CORRIGENDUM NOTICE

ET-NIQ-...**3163**...-DT-...**15-10-19**

The TechSheet uploaded with the NIQ No. **ET-NIQ-3122-DT-09-10-2019** Tender ID: **2019_TEZU_509762_1** is replaced with a **Revised TechSheet** due to typographical error.

The other contents of the notice remain same.

15/10/19

Assistant Registrar (GA)
Tezpur University
Memo No: TU/11-24/Pur/Qtn(ET)/2019-20/ 3163   dated:- 15-10-19
Copy for information to:
1. Webmaster, Tezpur University for uploading the notice in the website.
2. Dr. M. Venkata Satish Kumar, Department of Molecular Biology & Biotechnology, Tezpur University.
3. File
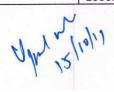
15/10/19

Assistant Registrar (GA)

Technical Specifications cum Compliance Report
(To be submitted on Company's/Firm's Letterhead Signed and Sealed)

Item: High-Performance Computing (HPC) Cluster

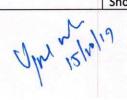| Sl No.	Item Description		Make/Model (Specify)	Compliance (Y/N)	Remarks
A	**Server enclosure with 3 Nos. of Compute Nodes. Specification of enclosure & each compute node as mentioned below**				
1	Chassis	Vendor should offer a Server chassis / enclosure-based solution which can hold dense servers (Pure CPU based compute nodes) on an average of 0.5U per Server, capable of getting mounted in a standard 19" 42U Rack (max depth of 1000mm). Each of the Server nodes should be individually serviceable, without shutting down the other Server nodes.			
2	Redundant Power Supplies	The entire solution should be offered with redundant power supplies at enclosure level.			
3	Redundant Fans	The chassis / enclosure should be configured with redundant fans			
4	GPU/Accelerators	The chassis should be able to support compute nodes with GPUs			
5	Zoning disks	The chassis should have capability to assign disks flexibly against each node using zoning capabilities. For instance, if the chassis can support say 24 SFF disks and 4 compute nodes, then the chassis should have capability to distribute more than 6 disks in some of the nodes, subject to a total of 24 disks across 4 nodes.			
6	Warranty	3 Years onsite warranty (24 x 7 call logging) by OEM			
	COMPUTE NODE				
	CPU	2 x Intel Xeon-Gold 5118 (2.3GHz/12-core/16.5 MB Cache/105W) or better			
	Chipset	Intel C622 Series Chipset or better			
	Memory Requirement	96 GB to be configured using 2666 MHz RDIMMs. Adequate DIMMs to be configured to populate all memory channels in a balanced manner. Compute node should be scalable to 16 DIMMs.			
	Memory Scalability	Should be capable of scaling up to 512 GB Memory or higher			
	Memory protection	Advanced ECC			
	Hard Disk	2 x 1 TB 7.2K RPM SAS Drives			
	Networking	2 x 1Gbps ports with PXE boot capability			
		1 x Dual Port 10G-T Card			
	Management Port	1Gbps Remote Management Port			
	PCI-Express 3.0 slots	The compute node should have capability to be configured with at least 2 no's of PCIe -Gen3 (x8/16) low profile			

		IO slots			
	OS Support	Should support RHEL6.x / SLES 11 or higher			
	Warranty	3 Years onsite warranty (24 x 7 call logging) by OEM			
B	**HPCC MASTER NODE RACK SERVER**				
1	Processors	2 X Intel Xeon 4114,2.2 GHz, 13.75MB Cache, 10C/20T(85W) Max Mem 2400MHz			
2	Chipset	Latest OEM chipset optimized for the above processor			
3	Memory	RAM(min/max): 96 GB upgradable to 768 GB DDR-4 ECC RDIMM RAM			
4	Hard Disk Drives	5 X 1 TB SAS 7.2K 2.5in Hot-plug Hard Drive			
5	HDD bays	HDD bays supporting SAS, SATA, SSD drives (Minimum HDD Support : 24 X 2.5" HDD from Day 1)			
6	Optical Drive	DVD-ROM drive (Internal Preferred)			
7	I/O slots	Minimum 6 x PCIe 3.0 slots			
8	RAID Levels	Integrated RAID controller, 1GB Cache, Support for RAID 0,1,5,6			
9	Network Interface	Dual 1GBE and Dual 10G Ethernet Interfaces (Total 4)			
10	Graphics Controller	Integrated Graphics with at least 16MB Video Memory			
11	Server Mgmt	OEM embedded controller with IPMI 2.0 compliance and Server Management Tool from the same OEM			
12	Ports	Min 3 USB ports, 1 Serial, keyboard, mouse			
13	Power Supplies	Hot Plug and Redundant Power Supply (atleast 800 watts each) to sustain above			
14	Cooling	Hot plug and redundant fans			
15	Industry standard	User-selectable power cap (subsystems throttle to maintain the specified power cap), ACPI 3.0 Compliant, PCI 2.3 compliant, PXE and WOL Support, IPv4 and IPv6 support			
16	Certifications	The quoted server models should have the following Certifications: Microsoft Windows Server2012, Microsoft Windows HPC Server 2008, Novell SUSE Linux Enterprise Server, Red Hat Enterprise Linux, Sun Solaris, Microsoft Windows Server 2012 Hyper-V, VMware vSphere Version , Citrix XenServer, FCC, UL, ROHS			
		The server OEM must be ISO-14001			
17	Form factor	Max. 2U Rack form factor with sliding rails to fit into industry standard 19" Server Rack			
18	Warranty	3 Years onsite warranty (24 x 7 call logging) by OEM			
C	**36U SERVER RACK WITH POWER BACKUP**				
1	Size	• 19" Rack: 36Ux 600mm width x 1000mm depth			

2	Build & Design	• Standard Rack configuration welded frame with 4 nos. of pillars of 1.5 mm thick CRCA sheet of 8 folded profile and welded from top to bottom for reinforcement. Top cover and bottom cover having air cooled ventilation for exhaust of hot air. Front door having provision of glass as well as perforation with adequate ventilation in the rear door. Both the Side panels are fitted with slam latches for easy removal.			
3	Certifications	• Degrees of Ingress Protection, IP 20 according to IEC 60529 or equivalent			
		• Degree of Impact Protection, IK 08 according to IEC 62262 or equivalent			
		• Corrosion Resistance through Salt Spray test according to ISO 9227 for 168 hours Protection or equivalent			
4	Power Distribution	• Single Phase			
		• 10 ft. Power Cord			
		• 400 volt clamping voltage			
		• 16 evenly spaced outlets			
		• 15 amp circuit breaker			
		• UL Approved			
		• PDU Mounting: Vertical			
C	Power backup (3PHASE IN /SINGLE PHASE OUT)				
1	Capacity	10 KVA/9 KW @ 0.9 p.f. On-Line UPS with Inbuilt Isolation Transformer.			
2	AC Input Voltage Range	300-470 V AC, 3 Phase @100% load			
3	Surge Protection Device	UPS should have inbuilt 1 Phase, Type 2 surge arrester (40kA) according to EN 61643-11. It should provide Lightning Protection (according to IEC 1312-1 and EN 62305) through equi-potential bonding and eliminate transient overvoltage, originating during atmospheric discharges or switching processes.			
		(Datasheet of SPD should be provided else bid may be rejected)			
4	Input Frequency	50Hz ± 10% (Suitable for Generators)			
5	AC Output Voltage	230 V AC, 1-phase ± 1% (Sine Wave Output)			
6	Output Frequency	50 Hz ± 0.05 Hz			
7	Overload Capacity	125% for 10 minutes, 150% for 60 seconds			
8	Harmonic Distortion	<2% for Linear Loads and <5% for non linear loads			
9	Crest Factor	Better than or equal to 4:1			
10	Isolation Transformer	UPS output should be fully isolated by double conversion and inbuilt isolation transformer within the UPS cabinet itself. External transformer shall not be considered.			
11	Indications & Audible Alarms	Mains On, Inverter On, Overload, Load On Mains, Load On Battery, Battery Low			

12	Digital Metering	LCD display for measurement of AC Voltage, Battery voltage, Battery Current, Load Current, Output frequency.			
13	Battery Back-up & Other Details	The system must be capable of providing requisite battery back-up time of **30 minutes** on each UPS,using 12V, VRLA Sealed Maintenance Free Batteries.			
		Required VAH : **8,700 VAH** for 30 minutes for each UPS			
		Battery make: EXIDE/QUANTA/ROCKET			
14	Certification	· BIS Certificate for Quoted Model			
		· CE Certification (confirming to IEC 62040-1 & IEC 62040-2 Standards)			
		· ISO 9001, ISO 14001, OHSAS 18001, ISO 27001 certified.			
		· RoHS Compliance			
		Copies of the above certifications should be submitted with the technical Bid (compulsory).			
15	After Sales Support & Manufacturer's Credibility	· UPS OEM Should have their own service Centres in Tezpur, Assam			
		· UPS OEM should have a dedicated Toll Free No. for service call logging & resolution (no. to be provided)			
		· UPS OEM should not have been blacklisted or debarred from business from any government			
16	Warranty	**2 Years onsite**			
D	**12-PORT 10G NETWORK SWITCH**				
1	Physical Interface :	Twelve 1000/10000 Mbps RJ45 ports and additional 4 x 10 Gigabit SFP+ fiber			
2	Memory :	512 MB flash; Packet buffer size: 2 MB, 1 GB SDRAM			
3	Performance :	100 Mb Latency :< 5 µs, 1000 Mb Latency : < 5 µs, 10 Gbps Latency : < 1.5 µs			
4	Throughput :	Minimum 230 Mpps (64-byte packets)			
5	Routing/Switching capacity :	Minimum 320 Gbps			
6	MAC address table size:	Min 16384 entries			
7	Network Protocol and Standards :	IEEE 802.3u 100BASE-TX, IEEE 802.3ab 1000BASE-T, IEEE 802.3z 1000BASE-X, IEEE802.3ae 10GBase Ethernet, IEEE802.3an 10GBase-T			
8	Reliability, Performance, Troubleshooting :	Port mirroring both on ingress and egress traffic, Jumbo frame support, DoS Prevention			
9	Traffic Management :	Auto Negotiation of speed and duplex modes, 801.2x Flow Control ,DHCP Client, Dynamic MAC address management, Port-based and IEEE801.2p-based QoS, QoS based on ToS (Type-of-Service), Link Aggregation			
10	Multicast Efficiency :	IGMP snooping, v1, v2 and v3, IGMP Snooping querier (6 and 24 port models			

		only), Blocking of unknown multicast traffic, Act as static multicast router port			
11	Environmental Specifications :	Operating Temperature:32 to 113F (0c to 45c)			
12	Operating Humidity:	90% Maximum relative humidity, non-condensing,			
13	Switch Management	Firmware Upgrade thru Plus Utility (TFTP)			
14		System password protection, SNMP,HTTPS			
15	Certification :	UL, FCC , Switch OEM should be present in the latest Gartner report for data center networking.			
16	Warranty	3 Years onsite			
E	CONSOLE				
1	Form Factor :	1U 19-inch Rack mountable			
2	Depth :	Short depth design of 460mm only for single console, and 2-post rack mounting available			
3	Aesthetics :	Enhanced aesthetics with molded front handle for easy sliding out the drawer			
4	Display Type :	19" Color LCD TFT			
5	Display Size (diagonal):	19" widescreen (16:10)			
6	Active area :	at least 408mm x 255mm			
7	Maximum Resolution :	1440 x 900 (60Hz)			
8	Video Input :	VGA and / or DVI			
9	Contrast Ratio :	1000:01:00			
10	Display Colors :	16.7 million			
11	Brightness (typ.) :	300			
12	Backlight	CCFL			
13	Viewing angle (H/V) :	160° x 160°			
14	Keyboard :	104 keys with number pad			
15	Pointing Device :	Integrated touchpad			
16	Keyboard Language Support :	United States, United Kingdom, Germany, France, Spain, Norway, Italy, Russia, Switzerland, Netherlands, Portugal, China, Japan, Korea, Arabia, Turkey			
17	Operating Temperature:	0°C to 55°C			
18	Storage Temperature :	-20°C to 60°C			
19	Operating Humidity :	20~90%, non-condensing			
20	Storage Humidity :	5~90%, non-condensing			
21	Operating Altitude :	16,000 ft			
22	Non-operating Altitude :	40,000 ft			
23	Shock :	10G acceleration (11ms duration)			
24	Vibration :	5~500Hz 1G RMS random vibration			
25	MTBF (hrs) :	50,000 hrs			
26	Power :	110-240V, 50~60Hz, auto-sensing			
27	Power Consumption :	Single console - Screen on: Max. 25W/Power saving mode: Max. 4W			

28	Agency Approvals :	UL, FCC & CE certified ; RoHS2 & REACH compliant			
29	Warranty	**3 Years onsite**			
F	**16-PORT KVM SWITCH**				
1	Ports	It should have a minimum of 16 ports			
2	Type	Connect computers via PS/2 and/or USB.			
3	Support	Windows, Linux, Mac OS9/OSX, Sun Microsystems.			
4	OSD	On-Screen-Display (OSD) & Cascade Chain functions.			
		OSD with intuitive menus for quick and effective navigation.			
		Advanced user profiles and configurable OSD hot key combinations			
		Multilingual OSD: English, French, German, Spanish, Italian, Russian, Simplified Chinese, Japanese			
5	Resolution	Support resolution up to 1920 x 1080			
6		Supports video resolutions Up to 1920 x 1080 / 1920 x 1200 when collecting to FHD 17" panel			
7	Expandability	Expansion : Up to 128 servers by 8-level cascade (by 16-port KVM)			
8	Hotswap Feature	Hot-pluggable: all devices connected to KVM can be added or removed at any time without shutting down the devices.			
9	Auto Scan Feature	Auto Scan video for effortless monitoring			
10	Switching	Easily switch between connected devices with: Hardware Push Button, Hot-Keys on PS/2 and/or USB keyboard, OSD menu.			
11	Hotkey	Hotkey combination: Scroll-lock, Cap-lock, Num-lock, Alt, Ctrl & Win			
12	Multi-lingual Support	Multi lingual on screen display menu			
13	Certifications	Safety approval : CUL, FCC & CE certified			
14	Cables and Accessories	Should include 12 no's of 1.8 meter cable and 4 no's of 3 meter cable. (Total 16) with all other accessories.			
15	Warranty	**3 Years onsite**			
G	**Cluster Management (commercial/open source) installation and configuration of Hardware, OS & Cluster M**				