** switching capacity.	**Changes as Below :** The switch will have at up to 2.4 Tbps switching capacity.
47	TOP of Rack Switching Infra for Bioinformatics	**General Features** IPv4 Routing entry support: 600K or more.	In a typical DC, IPv4 deploy with not more than 100 vlans and each vlan equal to 1 routes. External routes are handled with Default route and local routes don't go beyond 10K. **Request you kindly amend with : 100K or more**	No Changes
47	TOP of Rack Switching Infra for Bioinformatics	**General Features** IPv4 Routing entry support: 600K or more.	In a typical DC, IPv4 External routes are handled with Default route and local routes don't go beyond 10K. Can the Max IPv4 routes support reduced to 100K? **Justification:** In DC max number is L3 vLAN configured is 4k. So it co-relate to 4k routes. SO our ask is 100k routes because it won't required in DC.	No Changes
47	TOP of Rack Switching Infra for Bioinformatics	**General Features** IPv4 Routing entry support: 600K or more.	In a typical DC, IPv6 External routes are handled with Default route and local IPv6 routes don't go beyond 5K. Can the Max IPv6 routes support reduced to 50K? **Justification:** In DC max number is L3 vLAN configured is 4k. So it co-relate to 4k routes. SO our ask is 50k routes because it won't required in DC.	No Changes
48	TOP of Rack Switching Infra for Bioinformatics	**Resiliency and high availability** The proposed switch should support Ethernet Ring Protection Switching (ERPS) to supports rapid protection and recovery in a ring topology.	ERPS is more a Metro Ethernet Feature and in a DC, Resiliency and High Availability is achieved using BFD. **Request you kindly amend this with :** The proposed switch should support Ethernet Ring Protection Switching (ERPS) or alternate solution equivalent to ERPS to supports rapid protection and recovery in a ring topology.	**Changes as Below :** The proposed switch should support Ethernet Ring Protection Switching (ERPS) or alternate solution equivalent to ERPS to supports rapid protection and recovery in a ring topology.
48	TOP of Rack Switching Infra for Bioinformatics	**Resiliency and high availability** The proposed switch should support Ethernet Ring Protection Switching (ERPS) to supports rapid protection and recovery in a ring topology.	ERPS is more a Metro Ethernet Feature and in a DC, Resiliency and High Availability is achieved using BFD. Can we remove this point? Or have an alternate solution equivalent to ERPS? ERPS Used for the Metro ring, So this won't make any difference in the Data Cetnre	**Changes as Below :** The proposed switch should support Ethernet Ring Protection Switching (ERPS) or alternate solution equivalent to ERPS to supports rapid protection and recovery in a ring topology.
	TOP of Rack Switching Infra for Bioinformatics	Detailed Specs as per TOP of Rack Switching Infra for Bioinformatics	You are asking 25G Ethernet Switch as Primary Interconnect in a HPC Cluster Environment. 25G Ethernet will create major performance bottlenecks. In such HPC Cluster Scenarios, we need High Bandwidth and Low Latency Primary Interconnect atleast like Infiniband IB HDR 200Gbps **OR** IB NDR 200Gbps. Further, you should mention appropriate Single Port IB HDR 200G **OR** IB NDR 200G HBA cards in all the servers and appropriate qty. of similar cards in the PFS Storage Solution for building a performance oriented HPC Cluster.	No Changes. As we intend to Deploy AI/ML Setup.

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(Clause No & Page No)	Component	Tender Specification	Representations Received from the bidders	GBU recommendations
54, 1.1	UPS in HA	UPS should be true online double conversion 2U rack mountable 20 kVA in N+N redundancy.	We would like to inform you that 20KVA UPS with 2U Rack mountable form factor is not available from any UPS OEM, so hereby request to consider 3U rack mountable 20 kVA in N+N redundancy, with unity pf and Online efficiency up to 95% & eco mode efficiency 99%.	**Changes to be Read as below :** UPS should be true online double conversion 2U / 3U rack mountable 20 kVA in N+N redundancy.
54, 1.1	UPS in HA	UPS should be true online double conversion 2U rack mountable 20 kVA in N+N redundancy, with unity pf and Online efficiency up to 95% & eco mode efficiency 99%.	It is suggested to consider additional Smart rack enclosure with same asthetic to mount UPS & batteries. Additional Smart rack enclosure with same asthetic to mount UPS & batteries to save on space & provide suitable ambient to UPS & Batteries.	No Changes : Bidder / OEM can provide Additional Rack as required in their solution.
54, 1.1	UPS in HA	UPS should be true online double conversion 2U rack mountable 20 kVA in N+N redundancy, with unity pf and Online efficiency up to 95% & eco mode efficiency 99%.	Please confirm if rack mounted is compulsory	Answer : Yes, Rack Mount UPS is Compulsary
54, 1.2(d)	UPS in HA	Battery backup of 30 min per UPS (at rated capacity via 12 V VRLA/SMF Batteries. Batteries to be mounted externally in separate battery racks.	Request to consider Li- ion batteries with 30min Battery backup with 5 Year warranty instead of 12V SMF as Li-ion has lesser foot print & higher life span. Li-ion batteries has lesser foot print & higher life span and it comes with default warranty of 5 years.	No Changes : Bidder / OEM can provide better technology
54, 1.2(h)	UPS in HA	**General Parameters:** Operating Temperature (°C) = **0 ~ 50C** Relative Humidity (%RH) = 5 ~ 95, non-condensing Altitude (m) = 3000m	0-40 C	No Changes