

Tender Documents

TERMS AND CONDITIONS FOR

Purchase of Computing Facilities

for

Center of Excellence in Water Resources Engineering,

University of Engineering & Technology

Lahore



Center of Excellence in Water Resources Engineering
University of Engineering and Technology
LAHORE

CENTER OF EXCELLENCE IN WATER RESOURCES ENGINEERING

University of Engineering & Technology, Lahore.

TENDER DOCUMENTS-2017

TENDER PRICE Rs. 500/-

Last date of submission: October 09, 2017 till 11:00am

FOR OFFICE USE ONLY

Serial No. _____

Sold to: - M/s _____

Date of Sale _____ Bank Challan No. _____ Date _____

DIRECTOR

Center of Excellence in Water Resources Engineering (CEWRE),

University of Engineering & Technology, Lahore, Pakistan.

Overview

Center of Excellence in Water Resources Engineering, University of Engineering & Technology, Lahore intends to purchase the computing facilities. The supplier will be responsible for delivery, installation, commissioning of computing facilities and training, wherever required in CEWRE.

1. Proposal instructions

- 1.1. Single-stage two-envelope bidding procedure shall be applied in response to the invitation for tender. The envelopes should be marked as “Financial Proposal”, and “Technical Proposal in Legible Letters”. The Financial Proposals of the bids found technically non-responsive shall be returned unopened to the respective bidders. Technically responsive bidders shall be informed and their financial proposals will be opened in the presence of their representatives (if any). The time & date will be communicated to the responding organizations.
- 1.2. The bidder shall deliver two sealed copies (one original and one photo copy) of the financial and technical proposals, each copy being physically separate, bound, sealed and labeled. Proposals shall be delivered at the address given below before October 09, 2017 up to 11 am.

**The Director
Centre of Excellence in Water Resources Engineering
University of Engineering and Technology
Lahore.Tel. (042)-99250256-58**

- 1.3. Proposals received after the submission deadline will not be entertained under any circumstances and will be returned unopened to the submitting vendor. It is the sole responsibility of the participating vendor to ensure that the proposals are delivered before the deadline.

Any queries regarding this tender document should be directed to the designated contact persons listed below:

Engr. M. Masood
Centre of Excellence in Water Resources Engineering
University of Engineering and Technology,
Lahore, Pakistan Tel. (042) - 99250256-58

- 1.4. Price should be mentioned on FOR basis.
- 1.5. All BOQs submitted by the bidder must use the numbers and labels used in this tender document.
- 1.6. This original tender documents duly signed and officially sealed by the bidder must be submitted in whole with the proposals. Any conditional, ambiguous, incomplete, supplementary or revised offer after the opening of tender shall not be entertained.
- 1.7. The supplier will provide a warranty certificate and certificate of analysis that the quality of items supplied is strictly in accordance with the required specification and any sub standard / defected item if discovered later on will be replaced free of all charges
- 1.8. A call deposit equal to **2%** of the estimated/quoted cost should accompany the Tender as **Earnest Money** drawn in favor of **The Director, CEWRE Lahore**. The Tender shall not be considered without Earnest Money. Bank guarantee will not be accepted. The earnest money will be released after Signing the Agreement.
- 1.9. The 10% refundable security will be deducted from the Bill at the time of payment and will be refunded after one year.
- 1.10. The security deposit will be returned after successful completion of defect liability/warranty period.
- 1.11. The quantity of an order may vary depending on the quoted prices and the allocated funds.
- 1.12. The decision of the Central Procurement Cell will be a binding on all concerned and will in no case be challenged on any forum.
- 1.13. The CEWRE reserves the right to modify the conditions / specifications of the Tender Document with written intimation to all the participants those who have purchased the Tender Document.

- 1.14. Delivery period will be 30 days from the date of issuance of purchase order/supply order.
- 1.15. Delivery, Installation and Training (where required) be completed according to the agreed upon schedule of works.
- 1.16. In case the tenderer fails to execute the contract strictly in accordance with the terms and conditions laid down in the contract, the Security Deposit shall be forfeited and the computing items purchased will be at his risk and expenses.
- 1.17. The CEWRE will inspect the computing items and reject the equipment if not found according to the stated specifications.
- 1.18. The CEWRE reserves the right to claim compensation for the losses caused by delay in the delivery of computing items.
- 1.19. It is the sole responsibility of the vendor to comply with local, national and international laws.
- 1.20. In case any supplies/material is found not in conformity with the specifications provided in the tender, either on account of inferior quality, defective workmanship, faulty design, faulty packing or is short supplied, or wrongly supplied, the supplier will replace the same free of charges or pay the full cost of replacement.
- 1.21. All the proposals submitted will become the property of the CEWRE.
- 1.22. The successful bidder/tender will arrange three stamp papers @ 0.25% on total value of issuance of purchase order.
- 1.23. Advance payment is not allowed.
- 1.24. Deduction of income tax and other taxes of any kind will be deducted at the source according to Government of Pakistan prevailing rules.
- 1.25. Central Procurement Cell shall be governed by PPRA rules.

2. Evaluation Criteria

All bids shall be evaluated on technical and financial merit.

Technical evaluation process may include the followings

2.1 Technical specifications of proposed equipments

2.2 Company Profile

- i. Age of the company
- ii. Financial strength of the vendor
- iii. HR strength/Man power with the vendor
- iv. Technical support/after sale service facilities
- v. Backup support plan

Financial Evaluation process may include, but not limited to the consideration of the following:

- i. Quoted price

3. Required Information

Bidders are required to include the following documents/information in their technical proposals

- i. The Name and Address
- ii. Profile of company (Including Financial Profile)
- iii. List of Previous/Current customers of related equipments, with contact person and telephone/fax #
- iv. Detailed product information/brochures
- v. Detailed product warranty/guarantee information

- vi. Copy of National Tax Registration Certificate
- vii. Copy of Sales Tax Registration Certificate
- viii. Detailed backup support plan
- ix. Bank letter of financial standing
- x. An affidavit on Rs 100/- Stamp Paper that currently they are not black listed or de-bared by any Government/Semi-Government department to participate in bidding and to supply equipment. Failure to submit such affidavit may lead to disqualification.
- xi. Any additional information the bidder may like to furnish e.g. repair/maintenance workshop owned by supplier and other concerned facility

In addition to the above, the proposal must include the following in the order given below:

- i. Detailed Computing items specifications, proposed quantities duly filled on the BOQ attached with this documents
- ii. Terms and conditions
- iii. computing items prices duly entered on the form in the attached BOQ
- iv. Validity period of the quoted price, i.e. 60 days.
- v. Educational discounts if available/applied to the quoted price

4. Terms & Conditions

- 4.1. All prices should be in PAK rupees exclusive of Taxes. GST and /or other Tax amount where applicable should be mentioned in separate column (s) and the total given in a separate column.
- 4.2. All prices should be valid for at least 60 days. Withdrawal or any modification of the original offer within the validity period shall entitle the CEWRE to forfeit the earnest money in favour of the CEWRE and/or putting a ban on the future inquires or taking any other suitable action against the bidder.
- 4.3. Delivery of the item will be free of charge at the CEWRE during the office hours with a copy of delivery challan.
- 4.4. Items being ordered should be brand new and according to order specification from the current production and covered under normal warranty/guarantee etc. as mentioned in the proposal. Brochures and product details must be attached.
- 4.5. No offer of a supplier / firm will be considered if received without mentioned payment terms.

Name of vendor.....

Authorized person.....

CNIC.....

Authorized signature.....

Stamp

Office address.....

.....

Tel No

Fax No.....

(The filled in Tender Document should be forwarded to CEWRE with covering letter).

CENTRE OF EXCELLENCE IN WATER RESOURCES ENGINEERING
BOQ Form

Sr. No.	Description of Items	Qty	Country of Origin	F.O.R Bases (Pak Rs.)		
				Rate	Taxes	Amount
1	Laptop for Faculty	06				
2	Digital Library Laptop	01				
3	a. Workstations (Branded) 32GB RAM, Core i7,7 th generation including b. Computer Table and Chairs	10 10				
4	Development and Installation of Library Management System a. Server Computer b. Server Rack 42U c. Switch 8 Ports d. Branded Workstations e. Server Configuration and Development f. LAN, Fiber Optics Cable & CAT6E Network Cable g. Other (Duct, Electric Wiring, etc.) h. RFID Tags i. RFID Reader j. Scanners Gates RFMAX	01 01 01 02 Setup Complete Library System As per site requirement As per site requirement 5000 1 Set 1 Set				
5	Desktop Computers with LED Monitor/Display Latest Model/Specifications Branded 7 th generation.	20				

6	Interactive Smart Boards	02				
7	Document Camera with Latest Specifications	02				
8	Data Storage Device	01				
9	Printer (Heavy Duty)	01				
10	Scanner	01				
11	Server Computer	01				
12	Cisco for Networking (Wireless)	As per site requirement				
13	Data Storage Device (NAS) 16 TB	01				
14	Color Laser jet 6015 A3 size	01				
15	Scanner Latest Model/Specifications with Auto Document Feeder Facility (A3 size)	01				
16	Laser Jet Printer with 40 PPM or Higher (Colored)	02				
17	LED Screen 60" or Higher with Internet Facility Latest Model/ Specifications	01				
TOTAL AMOUNT (Pak Rs.)						

NOTE: Detailed technical specifications of above equipment is attached as Annexure-A

TECHNICAL SPECIFICATIONS OF COMPUTING FACILITIES

Annexure-A

Item 1 & 2: Laptop Core i7, 7th Generation (Equivalent or Higher Specifications)

Specifications

Processor:	Intel Core i7, 7 th Generation with Intel Turbo Boost Technology, 4 MB Cache)
RAM:	16GB DDR4 (2133 MHz) supports upto 32GB
Hard Disk:	1TB SATA
Graphic Card:	2GB Graphic Card (NVidia GeForce or Better)
Display:	14.0", HD (1366x768), Anti-Glare Display
Web Cam:	720p HD or Better
Ethernet:	Gigabit Ethernet Connection
WLAN:	Intel Dual Band Wireless AC-8265
Bluetooth:	Bluetooth Wireless,
Multi Card Reader:	4-in-1 Card Reader
Battery Type:	Li-Polymer 3-Cell (45Wh); upto 8 hours
Ports:	Two USB 3.0, One USB 2.0, HDMI, Ethernet (RJ-45), Combo Audio/Microphone jack.
Keyboard:	6-row, spill-resistant, multimedia Fn keys
Warranty:	1 Year
Carry Case :	Standard Carrying case (Same Brand)

Item 3 a): Workstations (Branded) 32GB RAM, Core i7, 7th Generation (Equivalent or Higher Specifications)

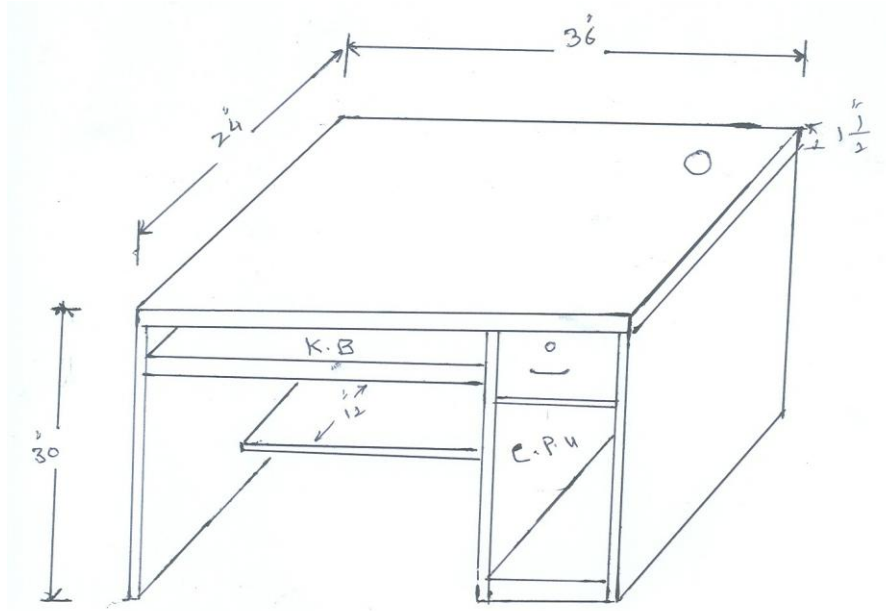
Specifications

Processor:	Intel Xeon E5-2600 v4 8C Processor
Memory:	32GB DDR4, Max Memory: Upto 384GB
Hard Disk:	1 TB
Graphic Card:	Quadro Min. 16 GB or Higher
Ports: Front:	Four USB 3.0 (one Diagnostic, one Always On), one combo audio/microphone jack (3.5mm).
Rear:	Four USB 2.0, four USB 3.0 (blue), one serial (9-pin), two ethernet (RJ-45),three analog audio ports (line-in, line-out, mic-in), two PS/2
Power Supply:	One fixed 650 watts, autosensing, 92%, 80 PLUS Platinum qualified
Card Reader:	9-in-1 USB 2.0 card reader
Network Interface:	Integrated two-port gigabit ethernet, supports Wakeon-LAN
Display:	LED 21"
Warranty:	3/3/3

Item 3 b): Computer Table and Chairs

Specifications Computer Table Size 3' x 2' x 30"

All structure made by $\frac{3}{4}$ " thick lamination board of good quality also used solid wood having one key board tray one CPU cabinet one drawer and one shelf keyboard and drawer slide imported reeling with draws lock finished with N.C. lacker polish (as per drawing).



Specifications Computer Chair

Seat and Back shell type cushion die cost foam covered with imported cloth. Five Start imported hydraulic base with wheel (as per sample).



Item 4: Development and Installation of Library Management System

Specifications

a. **Server Computer**

Chassis	2U Rack Mountable
CPU:	2x E5-2600 v3 product family, 8C 3.2GHz, 20MB, 2133MHz 135W
Motherboard:	Intel C612 Series
Memory:	2 x 16GB (Up to 24 DIMM sockets; Memory speed up to 2133 MHz)
Hard Disk Drives:	4 x 300 GB 12G SAS 15K 2.5in
Optical Drive:	9.5mm SATA DVD-ROM
Controller:	12 Gb SAS/SATA controllers
Interface:	Embedded 4x1Gbe NIC, 4x Integrated RJ-45 Gigabit Ethernet 1000BASE-T ports; 1x SD Media Adapter slot;
Front:	1x USB 3.0 (8x 3.5" and up to 16x 2.5" drive bay models), 2x USB 2.0, and 1x DB-15 Video.
Rear:	2x USB 3.0, 2x USB 2.0, and 1x DB-15 video ports. Optional 1x DB-9 serial
BUS Slots:	Six PCI-Express 3.0 Slots, 2 x 16 and 4 x 8 slots
Power Supply:	750W Redundant Hot Plug Power Supply
Fans:	Redundant Hot Plug system Fans
Embedded system Management:	Supported embedded monitoring ongoing management, service alerting, reporting and remote management
Display:	LED 21"
OS:	Microsoft Server 2016 Installed
Other OS & Virtualization Support:	Microsoft Windows Server Canonical Ubuntu Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMWare Citrix XenServer
Warranty:	3 Year Part, 3 Year Labour, 3 Years on site support
Provisioning:	Essential Tools, Drivers, agents to setup, deploy and maintain the server should be embedded inside the server.

Remote Management:

1. System remote management support browser based graphical remote console preferably along with Virtual Power button, remote boot using USB/CD/DVD Drive. It should be capable of offering upgrade of software and patches from a remote client using Media/image/folder; it should support server power capping and historical reporting and should have support for multifactor authentication.
2. Support managing multiple servers via one group power control.

b. **Server Rack 42U**

1 Fix and 1 Sliding Tray
4 Fans for heat control
Front Glass door with lock, wheels with lock
8 port power distribution

c. **Switch 8 Ports**
ATEN IP KVM

ATEN KL 1508A/ 1-Local/ Remote Share Access 8 Port Cat 5 Dual Rail LCD KVM over IP Swith with Daisy-Chain Port

8x KA7170 USB KVM Adapter Cable (CPU Module)

d. **Branded Workstations 32GB RAM, Core i7, 7th Generation**

Processor: 2.70 GHz Intel Core i7 – 7th Generation
Memory: 8GB,
Hard Disk: 1 TB
Ports: Front: Four USB 3.0 (one Diagnostic, one Always On), one combo audio/microphone jack (3.5mm).
Rear: Four USB 2.0, four USB 3.0 (blue), one serial (9-pin), two ethernet (RJ-45),three analog audio ports (line-in, line-out, mic-in), two PS/2
Power Supply: One fixed 650 watts, autosensing, 92%, 80 PLUS Platinum qualified
Card Reader: 9-in-1 USB 2.0 card reader
Network Interface: Integrated two-port gigabit ethernet, supports Wakeon-LAN
Display: LED 15.6”
Warranty: 3/3/3

e. **Server Configuration and Deployment**
Complete Configuration of Library System

f. **LAN & Fibre Optics Cable & CAT6E Network Cable**
UTP Cat 6 Cable Roll

g. **Others (Duct, Electric Wriing, etc)**

- Single Mode Fiber Optic Cable (12 Core)
- Huawei S5720-28TP-PWR-LI-AC Switch, S5720-28TP-PWR-LI-AC (24 Ethernet 10/100/1000 ports 2 Gig SFP and 2 Dual-purpose 10/100/1000 or SFP, PoE+, 370W POE AC 110/220V
- Cat 6 24 Ports Patch Panel (Loaded)
- Cable Organizer
- Cat 6 Patch Cords (1M)
- Cat 6 Patch Cords (3M)
- Dual Port Shuttered Wall Plate
- Cat 6 UTP I/O Modular Jack
- Back Box Local

h. **RFID Tags CUSTOM FOAM BACKED SMARTRAC R6 SHORTDIPOLE RFID TAG**

Max. Read Distance: > 4.06m (15 ft),

Surface Material: Paper, Cardboard, Glass, Plastic, Human body,

Tag Form Factor: Wet inlay, 101x23.4x4 mm (3.98x0.92x0.16), 1g, 1,000 tags per roll
-40° to +85°C (-40° to +185°F)

i. **RFID Reader THINGMAGIC M6 UHF RFID READER (4 Port) WI-FI**

Air Interface Protocol: EPCglobal UHF Class 1 Gen 2 (ISO 18000-6C), Global (865-928 MHz), Operating Frequency: Global (865-928 MHz), Max Read Distance: 9+ m, More than 750 tags/second, Ethernet, Wi-Fi, Power over Ethernet 802.3af in both modes A and B, 4 RP-TNC female ports (connects to RP-0.9 kg (2 lbs))

j. **Scanners Gates RFMAX S9028PCR/S8658PCR (RHCP) Indoor RFID Antenna (FCC/ETSI)**

Operating Frequency: FCC (902-928 MHz), ETSI (865-858 MHz), Right hand circular, 8.5 dBic, RP-TNC male (connects to RP-TNC female), 259x259x33 mm (10.2 x 10.2 x 1.32 in), -25° to +70°C (-13° to +158°F)

Item 5: Desktop Computers Branded with LED Monitor/Display, (Equivalent or Higher Specifications)

Specifications

Processor: Intel Core i7, 7th Generation Intel HD Graphics 630 (3.6 GHz up to 4.2 GHz with Intel Turbo Boost Technology, 8 MB Cache, 4 Cores) or Better
Chipset: Intel B250 Chipset
Memory: 16GB DDR4, **Max Memory:** Up to 32 GB,
Hard Disk: 1 TB 2.5" HDD (7200 rmp)
Graphic Card: NVIDIA Geforce Min. 2 GB or Better
Ports: Front: Four USB 3.0, microphone (3.5mm), headphone (3.5mm)
Rear: Two USB 3.0, two USB 2.0, one serial (9-pin), one ethernet (RJ-45), one VGA, one DisplayPort, one HDMI, additional VGA, DisplayPort, line-out (3.5mm), microphone (3.5mm)
Network Interface: One gigabit ethernet port, Realtek RTL8111GN, Wake on LAN
Power Supply: 180 watts, autosensing, 85% PSU
Optical: DVD-ROM SATA 1.5Gb/s Drive, slim (9.0mm)
Display: LED 17"
Resolutions Supported: 1366x768, 1280x720, 1024x768, 800x600, 720x400, 640x480
Warranty: 3/3/3

Item 6: Interactive Smart Board (Equivalent or Higher Specifications)

Specifications

- Interactive Touch LED 80”,
- Ci3 Built-in Notebook Software for Integration with Microsoft Software, Meetings and Content,
- Zoom Video Conference Software Includes Wireless Keyboard,
- Mouse
- Complete Provisioning Installation

Item 7: Document Camera (Equivalent or Higher Specifications)

Specifications

- HDMI Pass Through
- Powerful 96 x Zoom (12x Optical Zoom, 8 x Digital Zoom) or better
- 3.4 MP CMOS Sensor
- Full HD 1080p
- USB Video Class Compliant (Seamlessly used as webcam)
- Multi-directional Camera Nec
- A3 Capture Area
- Built-in Microphone
- Remote Control

Item 8: Data Storage Device (Equivalent or Higher Specifications)

Specifications

Interface type:	USB 3.0 & FIREWIRE 800
Size:	3.5
Storage Capacity:	upto 10Tb
Storage type:	External

Item 9: Printer Laser Jet (Heavy Duty) (Equivalent or Higher Specifications)

Specifications:

Print Speed:	Up to 45 ppm
First Page Out:	As fast as 6.0 sec
Print Resolution:	1200 x1200 dpi or higher
Connectivity:	Hi-speed USB 2.0 port; Built-in Fast Ethernet 10Base-Tx, Gigabit Ethernet 1000Base-T
Memory:	512MB to 1.5GB or Batter
Processor:	1.2 GHz or higher

Duty Cycle:	Up to 150,000 Pages
Input:	100-sheet multipurpose Tray 1, 550 sheets input Tray-2
Automatic Duplex Printing:	Yes
Output:	250 sheets
Media Type:	Paper (bond, color, letterhead, plain, preprinted, prepunched, recycled, rough); envelopes; labels; cardstock; transparencies; user-defined
Warranty:	3/3/3

Item 10: Scanner (Equivalent or Higher Specifications)

Specifications:

Scanner type:	Flatbed, ADF
Scan Resolution, Optical:	up to 600 dpi (color and monochrome, ADF); up to 1200 dpi (color and monochrome, Flatbed)
Bit Depth:	24-bit external 48-bit internal or better
Levels of Grayscale:	256
Control Panel:	5 buttons (Including Sleep/Power button) or better
7 LEDs	(including power, Error, Scan to which destination and simplex/Duplex) or better

Item 11: Server Computer (Equivalent or Higher Specifications)

Specifications

Chassis	2U Rack Mountable
CPU:	2x E5-2600 v3 product family, 8C 3.2GHz, 20MB, 2133MHz 135W
Motherboard:	Intel C612 Series
Memory:	2 x 16GB (Up to 24 DIMM sockets; Memory speed up to 2133 MHz)
Hard Disk Drives:	4 x 300 GB 12G SAS 15K 2.5in
Optical Drive:	9.5mm SATA DVD-ROM
Controller:	12 Gb SAS/SATA controllers
Interface:	Embedded 4x1Gbe NIC, 4x Integrated RJ-45 Gigabit Ethernet 1000BASE-T ports; 1x SD Media Adapter slot;
Front:	1x USB 3.0 (8x 3.5" and up to 16x 2.5" drive bay models), 2x USB 2.0, and 1x DB-15 Video.
Rear:	2x USB 3.0, 2x USB 2.0, and 1x DB-15 video ports. Optional 1x DB-9 serial port.
BUS Slots:	Six PCI-Express 3.0 Slots, 2 x 16 and 4 x 8 slots
Power Supply:	750W Redundant Hot Plug Power Supply
Fans:	Redundant Hot Plug system Fans
Embedded system Management:	Supported embedded monitoring ongoing management, service alerting, reporting and remote management
Display:	LED 21"
OS:	Microsoft Server 2016 Installed

Other OS & Virtualization Support:Microsoft Windows Server Canonical Ubuntu Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMWare Citrix XenServer

Warranty: 3 Year Part, 3 Year Labour, 3 Years on site support

Provisioning: Essential Tools, Drivers, agents to setup, deploy and maintain the server should be embedded inside the server.

Remote Management:

1. System remote management support browser based graphical remote console preferably along with Virtual Power button, remote boot using USB/CD/DVD Drive. It should be capable of offering upgrade of software and patches from a remote client using Media/image/folder; it should support server power capping and historical reporting and should have support for multifactor authentication.
2. Support managing multiple servers via one group power control.

Item 12: Cisco for Networking (Wireless) Complete

Specifications

24 Port High-Performance, Reliable, Stacking Switch for Small Businesses
Equivalent or Higher Specifications

Complete Network Installation with Wireless facility in CEWRE with equipments including Network Cable, Duct, Electric Wiring, jacks etc.
(Complete in all aspect)

Item 13: Data Storage Device (NAS) 16 TB (Equivalent or Higher Specifications)

Specifications

Processor: 1 x Intel Xeon 2609v4 (1.7GHz/ 8-Core/ 20MB/ 85 W)
Memory: 2 x 8GB 1R x 4 PC4-2133P-R
Hard Disk: 16 TB SAS LFF SC 4 HDD
Disk Capacity: 120 TB Maximum internal; additional external capacity supported with D3000 and D6000 Disk Enclosures
Ethernet: 1G 4-Port Adapter
3 x PCI Slot
1 x Integrated SAS Adapter
1 x SAS Controller
1GB Integrated RAID Controller
2 x 800W CS Hot Plug Power Supply Kit
Chassis: 2U Form Factor
Complete Installation: Yes
Warranty: 3 Years warranty

Item 14: Color Laser jet 6015 A3 Size (Equivalent or Higher Specifications)

Specifications

Print Speed:	Black & Color Up to 20 ppm or higher
Print Quality:	Black & Color Minimum 600 x 600 dpi or higher
Processor:	540MHz or Higher
Memory:	Standard 192 MB or higher
Media Sizes:	Tray-1 A3, A4, A5, A6, RA3, SRA3, B4, B5, 10x15cm

Item 15: Scanner with Auto Document Feeder Facility (A3 Size)

Specifications

Scanner type:	Flatbed, ADF
Digital sending standard features:	Local or network folder; e-mail; SharePoint 2007 & 2010; Cloud destinations; Google Drive; Box; FTP; printer; fax; user-defined command-line application; web folder
Scan resolution, optical:	Up to 600 dpi
Duty cycle (daily):	Recommended daily duty cycle: 5000 pages
Bit depth:	48-bit
Levels of grayscale:	256
Multifeed detection:	Yes, ultrasonic
Scan size, maximum:	297.2 x 431.8 mm
Media types:	Paper (plain, inkjet, photo), envelopes, cards (index, greeting), 3-D objects
Media weights, supported ADF:	49 to 120 g/m ²
Scan file format:	PDF (image-only, searchable, MRC, PDF/A, encrypted), TIFF (single page, multi-page, compressed: G3, G4, LZW, JPEG), DOC, RTF, WPD, XLS, TXT, XML, XPS, HTML, OPF, JPG, BMP, PNG
Scan input modes:	Quick start buttons, Smart Document Scan Software and Document Copy; software scan using Smart Document Scan Software; user application via TWAIN, ISIS, WIA or Kofax Virtual Rescan (VRS) Professional drivers
Scanner advanced features:	48-bit internal/24-bit external bit depth
Control panel:	2 quick start buttons (Scan, Copy), Cancel, Tools, Powersave
Automatic document feeder capacity:	Standard, 200 sheets
Automatic document feeder speed:	Up to 50 ppm/100 ipm (black & white, grey, colour, 200 dpi)
Scanning options (ADF):	Single-pass duplex
Scan size (ADF), maximum:	300 x 864 mm
Scan size (ADF), minimum:	70 x 148 mm
Compatible operating systems:	Windows 10 (32-bit, 64-bit), Windows 8 (32-bit, 64-bit), Windows 7 (32-bit, 64-bit), Windows Vista (32-bit, 64-bit), Windows XP (32-bit, 64-bit) with Service Pack 3

(Equivalent or Higher Specifications)

Item 16: Laser Jet Printer (Colored) with 40 PPM or Higher

Specifications

Print Speed:	Black & Color Up to 28 ppm or higher
Print Quality:	Black & Color Minimum 600 x 600 dpi or higher
Print Technology:	Laser
Connectivity:	Hi-speed USB 2.0 port, Built-in Fast Ethernet 10/100Base-TX network port
Mobile print capability:	Yes
Memory:	128 MB minimum
Processor speed:	800 MHz or higher
Duty cycle (Monthly A4):	up to 30,000 pages

Item 17: LED Screen 60" or Higher with Internet Facility Latest Model/ Specifications

Features:	4K HDR Processor X1 Extreme, 4K X-Reality PRO, Android, Chromecast, ClearAudio, DTS Digital Surround, Dual database processing, DYNAMIC BACKLIGHT CONTROL, Dynamic Contrast Enhancer, ELECTRONIC PROGRAMME GUIDE (EPG), Google Play Store, Live Colour Technology, Local Dimming, Magnetic Fluid Speaker, Magnetic Fluid Speaker), Motionflow™ XR 800 (Native 100 Hz), Object-based HDR remaster, ON/OFF TIMER, Passive Radiator, Photo Sharing Plus, POWER SAVING MODE/ BACK LIGHT OFF MODE, Precision Colour Mapping, S-Force PRO Front Surround, Screen mirroring (Miracast), SLEEP TIMER, SubWoofer (Bass Reflex Speaker, Super bit mapping 4K HDR, TELETEXT, TRILUMINOS display, Video and TV SideView (iOS/Android), VOICE SEARCH, X-tended Dynamic Range PRO
Power Supply:	50/60 Hz, AC 110-240V Hz
Display Features:	Ultra HD Features
Model Year:	2017
Functionality:	Smart TV Units
Warranty:	2 Years
Display Type:	LED
Screen Size:	60 Inches or Higher
Connectivity:	HDMI, USB, WiFi
Resolution:	3840x2160
Number of selectable Picture Modes:	12
Selectable Sound Modes:	4
Number of Speakers:	2
Audio Output:	60 Watts
Color:	Black