

WEBEL TECHNOLOGY LIMITED

CORRIGENDUM – II

TENDER NO. WTL/HC/HW-SW/17-18/003 DATED 11.05.2017

1. Bill of Material (Section – H) has been revised. The revised Bill of Material (Section – H) is enclosed superseding the existing.
2. Technical Specification with Compliance Statement (Section – I) has been revised. The revised Technical Specification with Compliance Statement (Section – I) is enclosed superseding the existing.
3. BOQ has been revised. Revised BOQ uploaded.

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SECTION – H **BILL OF MATERIAL**

Sl. No.	Item Description	Qty	Unit
1.	Server	4	Nos.
2.	FCoE Switch	2	No.
3.	Firewall	2	No.
4.	Storage Device	2	No.
5.	IP KVM Switch with Monitor	2	No.
6.	42 U Rack	2	No

Bill of quantity may change at the time of ordering of Purchase Order. Detailed Technical Specifications are given in Section – I

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SECTION – I

TECHNICAL SPECIFICATION WITH COMPLIANCE STATEMENT

(Tender No. WTL/HC/HW-SW/17-18/003)

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MINIMUM SPECIFICATION OF SERVER

Quantity		4 (four) : 2 Application Servers in cluster, 2 DB in cluster : Preferably to be placed in 2 separate rooms / nearby buildings – with each AS and DB server			
Make:					
Model:					
Part No.					
Sl. No.	Component / Performance / Utility for each Server	Minimum Specification	Specification (Quoted / Applicable – by the bidder)	Complied (Yes / No)	Remarks
0	Service	1. On-site Installation 2. On-site Configuration for cluster, as applicable 3. Document with diagram, as installed and configured 4. On-site parameter tuning for (a) security aspects, (b) performance, (c) software services 5. Auxiliary Document – on re-tuning 6. On-site Vulnerability Assessment of configured (HW, System SW) system - Certificate			
1	Processor	1. Make & Model 2. 2 (two) Physical 64 Bit Processors (x86_64 with seamless binary execution of 32 bit) 3. Total Nos. of Processor / Cores / Threads i.e. in total <i>P / C / T</i>			
1.1	Architecture	64 Bit architecture for all cores (if any) and all processors			
1.2	Processor Frequency	Proc Freq. (in GHz)			
1.3	Cache	L3 cache in MB			
1.4	Processor-Memory transport	1. Byte / transfer 2. Transfer / Sec, 3. Bandwidth			
2	SPEC- CPU2006 Rates [SPEC CPU2006 v1.2]	SPECPU2006 Rates: 1. SPECint_rate_base2006>= 650 (Make and Model of quoted servers must be certified for SPECint_rate_base2006 (version 1.2) as per www.spec.org 2. Provide printout of certifications from www.spec.org 3. Availability of the same for public at www.spec.org)			

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3	Memory	1. Memory >= 256 GB, 2. Max Memory support >=256GB 3. Memory Type DDR-4 4. DDR Freq.			
4	VGA & Others	VGA Interface / Port with separate VGA Memory >= 1. 16MB 2. 2 (front/back) USB port			
5	RAID	Minimum 1 No. Hardware (SAS-3 , 12 Gbps) RAID Controller Supporting RAID Levels 0,1,10, 5, 50, 6 and 60 with minimum 512MB Flash cache			
6	SAS Casing	1. Min 2 , 2.5", 2. Hot-swap / Hot Plug 3. SAS-3 (12 Gbps) compatible casing			
7	DVD-DL RW	1 no. of individual / sharable DVD-RW drive.			
8	FCoE	2 Nos. of dual Port 10 Gbps Fiber Channel over Ethernet (FCoE) CNA for connecting Storage and Network with redundancy , with booting from storage capability, and with required modules & patch cords (Total 4 ports / interfaces on two separate / independent cards / controllers)			
9	Ethernet	1. Min. 2x2 nos. of Gigabit Ethernet Port on RJ-45 with patch cords 2. TCP/IP Offload Engine			
10	Free Slot for adapters	Min. 2 nos. Mention type & Parameter			
11	Server Environment, Management	1. Dedicated Management Port (RJ-45) with patch cord, and with Remote management functionalities. 2. Web based Management. Server should be able to generate impending failure alerts on processor, memory and hard disk drives.			
12	Power Supply	1. Min. 2 nos. of hot-swap power- supply, 2. Watt of each > fully configured and all components working requirements 3. Mention Efficiency Level			
13	Server Certified for Operating System	1. Windows Server Std. – 2012 2. Latest version of EAL-4 certified Ent. Linux			
14	Form Factor	Enclosing Form Factor: Max 1U Rack			
15	RoHS, UL and FCC	1. Compliance 2. Level of Compliance			
16	Warranty	5 years on-site, comprehensive (HW, Firmware, Antivirus SW – if any, system SW and utilities) from the date of installation certificate, signed by the user			
17.	Operating System (Enterprise Category)	1. LSB – 4.x or higher compatible 2. EAL4+ or higher certified (Publicly available certificate at https://www.commoncriteriaportal.org) OS with latest updates 3. Latest Linux Operating system (enterprise category) with all bundled utilities and application (PostgreSQL, MariaDB / MySQL, Apache Http, PHP, Java, Tomcat, Xen / KVM, Docker, GUI etc.) on DVD media 4. 5 (five) years comprehensive support on bug-fixes, updates and upgrades from the date of installation certificate, signed by the user			

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MINIMUM SPECIFICATION OF FCoE SWITCH

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Quantity		02 (Two) Nos. : Preferably to be placed in 2 separate rooms / nearby buildings			
Make					
Model					
Part No.					
Sl. No.	Component / Performance / Utility for each Switch	Minimum Specification	Specification (Quoted/Applicable by the bidder)	Complied (Yes/No)	Remarks
1	Hardware & Performance Requirements				
1.1	Architecture	Modular architecture rackmountable Switch. Rackmount kit to be provided alongwith the switch			
1.2	Switch Redundancy	The Switch should have internal hotswappable Redundant Power Supplies			
1.3	Switching Fabric Capacity	The Switch should support a minimum of 512 Gbps of Switching Fabric Capacity.			
1.4	Switch Forwarding Rates (Layer 2)	The Switch should Support Minimum Switching (Layer 2) Performance of 320 Mpps.			
1.5	10G/Gigabit Ethernet and FC capability	The Switch should have a minimum 20 nos. of 10 Gigabit Ethernet FCoE ports including 4 nos of Ethernet 1000 base T configurable ports & 8 Nos. FC 8Gbps ports with all necessary interface modules & cables, licenses (if any)			
1.6	Ethernet fiber and copper ports	The switch should have support for fiber and copper gigabit ports also.			
1.7	10G Fiber Transceivers	Required multimode fiber Transceivers shall be proposed along with all the 10G ports.			
1.8	Capability	The Switch Should have capability for consolidating storage and traditional Ethernet protocols onto a single media			
1.9	Performance	Switch shall have cut-through, non-blocking switch architecture with line-rate forwarding on all the ports.			
2	Connectivity & Filtering				

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2.1	802.3ad	Should support Industry Standard Port/Link Aggregation for All Ports			
2.2	Jumbo Frames	Jumbo Frames support on all ports			
2.3	Storm Control	Support for Unitcast/broadcast/multicast storm control to prevent degradation of switch performance from faulty end stations			
3	Layer 2 Functionality				
3.1	STP	Should Support Spanning Tree Protocol, Rapid Spanning Tree Protocol, Multiple Spanning Tree Protocol			
3.2	Features	Switch shall support Datacenter bridging exchange, IEEE 802.1Qbb priority flow control and IEEE 802.1Qaz.			
3.3	DNS, TFTP, NTP	Should support DNS, TFTP and NTP protocols, applicable IPv4 and IPv6 protocols			
3.4	Port-channel / Port Aggregation	Should have trunking capability.			
4	Security Features				
4.1	Access Control Lists	Should support Standard ACLs			
4.2	Various type of ACLs	Should support various type of ACLs like port based, Vlan based and time based			
4.3	MAC Address Filtering	Should Support MAC Address Filtering based on source and destination address			
6	Quality of Service				
6.1	CoS	Should support QoS and port-based CoS assignment			
7	Multicasting				
7.1	IGMP	a). Should Support IGMP v1, v2, v3 snooping			
8	Management				
8.1	Network monitoring/management	Switch should be manageable through NMS on per port/switch basis with common interface for all manageable devices on the network. Should Support syslog, SNMP v2/v2c/v3, RMON/RMON-II, SSH, telnet, web management through network management software.			
8.2	Port Mirroring	Should support port mirroring feature for monitoring network traffic of a particular port/VLAN/group of ports/ fiber-channel ports.			
8.3	AAA	Should have support for Authentication, authorization, and accounting (AAA)			
8.4	Monitoring	The switch should have real-time performance monitoring capabilities built-in.			

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9	Software				
9.1	Software Version	Version of software for supplied switch should be latest release to support all required features			
10	IEEE Standards Compliance				
10.1	IEEE Standards	Ethernet: IEEE 802.3, 10BASE-T			
		Gigabit Ethernet: IEEE 802.3z, 1000BASE-X (mini-GBIC/SFP), 1000BASE-SX, 1000BASE-LX/LH			
		10G Ethernet: IEEE 802.3ae, 10GBase-SR, 10GBase-LR			
		IEEE 802.1D Spanning-Tree Protocol			
		IEEE 802.1S & 1W for Rapid Spanning tree convergence			
		IEEE 802.1p CoS Prioritization			
		IEEE 802.3x Flow Control			
		IEEE 802.3ad Link Aggregation			

MINIMUM SPECIFICATION OF FIREWALL

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Quantity		02 (Two) Nos. - Preferably to be placed in 2 separate rooms / nearby buildings			
Make					
Model					
Part No.					
Sl. No.	Component / Performance /Utility for each Switch	Minimum Specification	Specification (Quoted / Applicable – by the bidder)	Complied (Yes/No)	Remarks
1	Architecture	Network Security Firewall should support Stateful policy inspection technology. It should also have application intelligence for commonly used TCP/IP protocols like telnet, ftp etc.			
		Firewall should have a feature of holding multiple OS images to support resilience & easy rollbacks during the version upgrades			
		Integrated Gateway should have Anti-Malware LICENSE(device based) module to prevent the recent type of advanced threats			
2	Hardware Interface and functional Requirements	4 number of 10/100/1000Mbps interfaces on Copper.			
		2 Nos. of 10 G interfaces with necessary patch cord scalable upto 8 Nos, 10G interfaces			
		250 GB local storage			

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		Separate out of band security management & sync ports.			
3	Performance Requirements	Allow 10000 Concurrent connections and expandable to 50000 Concurrent Connections			
		Capable of processing 10000 new connections/second			
		Firewall throughput : 1. TCP , UDP : min 16 Gbps 2. SSL VPN : min 512 Mbps			
4	Network IPS Requirements	IPS should provide detailed information on each signature/protection, including: Vulnerability and threat descriptions, Threat severity, Performance impact, Release date, Industry Reference, Confidence level etc			
		IPS should be NSS LABS Recommended. Certificate for the same to be submitted along with the bid			
		IPS should have the functionality of Geo Protection to Block the traffic country wise. IPS Policy should support Blocking the traffic by country and should have an option to configure in incoming direction, Outgoing direction or both.			
		IPS should categorize signature/protections with respect to performance Impact, so that if required high/critical performance impacting signature/protections can be disabled.			
5	Central Security Management Requirements	Security Events' Real-Time Monitoring; Security Policy Management and Security Logs Collection (with storage) should be provided in the Centralized Management Device / Server. Licenses for Reporting, Event Correlation, Monitoring need to be added along with Central Management			
		Communication between the Firewall, IPS, Advance Malware and Security Event management framework must be encrypted			
		Security management should provide Compliance monitoring framework so that it can monitor compliance status of these devices in the real time. Solution should provide real-time and continuous assessment of all major regulations like ISO27001			
		Compliance solution must provide on screen compliance alerts and predefined regulatory reports enable organizations to reduce the time and costs associated with maintaining compliance and audit preparation			
		Log analysis capability, facility and utility			
		Centralised Security Management Framework should be able to monitor and drill down to all security alerts from central console			
		250 GB storage capacity with RAID : should be capable to handle 250 logs / sec			

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6	VPN, SSL VPN, Web Filtering, Bandwidth Management, Certification	VPN, SSL VPN :			
		1. IPSec, L2TP, PPTP 2. 3DES, DES, AES, MD5, SHA, DH, DSC 3. IPSec NAT Traversal 4. SSL VPN - TCP , UDP Tunnelling			
		Web Filtering :			
		1. CIPA Compliat 2. Block – Mlware, Phishing etc.			
		Bandwidth Management : Application, Web category based			
		Certification :			
		1. Common Criteria : EAL4+ 2. ICSA Firewall – Corporate 3. VPNC – Basic and AES interoperability			
		High Availability :			
		1. Active – Active 2. Active – Passive (State synchronisation) 3. Sateful Failover 4. IPv4 and IPv6 compliant			

MINIMUM SPECIFICATION OF EACH STORAGE DEVICE

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Quantity :		02 (Two) – Preferably to be placed in 2 separate rooms / nearby buildings			
Make:					
Model:					
Part No.					
Sl. No.	Component / Performance / Utility for each Storage	Minimum Specification	Specification (Quoted / Applicable – by the bidder)	Complied (Yes / No)	Remarks
0	Protocol	1. FCoE, 2. FC, 3. iSCSI, 4. NAS-NFS ,SMB /CIFS etc. 5. NDMP			
1	Interfaces	Minimum 1. Configurable FCoE 10 Gbps or FC 8 Gbps higher ports >= 4 2. iSCSI 10 Gbps >= 4 4. Device lanes >= 8			

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2	Each Controller	a) Active -Active configuration using min. two controllers b) Each controller With capability of RAID - 1, 5, 6 & 10			
3.	Memory	32 GB usable Read/Write DRAM cache in storage system with host servers having direct access to the total cache for Data.			
4	Min nos. of Disks	a) Min. 150 disks (SAS-2, NL-SAS or equiv) scalability with SLC / MLC SDD adaptability b) LUN / partition supported >= 256			
5	Nos. of Disks and RPM	a) 400 GB usable after RAID-1 using 200GB SSDs for storage tiering purpose b) 10 TB useable capacity (sets of 5D + 1P disks in RADID-5 array) using maximum 600 GB, and minimum 15K rpm, dual ported SAS-2 disks. c) Any disks required for storage system OS etc should be provided additionally d) Storage must be provided with data encryption for the entire capacity for security of data			
6	Additional Disks & Capacity	10 TB useable capacity (sets of 5D + 1P disks in RAID-5 array) using 2TB, 7.2K rpm, 6 Gbps SAS interface of dual ported NL-SAS/MDL-SAS / equiv. disk.			
7	Power, Cooling & Host Connectivity	Power supply & Fans : a) Redundant b) Hot-swap Host Connectivity			
8	Mandatory features to be provided	a) No single point of failure architecture. b) Clone copy / Incremental clone copy c) Point-in-time pointer based copy d) Thin provisioning and Storage Management software to be offered for full scalable capacity of the storage			
9		a) Automated data tiering for both read & write data to move sub-LUN data blocks between solid state disks & spinning disks within Production disks based on activity level.			
		b) It should be possible to span a volume and stripe data across all controllers / nodes for the maximum scalability configuration			
		c) All features mentioned in points 7 & 8 should be provided / supported (as specified above) for the proposed configuration and up to minimum scalability asked for			

MINIMUM SPECIFICATION OF IP KVM SWITCH WITH MONITOR

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Quantity :		02 (Two) Nos. : Preferably to be placed in 2 separate rooms / nearby buildings			
Make:					
Model:					
Part No.					
Sl. No.	Component / Performance / Utility	Minimum Specification	Specification (Quoted / Applicable – by the bidder)	Complied (Yes / No)	Remark
1		1 (One) remote console and 1 (one) local console control up to 16 computers			
2		1(One) local and one remote user can simultaneously control separate ports			
3		User can access Servers via the LAN, WAN, or Internet			
4		Extra console port for connecting monitor, PS/2 keyboard, and PS/2 mouse			
5		LCD monitor can be slides independently of the Keyboard /touchpad			
6		Console lock facility which enables the console drawer to remain securely locked away in position when not in use			
7		upport Up to 64 user accounts			
8		Should have a feature to view all 16 ports at the same time.			
9		Three level login security: ●Administrator ●User ●Select			
10		Support advanced security features include password protection and advanced encryption technologies - 1024 bit RSA, 256 bit AES, 56 bit DES, and 128 bit SSL			
11		It can be flash firmware upgradeable over network connection			
12		Support: Windows 2012, Linux,			
13		Computer can be selected via front panel pushbuttons, hotkeys or On Screen Display (OSD).			
14		Rack mountable in 19" (1U) system rack.			
15		Superior video quality: 17" LCD - up to 1280 x 1024@75Hz; DDC2B Remote - up to 1920 x 1440; DDC2B			
16		It should have a facility to Auto Scan function to monitor computer operation.			

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MINIMUM SPECIFICATION OF 42U RACK

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Quantity :		02 (Two) Nos. : Preferably to be placed in 2 separate rooms / nearby buildings			
Make:					
Model:					
Part No.					
Sl. No.	Component / Performance / Utility	Minimum Specification	Specification (Quoted / Applicable – by the bidder)	Complied (Yes / No)	Remark
1	Material	The frame should be made of heavy duty, heavy grade aluminum profiles designed to accept front and rear doors and side panels, which close within the frame itself. The Racks shall be of CKD (Complete Knock Down) design for easy accessibility at site as and when required			
2	Size (Width)	600mm			
3	Height	42U			
4	Depth	1000mm			
5	Mounting Angle	Two Pairs of 19" Mounting Angles with U marking			
6	Doors	Front and Rear perforated door with hexagonal perforation for better air movement across the Rack. The rack front door to have locking system			
7	Top & Bottom Cover	Top cover and Bottom panels with cable entry facilities. Cable entry cut out			
8	Equipment cooling	a) Each rack should be compatible with floor- throw as well as top-throw Data centre cooling system. b) Rack should have IP based temperature and humidity monitoring facility.			
9	Floor Standing accessories	All Floor Mounting accessories required to set up the rack. Castors with foot brakes			
10	Earthing	Enclosures shall be bonded to the protective earth system or communications earth system (CES) using a minimum 2.5 sq mm conductor.			
11	Color & Powder Coating	Color should be Black. Rack to be powder coated with Nano ceramic pre-treatment process using a zirconium coat. Powder coating thickness shall be 80 to 100 microns. The Powder coating process should be ROHS compliant			
12	Load Rating	Minimum 550 Kg			
13	Standard	DIN 41494 Standard			

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14	ISO Certification	Rack manufacturer have ISO 9001-2008 and ISO 14001-2004 certification and certificates needed to be submitted with technical compliance			
15	Site Specific Parameters	Power cords and connectors, fixtures are to be compatible with the environment / site			

SYSTEMS INTEGRATION WORK

For the Core ICT Infrastructure at the Calcutta High Court, Kolkata

Sl. No.	Component / Performance / Utility	Minimum Specification	Complied (Yes/ No)
Bidder should undertake the following and related activities :			
1.	Policies & Guidelines	Policies & Guideline and implementations there from in the department for (1) Application Service, (2) DB service, (3) Backup service (as applicable), (4) Storage Service (5) Security Service, (6) OS security, (7) Application Server security, (8) RDBMS security, (9) System Admin, (10) AS Admin, (11) DB Admin, (12) DC-DR synchronization (13) and other related components/ work	
2.	Integration plan & design for service provisioning	(1) DB servers, (2) AS servers, (3) FCoE Switch, (4) Ethernet Switch (as applicable), (5) Storage device component (6) Security devices (7) LAN integration (8) Load Balance & Fail-over Plan for Design, Tests & Acceptance with Test Application, & Test DB (9) Other related components/work	
3.	Installation & Implementation of, DB Server HW, AS Server HW , FCoE Switch , Storage component , Security Device, Ethernet Switch (as applicable), OS with Database	HW, SW & Services with all operational sub-components with OS, Web Service Software, AS, DB, SMS, Backup , Security Device as per design & policy doc on EAL-4+ , LSB-4.x, certified OS and other related components / job.	
4.	LAN supply & works with integration to existing network	All passive components, test & certification for 10 years as per design & policy doc and EIA/TIA-942 & EIA/TIA-568-B.1 & B.2 etc and other related components / job	
5.	Integration test & Certification	(1) DB servers, (2) AS servers, (3) FCoE Switch, (4) FCoE & Ethernet (as applicable) Switch, (6) Storage component (7) Security devices, (8) LAN integration (9) Load Balance & Fail-over Plan for Design, Tests & Acceptance with Test Web Services, Application, & Test DB and other related components /job.	
6.	AS, DB, & all HW & System Software Services installation, implementation with go-live certification	(1) DB Server, (2) Application Server (3) backup service – as applicable, (4) Storage component, (5) client accessibility with all operations on (i) Load Balance & (ii) Fail-over mode with implementation all security feature and other related components/job	

Authorized Signatory (Signature In full): _____

Name and title of Signatory: _____

Stamp of the Company: _____