Laptop Computers Type III (Core i7)

Features	Required Specification	Bidders Compliance	
		Yes/No	If No, Bidders Response
Make and Model	(Branded)		
Country of manufacture	(Branded)		
Country of origin	(Branded)		
Form Factor	Business Laptop Computer (Manufacture Confirmation must be attached)		
Chipset	Intel Integrated Chipset		
Processor	Intel® Core TM i7-10510U 1.8GHz processor (8 MB L3 cache) / AMD Ryzen™ 7 4700U Processor 2.00GHz up to 4.1GHz (12MB L2/L3 Cache)		
Memory RAM	16 GB of DDR4 system memory Upgradable to 32 GB or Higher capacity		
Maximum RAM speed and type	2666 MHz, DDR4 or higher		
Hard Disk	1TB SSD or Above		
Graphics	Intel HD Graphics / AMD Radeon™ Graphics		
Keyboard	(Specify)		
Touch Pad	Multi-gesture touchpad, supporting two-finger scroll		
Audio Audio Integrated speakers' microphone	Integrated high definition audio Integrated internal speakers Built-in microphone		
Communications Modem Ethernet description wireless Bluetooth	WLAN: 802.11ac WPAN: Bluetooth 4.0		
Inbuilt Camera	720p HD camera		
Expansion options PC card I/O ports	SDTM Card reader Microphone / Earphone jack USB 2.0 port Two USB 3.0 ports HDMI® port DC-in jack for AC adapter Fingerprint Reader		
Display type	14"/15.6" TFT LCD HD Resolution		

Quality/Stability and reliability tests of the Product quoted	The quoted product should possess test reports of the following, Spill-resistant keyboard to Provides protection against water spillage. (Should provide lab test as proof)		
Operating system	The system should be compatible with 64-bit Windows 10 and Ubuntu 16 (or latest)		
Application Software	Sinhala and Tamil Unicode Software Commercial Anti-virus with license for 3 years		
Battery	Minimum 8 Hours battery life (Specify Type / mAh / Hours)		
Security	Kensington lock slot		
Accessories Carrying case	Should be same brand		
Product certifications of the quoted Model	Energy Star or any other equal certificate to Energy Star, issued by authorized body who has the authority to do so, Documentary evidence must be provided Valid ISO 9001: 2015, and ISO 14001:2015		
Manufacture Experience	Manufacturer should have minimum of 3 years' experience in manufacturing of the same brand. (Proof document should be attached)		
Manufacturer Authorization Certificate	Manufacturer Authorization Certificate should be provided (Originals should be provided on request)		
Warranty	Comprehensive on-site manufacturer authorized warranty for 36 months (Labor and Parts) Excluding Consumes. Bidder or its parent company or its subsidiary should have Island wide owned branch network Documentary evidence to be provided of the following under bidders' name. (a) Address, Contact Details and Date of Commencement of each branch/regional office. (Should have completed minimum of 5 years from the Date of Commencement of each ranch/regional)		

Warranty Information	A sticker with
	      -Supplier name
	      -Contact Numbers
	      -Date of Commissioning of Hardware
	-Warranty period
	In all Laptops		

Brochure	Supplier should provide original brochure of make/model quoted as per above specification		

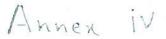# Specification for High End Laptop Integrated Graphics

Description		Bidder's Response	Page No.
Make			
Model			
Country of Origin			
Detailed Specification - *Must be attached*			
Processor			
Processor Type	Intel Cor i7 (10th Generation or better)		
Processor Speed	2.80 GHz or Higher		
Processor Cores/Thread	4 / 8 or higher		
Processor cache	12 MB or higher		
Processor Architecture	64-bit		
Display & Graphics			
Graphics Memory Accessibility	Shared		
Graphics Controller Model	Iris Xe Graphics or Nvidia or AMD equivalent		
Screen Size	Between 13.3" - 15.6"		
Display Screen Technology	In-plane Switching (IPS) Technology or better		
Touchscreen	Yes		
Multi-touch Screen	Yes		
Screen Resolution	Full HD 1920 x 1080 or better		
Memory			
Standard Memory	16 GB or higher		
Memory Technology	LPDDR4X or better		
Memory Card Reader	Optional		
Memory Card Supported	microSD		
Storage			
Total Solid State Drive Capacity	512GB		
Solid State Drive Interface	PCI Express NVMe M.2		
Optical Drive Type	No		
Network & Communication			
Wireless LAN Standard	IEEE 802.11 a/b/g/n/ac/ax		

Description		Bidder's Response	Page No.
Built-in Devices			
Microphone	Yes		
Fingerprint Reader	Optional		
Number of Speakers	2		
Sound Mode	Stereo or better		
Webcam Resolution	720p or better		
Interfaces/Ports			
Number of HDMI Outputs	1		
Total Number of USB Ports (Two of them must be USB 3.0 or higher)	2 or more		
USB Type-C Detail	USB Type-C port: USB 3.2 Gen 2 (up to 10 Gbps), Thunderbolt 4 (optional)		
Input Devices			
Keyboard	Standard QWERTY		
TouchPad Features	Multi-touch Gesture		
Battery Information			
Number of Cells	4-cell or better		
Battery Chemistry	Lithium Ion (Li-Ion)		
Maximum Battery Run Time	10 Hour or better		
Maximum Power Supply Wattage	65 W or higher		
Miscellaneous			
Operating system	Not required.		
Weight (laptop only)	1.8kg or lower		
Dimensions	Depth (thickness): 19.5mm or lower Height: Not specified Width: Not specified		
Security Features	Firmware Trusted Platform Module (TPM) solution, Noble Lock TZ08		
Warranty	3 years or more comprehensive warranty		
Manufacturer Authorization Letter	Yes		

Specifications for General Purpose Server with FPGA capabilities

No.	Discription	Requirement	Supplier's Response YES / NO	Page No.
	Brand	Specify by supplier		
	Model	Specify by supplier		
	Country of Origin	Specify by supplier		
	Detailed Specification	General Purpose Server with FPGA capabilities		
1	Processor	2 x 2nd Generation Intel® Xeon® Scalable processors, 22core/44thread or better (virtualization capable)		
2	Memory	4 x 32GB or more DDR4 expandable up to 512GB		
3	Memory Bandwidth	2933 MT/s or better		
4	Storage	HDD with RAID 0 configuration - 12TB usable storage		
5	Storage Controllers	RAID controller (1/0/10 compatible)		
6	Power Supplies	Dual hot plug redundant power supply (1+1) - 1100W - 2400W 100-240 V AC		
7	Dimensions	Rack Mountable (2U)		
8	Bezel	Optional LCD bezel or security bezel		
9	Security	TPM 2.0, Secure Boot, System Lockdown, Secure Erase		
10	Network options	4 x 1GbE, 4 x 10GbE, 2 x 10GbE+2 x 1GbE, or 2 x 25GbE		
11	Graphics	Integrated graphics		
12	I&O and Ports	PCIe: 6 x Gen3 slots or better		
		External : 3x USB 3.0, 1 managed (micro-usb), Video, Serial		
13	Accelerator	Xilinx Alveo U50 FPGA		
14	Supported operating systems	Canonical® Ubuntu® LTS, Citrix® Hypervisor, Microsoft® Windows Server® LTSC with Hyper-V, Oracle® Linux, Red Hat® Enterprise Linux, SUSE® Linux Enterprise Server, VMware® ESXi		
15	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. (note: a copy of the warranty terms and conditions of the Bidder must be submitted with the Bid document)		
16	Manufacturer Authorization Letter	Should attach		

Specifications for General Purpose Server with GPU capabilities

No.	Discription	Requirement	Supplier's Response YES / NO	Page No.
	Brand	Specify by supplier		
	Model	Specify by supplier		
	Country of Origin	Specify by supplier		
	Detailed Specification	General Purpose Server with GPU capabilities		
1	Processor	2 x 2nd Generation Intel® Xeon® Scalable processors, 22core/44thread or better (virtualization capable)		
2	Memory	4 x 32GB or more DDR4 expandable up to 512GB		
3	Memory Bandwidth	2933 MT/s or better		
4	Storage	HDD with RAID 0 configuration - 12TB usable storage		
5	Storage Controllers	RAID controller (1/0/10 compatible)		
6	Power Supplies	Dual hot plug redundant power supply (1+1) - 1100W - 2400W 100-240 V AC		
7	Dimensions	Rack Mountable (2U)		
8	Bezel	Optional LCD bezel or security bezel		
9	Security	TPM 2.0, Secure Boot, System Lockdown, Secure Erase		
10	Network options	4 x 1GbE, 4 x 10GbE, 2 x 10GbE+2 x 1GbE, or 2 x 25GbE		
11	Graphics	Integrated graphics		
12	I&O and Ports	PCIe: 6 x Gen3 slots or better		
		External : 3x USB 3.0, 1 managed (micro-usb), Video, Serial		
13	Accelerator	NVIDIA T4 GPU 16GB		
14	Supported operating systems	Canonical® Ubuntu® LTS, Citrix® Hypervisor, Microsoft® Windows Server® LTSC with Hyper-V, Oracle® Linux, Red Hat® Enterprise Linux, SUSE® Linux Enterprise Server, VMware® ESXi		
15	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. (note: a copy of the warranty terms and conditions of the Bidder must be submitted with the Bid document)		
16	Manufacturer Authorization Letter	Should attach		

Specifications for 2RU Rack Server System

No.	Discription	Requirement	Supplier's Response YES / NO	Page No.
	Brand	Specify by supplier		
	Model	Specify by supplier		
	Country of Origin	Specify by supplier		
	Detailed Specification	2RU Rack Mountable Server with support for 2 Intel Xeon Silver processors and at least 4 NVIDIA Tesla V100S Graphics Accelerators		
1	Processor	1 x Intel Xeon Silver 4215 2.5G, 8C/16T, 9.6GT/s, 11M Cache, Turbo, HT (85W) DDR4-2400 or better		
2	Memory	2 x 64GB RDIMM, 3200MT/s, Dual Rank		
3	Memory Bandwidth	3200MT/s or better		
4	Storage	2 x 2TB 7.2K RPM SATA 6Gbps 512n 2.5in Hot-plug Hard Drives and 1 x 2TB SSD SATA Read Intensive 6Gbps 512 2.5in Hot-plug or better storage configuration		
5	Storage Controllers	RAID Controller, 8Gb NV Cache, Adapter, Low Profile		
6	Power Supplies	Dual, Hot-plug, Redundant Power Supply (1+1), 1600W		
7	Dimensions	Rack mountable 2U		
8	Bezel	Optional LCD bezel or security bezel		
9	Security	TPM 2.0, Secure Boot, System Lockdown, Secure Erase		
10	Network options	2 x Dual Port 10GbE BASE-T & 5720 Dual Port 1GbE BASE-T, rNDC or better		
11	GPU	2 x NVIDIA Tesla V100S 32GB, 260W, Passive, Double Wide, Full Height GPU		
12	Supported operating systems	Canonical® Ubuntu® LTS, Citrix® Hypervisor, Microsoft® Windows Server® LTSC with Hyper-V, Oracle® Linux, Red Hat® Enterprise Linux, SUSE® Linux Enterprise Server, VMware® ESXi		
13	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. (note: a copy of the warranty terms and conditions of the Bidder must be submitted with the Bid document)		
14	Manufacturer Authorization Letter	Should attach		

Specifications for General Purpose Server with GPU capabilities

No.	Discription	Requirement	Supplier's Response YES / NO	Page No.
	Brand	Specify by supplier		
	Model	Specify by supplier		
	Country of Origin	Specify by supplier		
	Detailed Specification	General Purpose Server with GPU capabilities		
1	FRONT STORAGE	Chassis with up to 8x2.5" Drives		
2	Chassis	2.5" Chassis with up to 8 SAS/SATA Drives (Rack mountable 2U)		
3	Processor	2 x Intel® Xeon® Silver 4310 2.1G, 12C/24T, 10.4GT/s, 18M Cache, Turbo, HT (120W) DDR4-2666		
4	Processor Thermal Configuration	Heatsink for 2 CPU		
5	Memory Configuration Type	Performance Optimized		
6	Memory DIMM Type and Speed	3200MT/s RDIMMs		
7	Memory	2 x 64GB RDIMM, 3200MT/s, Dual Rank		
8	RAID	C7, Unconfigured RAID for HDDs or SSDs (Mixed Drive Types Allowed)		
9	RAID/Internal Storage Controllers	PERC H745 with rear load bracket		
10	Hard Drive	1.92TB SSD vSAS Mixed Use 12Gbps 512e 2.5in Hot-Plug ,AG Drive SED, 3DWPD,		
11	BIOS and Advanced System Configuration Settings	Performance BIOS Setting		
12	Advanced System Configurations	UEFI BIOS Boot Mode with GPT Partition		
13	Fans	Very High Performance Fan		
14	Power Supply	Dual, Hot-Plug,Power Supply Fault Tolerant Redundant (1+1), 1400W, Mixed Mode		
15	Power Cords	2 x NEMA 5-15P to C13 Wall Plug, 125 Volt, 15 AMP, 10 Feet (3m), Power Cord, North America		
16	PCIe Riser	Riser Config 0, 2x16 + 6x8 slots		
17	Embedded Systems Management (Multi)	iDRAC9, Express 15G		
18	OCP 3.0 Network Adapters	Broadcom 5720 Quad Port 1GbE BASE-T Adapter, OCP NIC 3.0		
19	GPU/FPGA/Acceleration Cards	4 x NVIDIA Ampere A10, PCIe, 150W, 24GB Passive, Single Wide, Full Height GPU with R750xa Bracket		
20	Boot Optimized Storage Cards	BOSS S2 Blank		
21	Supported Operating Systems	Ubuntu Server, SUSE Linux Enterprise, Red Hat Enterprise Linux, VMware ESXi NFI, Windows Server		
22	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. (note: a copy of the warranty terms and conditions of the Bidder must be submitted with the Bid document)		
23	Manufacturer Authorisation Letter	Should attach		

Annex 7

Technical requirements for Server Computer

No.	Description	Requirement	Bidders Response
	Brand	*Please specify*	
	Model	*Please specify*	
	Country of Origin	*Please specify*	
	Detailed Specification	Must be attached	Attached / Not Attached
	Device form factor	Rack Server, 2U (or smaller) inclusive of all rack rails and other required mounting hardware.	
	Processor	Intel® Xeon® Gold 5122 family or better with 64-bit instruction set, Dual Processor Configuration	
	Processor Speed	3.2 GHz or faster Base Frequency	
	Cache memory	16MB or larger Level 3 cache per CPU	
	Total Cores / Treads	At least 4 Cores / 8 Threads	
	System memory	24 DDR4 DIMM slots supporting Up to 768GB 16GB RDIMM, 2666MT/s – 2 Nos (32GB)	
	Video	Integrated VGA controller with one 15-pin VGA port on the front and back of system.	
	RAID Controller	Eight-port 12Gbps PCI Express(PCIe) RAID controller supporting 3Gbps, 6Gbps and 12Gbps SAS, and 3Gbps and 6Gbps SATA hard-disk or solid-state drives. RAID levels 0, 1, 5, 10	
	Hard Disk	1.2TB 10K RPM SAS 12Gbps Hot-plug Hard Drive – 3 Drives	
	Optical Disk	DVD +/-RW, SATA, Internal	
	Expansion Interface	2 X PCIe Gen3 Slots	
	USB Ports	USB 2.0 – x 2 (or more) USB 3.0 – x 2 (or more)	
	LAN Interface	2 X 1000Base-T RJ-45 ports	
	Power Supply	230VAC nominal input, 50 Hz, 480W (or higher) Hot-plug, Redundant Power Supply with Power Cords	
	Energy saving Compliance	Energy star complaint	
	Keyboard	Standard 107 Windows keyboard with PS/2 or USB interface	

	Mouse	Optical mouse with scroll wheel, PS/2 or USB interface, Mouse Pad	
	Remote Management	Required	
	Manuals/ Drivers / CDs	Should provide complete set of user manuals, driver CDs and management software.	
	Operating System Compatibility	Microsoft Windows Server®2016 with Hyper-V Red Hat® Enterprise Linux VMware® ESXi, Ubuntu® LTS	
	Warranty	Three years comprehensive onsite warranty including parts and labour.	

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General Specification for High-End Laptop Computer

Bidders are required to mark (√) if the requirement complies, otherwise mark (×).

No.	Description	Requirement	Supplier's Response		Remarks
			Yes	No	
	Brand	*Please specify*			
	Model	*Please specify*			
	Country of Origin	*Please specify*			
	Detailed Specification	Must be attached			
1.	**Processor**				
1.1	Processor Type	• Intel Core i7 • **Cores/Threads**: 2/4 (or higher) for generation 7 and 4/8 (or higher) for generation 8 • **InstructionSet**:64-bit • **Generation**: 7 (or latest)			
1.2	External Rated Clock Speed	• **Base Frequency**:2.5 GHz (or faster) for generation 7 and 1.8 GHz (or faster) for generation 8 • **Turbo Frequency**:3.5 GHz (or faster) for generation 7 and 4.0 GHz (or faster) for generation 8			
1.3	Internal Cache Memory	• **Level 3 Cash – 4MB** (or larger)			
2.	**Display**				
2.1	Screen	• **Size:** 15.6" HD • **Resolution:** 1,366×768 (or higher) • **Aspect Ratio:** 16:9 Widescreen • **Features:** LED Backlight, Anti-Glare			
3.	**System Board**				
3.1	Type and Architecture	Intelcompatible chipset based system board *(note: Proposed chipset must be certified by the processor manufacturer as compatible with the processor)*			
3.2	Main Memory	• **Capacity**:8 GB (or higher) • **Speed:** DDR4-1866 MHz (or faster) • **512GB SSD** *(note: memory must be expandable up to 16 GB or higher)*			
3.3	Graphic Adapter and Interface	• **Card:** Integrated hardware graphic accelerator			

No.	Description	Requirement	Supplier's Response		Remarks
			Yes	No	
		• **Memory:**1 GB graphic memory (or higher) • **Video Ports:** VGA or HDMI with VGA converter			
3.4	Audio Interface	• High-definition audio • Microphone-in • Line-out connections			
3.5	IO Ports	• At least 3 ports, 2 of which confirming to USB Ver. 3.0 specification (or higher) • **Card Reader:** SDCards (or better)			
4.	**Storage**				
4.1	Hard Disk Drive	• **Capacity:**1 TB (or higher) • **Speed:**7,200 rpm (or faster) • **Interface**: SATA (or better) • **Features:** Shock protection			
4.2	Optical Storage	DVD±RW drive (Super Multi Double Layer Drive)			
5.	**Multimedia**				
5.1	Speakers	• Integrated Stereo Speakers • 16-bit Stereo with Intel[R] high definition audio support (or equivalent)			
5.2	Microphone	Built in			
5.3	Web Camera	Built-in HD Camera 720p (or higher)			
6.	**Communication**				
6.1	Network interface	10/100 Mbps full-duplex Ethernet Port with RJ45 connector			
6.2	Wi-Fi	Integrated 802.11b/g/n			
6.3	PAN	Bluetooth 4.0 (or latest)			
7.	**Standard Peripheral Devices**				
7.1	Keyboard	Full-size keyboard with numeric keypad			
7.2	Pointing Device	Touchpad with multi-gesture support			
8.	**Power Supply Unit**				
8.1	Power	• 110/230 V nominal input • 50/60 Hz • 3-pin square AC plug			
8.2	Battery	Capacity – 45WHour battery (or higher)			
9.	**Chassis**				
9.1	Weight	2.5 Kg (or lower)			
9.2	Security features	Security lock slot			

No.	Description	Requirement	Supplier's Response		Remarks
			Yes	No	
9.3	Carrying case	Need to be provided			
10.	**Software Requirements and Compatibility**				
10.1	Operating system	The system should be compatible with 64-bit Windows 10and Ubuntu 16 (or latest)			
10.2	Drivers for system and peripherals	Manufacturers device drivers for all system components supporting the following operating systems: • 64-bit Windows 10 • 64-bit Ubuntu/Linux16			
11.	**Standard Compliance and Warranty**				
11.1	Standard compliance	The system must be manufactured by an ISO 9000 certified manufacturer. *(note: Copy of ISO certification and original Manufacture Authorization Letter must be attached)*			
11.2	Warranty	3-year comprehensive warranty inclusive of Parts and Labour for ALL system components and peripheral devices supplied. 1 year for battery *(note: Copy of the warranty terms and conditions of the Bidder must be submitted with the Bid document)*			

(Please use separate sheets for optional offers.)

Specification for High-End Laptop Computer

* **Bidders are required to mark (√) if the requirement complies, otherwise mark (×).**

No.	Description	Requirement	Supplier's Response Yes	No	Remarks
1.	**Processor**				
1.1	Processor Type	Intel Core i7 or compatible (Quad Core with 8 execution threads and 64-bit instruction set) 11th Generation or higher.			
1.2	External Rated Clock Speed	• **Base Frequency**: 2.8 GHz (or faster)			
1.3	Internal Cache Memory	12MB (or larger)			
2.	**Display**				
2.1	Screen	• **Size:** 15.6" WXGA HD • **Resolution:** (1920 x 1080) (or higher) • **Aspect Ratio:** 16:9 Widescreen • **Features:** LED Backlight • Anti-glare display			
3.	**System Board**				
3.1	Type and Architecture	Intel or AMD compatible chipset-based system board *(note: proposed chipset must be certified by the processor manufacturer as compatible with the processor)*			
3.2	Main Memory	• **Capacity:** 8 GB (or higher) • **Speed:** DDR3-1600 MHz (or faster) *(note: memory must be expandable up to 16 GB (or higher))*			
3.3	Graphic Adapter and Interface	• **Card:** Integrated hardware graphic accelerator with at least 2 GB graphic memory or better). • **Video Ports:** VGA port, HDMI (convertor cable must be provided if VGA port is not available)			
3.4	Audio Interface	High-definition audio interface with Microphone-in and line-out connections			
		•			
3.5	IO Ports	• **USB 2.0 Ports:** At least 1 ports confirming to USB Ver 2.0 specifications (or above) • **USB 3.0 Ports:** At least 2 port confirming to USB Ver. 3.0 specifications • **Card Reader :** Multi format digital media reader (support SD, SDHC, SDXC) (internal/external)			

No.	Description	Requirement	Supplier's Response Yes	No	Remarks
4.	**Storage**				
4.1	Hard Disk Drive	• **Capacity:** 1 TB (or higher) • **256GB 3.0 SSD** • **Speed:** 7,200 rpm (or faster) • **Interface**: SATA (or better)			
4.2	Optical Storage	External DVD writer 8X **Should be same brand**			
5.	**Multimedia**				
5.1	Speakers	Integrated Stereo Speakers, 16-bit Stereo with Intel^R high-definition audio support (or equivalent)			
5.2	Microphone	Built in			
5.3	Web Camera	Built-in HD Camera 720p (or higher)			
6.	**Communication**				
6.1	Network interface	10/100/1000 Mbps full-duplex Ethernet Port with RJ45 connector			
6.2	Wi-Fi	Integrated 802.11b/g/n			
6.3	PAN	Bluetooth 4.0 (or latest)			
7.	**Standard Peripheral Devices**				
7.1	Keyboard	Backlit Chiclet Keyboard with Num-key			
7.2	Pointing Device	Touchpad with multi-gesture support			
8.	**Power Supply Unit**				
8.1	Power	110/230 V nominal input, 50/60 Hz 3-pin square AC plug			
8.2	Battery	Capacity – 3hours operational time capability on full charge.			
9.	**Chassis**				
9.1	Weight	2.5 Kg (or lower)			
9.2	Security features	Security lock slot			
9.3	Carrying case	Need to be provided			
10.	**Software Requirements and Compatibility**				
10.1	Operating system	The system should be compatible with 64-bit Windows 10 or higher **(Should include with computer)**			
10.2	Drivers for system and peripherals	Manufacturer's device drivers for all system components supporting the following operating systems: • Microsoft 64-bit Windows 10 • 64-bit Linux, Ubuntu 14.04 LTS or higher, Fedora 22			

No.	Description	Requirement	Supplier's Response Yes	No	Remarks
11.	**Standard Compliance and Warranty**				
11.1	Standard compliance	The system must be manufactured by an ISO 9000 certified manufacturer			
11.2	Warranty	3-year comprehensive warranty inclusive of Parts (including Battery) and Labour for ALL system components and peripheral devices supplied (*note: a copy of the warranty terms and conditions of the Bidder must be submitted with the Bid document*)			

(Please use separate sheets for optional offers.)

Minimum Technical Specifications for Branded Desktop Computer

Minimum Specification		Confirm to the Specification		Bidders Resp
		Yes	No	
Country of Origin				
Processor	10th Generation Intel Core i7-10700 Processor (2.9 GHz base frequency, up to 4.8 GHz, 16 MB L3 cache, 8 cores			
Chipset	Intel® Q470 Chipset			
Memory	16GB (2x8GB) DDR4-3200 SDRAM Transfer rates up to 2933 MT/s			
Monitor	Same Brand 23" LED 16:9 (1920 x 1080) at 60Hz HDMI/ Display Port			
Form factor	Micro tower			
Hard Drive	Minimum1 TB SATA hard drive (7200RPM)			
Solid State Drives (SSD)	128 GB Intel Optane Memory H10 with Solid State Storage			
Optical Drive	DVD+/-RW			
Communications	LAN :10/100/1000 Gigabit Ethernet			
Wireless	Intel Wi-Fi 6 AX201 802.11ax (2x2) with Bluetooth M.2 Combo Card vPro			
Graphic adapter (Discrete)	AMD Radeon™ RX 550X Graphics (4 GB GDDR5 dedicated)			
Ports, Slots & Chassis	10 External 6 USB 3.1 (2 front/4 rear) and 4 2.0 (2 front/2 rear) 1 front with Power Share			
	1 x RJ-45 2 x DisplayPort 1.2 1 x HDMI 1.4 1 x Universal Audio Jack 1 x Line-out			

Power	550 W internal power adapter, up to 92% efficiency			
Energy Efficiency Compliance	ENERGY STAR			
keyboard	Standard USB keyboard Same brand			
Mouse	Same brand USB laser Mouse			
Security	Lock slot			
OS	Windows 11 Pro (64 pit preloaded)			
Device Drivers	Compatible Drivers for all devices should be supplied			
Product Experiences	Vender should have minimum of 5 years in selling the Quoted brand in Sri Lanka (Pls attach the proof doc)			
Warranty	3 Years comprehensive on-site warranty inclusive of Parts and Labour for ALL system components and peripheral devices supplied (note: a copy of the warranty terms and conditions of the Bidder must be submitted with the Bid document)			

Annex II

Item 1: Blade Enclosure System

#	Item	Required Specification	Bidder's Compliance Yes / No	Remarks
1	Make	Should be a world recognized Brand (Should be Specified by the Bidder)		
2	Model	(Should be Specified by the Bidder)		
3	Country of Origin (US or Europe)	(Should be Specified by the Bidder)		
4	Country of Manufacture	(Should be Specified by the Bidder)		
5	Enclosure	Should holds up to 16 half height server blades, 8 full-height server blades, and/or 8 expansion blades per enclosure		
6	Supportive Power	Support for high-line AC, three-phase high-line AC, single-phase high voltage AC, -48V DC, or high voltage DC power options for flexibility in connecting to data center power		
7	Power Supply	Should support at least 06 hot-plug power supplies. All the power supply modules (2650W Platinum grade hot-power supplies or better) with 250W C19-C20 2.0m jumper cords should be loaded & supplied		
8	Cooling system	Should support at least 09 hot-plug cool fans. All the fan slots should be loaded		
9	Out of band Management	Must have Integrated access to all server blades out of band management from a single connection. Web GUI should support with all the latest versions of web browsers (Including Google chrome, Microsoft Edge and Mozilla Firefox)		
10	Integrated front Display	Must have Front-mounted Display for easy management within the data center		
12	Data Interconnects	Must have two vendor recommended data interconnects with 10G Ethernet per each blade slot, 4 or more 10G uplink interfaces and 2 x 40G (QSFP+) uplink interfaces. Should be loaded with 8 x 10G SFP+ SR Transceivers (4 each)		
13	Storage Interconnects	Must have two 16Gb/16 vendor recommended SAN Switch interconnects for BladeSystem to connect to the SAN with 16 x 16Gb SFP+ Short Wave Transceivers		
14	SAN switch	The two SAN switches must have 16 ports enabled for any combination (internal and external), full fabric connectivity, Hardware Enforced Zoning,		

		Dynamic Path Selection, Web Tools and Enhanced Group Management (EGM).		
15	Warranty, Support and Spare Parts Availability	Manufacturer's Comprehensive Warranty for 3 Years in 24X7 Support with 4 Hour Onsite Service for All Components of the Server.		
		All defective parts should be replaced Free of Charge with the branded new parts during the Warranty Period.		
		Original Equipment Manufacturer should maintain all required Spare Parts in an independent Part Depot located within Colombo City.		
		Original Equipment Manufacturer should have Independent Certified Service Partners, who will carry out any parts replacement Free of Charge, of and when required within the Warranty Period.		
16	Manufacture Authorization	Should be Submitted		
17	Remarks	(i) Incomplete bids will be liable to reject during evaluation phase.		
		(ii) Over Clocked Configurations will not be considered.		

Name

....

In the capacity of

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Signed

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Item 2: Blade Server

#	Item	Required Specification	Bidder's Compliance Yes / No	Remarks
1	Make	Should be a world recognized Brand (Should be Specified by the Bidder)		
2	Model	(Should be Specified by the Bidder)		
3	Country of Origin (US or Europe)	(Should be Specified by the Bidder)		
4	Country of Manufacture	(Should be Specified by the Bidder)		
5	**Compatibility**	**Should be fully compatible with the proposed blade enclosure system (Item No 01)**		
6	Form Factor	Should be a half-height		
7	Chassis	Chassis which support up to 2 SAS or SATA Hard Drives		
8	Processor	Intel® Xeon® Gold 5218 (2.3GHz, 16.5M Cache, 16 Cores) or better		
9	Number of Processors Required	2		
10	Number of RAM Slots	16 DDR4 DIMM Slots, Supports RDIMM/LRDIMM, Speeds up to 2666MT/s		
11	RAM	8 X 32GB RDIMM 3200MT/s Dual Rank (Total 256GB RAM)		
12	Maximum Memory Supported	Should support up to 2TB of Total Memory (Using any Memory DIMM Type, Using any Processor)		
13	HDD Types Supported	SAS, SATA		
14	Hard Disk Drives	Not required		
15	Removal Media	2 X 32GB Vendor recommended high performance Mini SD cards should be loaded		
16	RAID Controller	Should have RAID Controller with 2GB of NV Cache and 12Gbps data transfer rate		
17	Network Daughter Card	Dual port 10Gb Blade Network Daughter Card		

18	Fibre Channel Host Bus Adapters	16Gb Dual Port Fibre Channel Mezzanine Host Bus Adapter to enable 16Gbps SAN Connectivity		
19	Input/Output Ports	1 X USB 3.0 Port in the front, 1 X USB 2.0 MicroAB Port in the front for Management Functions		
20	Remote Management	Enterprise Level Remote Management		
21	Operating Systems Supported	Microsoft® Windows Server®		
		Microsoft® Windows Server® with Hyper-V™		
		Canonical® Ubuntu® Server LTS		
		Red Hat® Enterprise Linux		
		VMware vSphere®		
		VMware® ESXi		
22	Warranty, Support and Spare Parts Availability	Manufacturer's Comprehensive Warranty for 3 Years in 24X7 Support with 4 Hour Onsite Service for All Components of the Server.		
		All defective parts should be replaced Free of Charge with the branded new parts during the Warranty Period.		
		Original Equipment Manufacturer should maintain all required Spare Parts in an independent Part Depot located within Colombo City.		
		Original Equipment Manufacturer should have Independent Certified Service Partners, who will carry out any parts replacement Free of Charge, of and when required within the Warranty Period.		
23	Manufacture Authorization	Should be Submitted		
24	Remarks	(i) Incomplete bids will be liable to reject during evaluation phase.		
		(ii) Over Clocked Configurations will not be considered.		

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Item 3: Data Center Storage System

#	Item	Required Specification	Bidder's Compliance Yes / No	Remarks
1	Make	Should be a world recognized Brand (Should be Specified by the Bidder)		
2	Model	(Should be Specified by the Bidder)		
3	Country of Origin (US or Europe)	(Should be Specified by the Bidder)		
4	Country of Manufacture	(Should be Specified by the Bidder)		
5	Controllers	Must have Active-Active Dual controllers per array		
		Must have 8GB or better cache per controller		
		Must be a Battery-free cache backup with super capacitors and compact flash		
6	Enclosures	Support a minimum of 7 disk enclosures		
		Additional 4 disk enclosures should be provided and interconnected (5 disk enclosures including the main controller)		
		Must distribute the intended HDDs among 5 enclosures.		
		Support for minimum of 276 LFF disks throughout the storage system		
7	Capacity (Disks)	8 X 800GB SSDs (2.5in) which can be deployed either as read cache, or as an SSD virtual disk group		
		112 X 1.2TB, HDD, 10K, 512n, SAS12, 2.5-inch Drives		
8	Connectivity	Must support FC host connectivity of 16Gbps		
		Must have 8 X 16Gb Short Wave Fibre Transceivers		
9	Thin Technologies	Must include thin provisioning and thin rebuild		
10	Tiering	Must include Automated tiering		
11	Replication	Must support multi-site replication (1-1 and 1-many)		
		Remote replication with FC and iSCSI support		

		Must be Snapshot based replication technology		
12	Other Features	Maximum number of hosts must be 512 or above		
		Maximum number of snapshots must be 512 or above		
		Maximum number of volumes must be 512 or above		
		Maximum LUN size is 140TB or above		
13	OS Compatibility	Microsoft Windows Server 2022, Microsoft Windows Server 2019, VMware 7, VMware 6.5, Ubuntu 20.04, CentOS 7-9		
14	Management	Web based management interface should support with all the latest versions of web browsers (Including Google chrome, Microsoft Edge and Mozilla Firefox)		
15	Accessories	Must include LC/LC Multi-mode OM4 2 fiber 5m Cable x 8		
16	Warranty, Support and Spare Parts Availability	Manufacturer's Comprehensive Warranty for 3 Years in 24X7 Support with 4 Hour Onsite Service for All Components of the Expansion Enclosure		
		All defective parts should be replaced Free of Charge with the branded new parts during the Warranty Period.		
		Original Equipment Manufacturer should maintain all required Spare Parts in an independent Part Depot located within Colombo City.		
		Original Equipment Manufacturer should have Independent Certified Service Partners, who will carry out any parts replacement Free of Charge, of and when required within the Warranty Period.		
17	Manufacture Authorization	Should be Submitted		
18	Remarks	(i) Incomplete bids will be liable to reject during evaluation phase.		
		(ii) Over Clocked Configurations will not be considered.		

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Technical Specifications for Controller Based Wireless Access Point with AC Adapter

Description		Bidder's response	
Make			
Model			
Country of Origin			
Features	Compatible with Cisco 5520 Wireless Controller		
	Compatible with Controller firmware version 8.3.150.0		
	Should work as standalone and controller-based (Controller-based firmware should be loaded)		
	802.11 a/b/g/n/ac compatible		
	Rogue AP detection		
	Flex Connect support		
	3x3 MIMO with two spatial streams		
	Dual-band radios (2.4-GHz/5-GHz)		
	Should support IEEE CAPWAP protocol		
	SNMP, Web, CLI using SSH, Telnet and console port Management		
	Should support 75 or more wireless clients		
Performance	Enterprise-grade performance (Voice, Video, Multimedia)		
Authentication types	WPA-Enterprise, WPA-PSK, WPA2-Enterprise, WPA2-PSK, 802.1X, MAC address, captive portal		
Interfaces	1 No. of Gigabit Ethernet interfaces with POE		
	1 Management Console		
	1 48 V DC input power port		
Antennas	3 or more internal Antenna support		
Mounting	Ceiling and Wall Mounting brackets		
Power	Vendor recommended compatible AC Power **Adapter should be included**		
Warranty	3 years comprehensive onsite warranty with back-to-back hardware replacement for both Wireless Access Point and the AC Power Adapter		
Manufacturer Authorization Letter	Should Attach		

MINIMUM SPECIFICATION FOR HD STREAMING SWITCHER

		Bidder Response yes /No
Make & Model		
Country of Origin		
Connections		
Total Video Inputs	8	
Total Outputs	4	
Total Aux Outputs	2	
Total Audio Inputs	2 x 3.5mm stereo mini jack.	
Total Audio Outputs	1 x 3.5mm stereo mini jack.	
Timecode Connection	None	
HDMI Video Inputs	8 x HDMI type A, 10-bit HD switchable. 2 channel embedded audio.	
Video Input Re-Sync	On all 8 HDMI inputs.	
Frame Rate and Format Converters	On all 8 HDMI inputs.	
HDMI Program Outputs	2	
Ethernet	Ethernet supports 10/100/1000 BaseT for live streaming, software control, software updates and direct or network panel connection.	
Computer Interface	2 x USB Type-C 3.1 Gen 1 for external drive recording, webcam out, software control, software updates and panel connection.	
Standards		
HD Video Input Standards	720p50, 720p59.94, 720p60 1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60 1080i50, 1080i59.94, 1080i60	
HD Video Output Standards	1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60	
Video Streaming Standards	1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60	
Video Sampling	4:2:2 YUV	
Color Precision	10-bit	
Color Space	Rec 709	
HDMI Input Resolutions from Computers	1280 x 720p 50Hz, 59.94Hz and 60Hz 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94 and 60Hz 1920 x 1080i 50, 59.94Hz and 60Hz	

Colorspace Conversion	Hardware based real time.
Product Specifics	
Upstream Keyers	4
Downstream Keyers	2
Advanced Chroma Keyers	Up to 4
Linear/Luma Keyers	Up to 4
Transition Keyer	DVE only.
Total Number of Layers	9
Pattern Generators	5
Color Generators	2
DVE With Borders and Drop Shadow	2
Interface	Minimum monitor resolution of 1366 x 768.
Audio	
Audio Mixer	11 input x 2 channel mixer. Selectable On/Off/Audio-Follow-Video per channel plus separate gain control per channel. Level and Peak metering. Plus new Fairlight audio enhancements: Compressor, Gate, Limiter, 6 bands of parametric EQ. Master gain control.
Analog Input	Unbalanced stereo
Analog Input Delay	Up to 8 frames
Input Impedance	1.8k
Max Input Level	+6dBV
Mic Plug In Power	both 3.5mm mini jack connections.
Streaming	Direct Streaming direct live streaming using Real Time Messaging Protocol (RTMP) over ethernet or a shared mobile internet connection over USB-C.
Recording	
Direct Recording Video and Audio	USB-C 3.1 Gen 1 expansion port can record directly to external media.
Video Recording	8 x HDMI ISO inputs as H.264 .mp4 files at up to 70Mb/s quality at the video standard with AAC audio. 1 x Program out as H.264 .mp4 file at the Streaming quality setting and at the video standard with AAC audio.
Audio Recording	10 x 2 channel audio inputs recorded as separate 24-bit 48KHz .wav files.Including 2 x analog 2 channel audio inputs and 8 x HDMI 2 channel embedded audio inputs.

Switching	Program switching recorded	
Media Format	Supports media formatted ExFAT (Windows/Mac) or HFS+ (Mac) file system.	
Multi View Monitoring	HD Multi View Video Standard Configurable to 16, 13, 10, 7 or 4 up views including Program, Preview, 8 HDMI inputs, SuperSource, Clean Feed, Media Player, Streaming Status, Recording Status and Audio Meters.	
Media Player	Media Players 2, Channels Fill and key for each Media Player. Media Pool Still Image Capacity 20 with fill and key. Media Pool Still Image Format PNG, TGA, BMP, GIF, JPEG and TIFF.	
Optional Required Accessories	1 Streaming Bridge	
Operating Systems	Mac 10.15 Catalina, Mac 11.1 Big Sur or later. Windows 10, 64-bit.	
Warranty	One Year Warranty	

Annex 16

24 Port 10/100/1000 Access Switch

Description		Description	Page No.
Make			
Model			
Country of Origin			
10/100/1000 Mbps auto sensing Rack Mountable Gigabit Ethernet Network Switch			
	HTTP/HTTPS based Management		
	VLAN support		
	Must support Multicasting		
	IEEE 802.1d/w STP & RSTP support, IEEE 802.3af		
	Dual flash images		
	Link Aggregation up to 8 links and Rate limiting over ports		
	Switching capacity: 50 Gbps or greater		
	Throughput: up to 38.5 Mpps or greater		
	2 Nos. Gigabit fiber SFP pluggable ports (Without transceivers)		
	24 RJ-45 10/100/1000 Autosensing port,		
Warranty	3 years comprehensive on site with back-to-back hardware replacement within next business day		
Manufacturer Authorization Letter	Should attach		