



TransPeshawar - The Urban Mobility Company

Request for Quotation of Goods

**Supply, Installation, Testing and Commissioning of IT Equipment for
TransPeshawar**

REQUEST FOR QUOTATION

Procurement Title	Supply, Installation, Testing and Commissioning of IT Equipment for TransPeshawar
Source of Funding	Asian Development Bank
Tender Ref. No.	TPC/IT/RFQ/G/2020/001
Bid Security	Bid Security shall be two (2%) of the quoted amount (Contract Price) submitted in shape of Demand Draft/ CDR/PO from a scheduled bank of Pakistan in the name of the Chief Executive Officer, TransPeshawar (The Urban Mobility Company).
Performance Security	The successful bidder shall be required to provide performance security to the amount of Five (5%) of the Contract Price from a scheduled bank of Pakistan in form of bank guarantee or Call Deposit Receipt (CDR) or Demand Draft, within fourteen (14) days of issuance of Letter of Acceptance/Purchase Order. Performance Security shall remain valid throughout the execution of the contract and until 28 days after completion of the Contract.
Date of this Request	March 20, 2020
Pre-Bid Meeting	3:00 PM March 30, 2020 (Monday)
Deadline for Submission of Quotations	3:00 PM April 07, 2020 (Tuesday)
Opening of Quotation	3:15 PM April 07, 2020 (Tuesday)

To:

Dear Sir,

1. The CEO TransPeshawar (Purchaser), hereby issued this RFQ for **Supply, Installation, Testing and Commissioning of IT Equipment for TransPeshawar**. If you, however, have been associated with the firm that prepared the design, and specifications of the contract that is subject of this procurement, you shall be disqualified.

To assist you in the preparation of your price quotation we enclose the necessary technical specifications, required quantities and terms and condition. "**Statement of Requirements**" comprising technical specifications and quantities is attached as Annexure-I.

2. You must quote for all the items under this request. Price quotations will be evaluated for all the items together and contract awarded to the firm offering the lowest evaluated total cost of all the items.
3. You shall submit one original of the Price Quotation with the Form of Quotation, and clearly marked "Original". In addition, you shall also submit one copy marked as "COPY". In case of any discrepancy between the Original and Copy, the original shall prevail. Your quotation in the attached format should be signed, sealed in an envelope and addressed to and delivered to the following address:

Chief Executive Officer (CEO),
TransPeshawar (The Urban Mobility Company)
Ali Tower, 2nd Floor (opposite Custom House)
University Road, Peshawar.
Telephone: 091-5700127-8

4. Your quotation in duplicate and written in English language, should be accompanied by supporting documents as per requirement given below, and adequate technical documentation, catalogue(s) and other printed material or pertinent information (in English language) for the proposed supply, installation, testing and commissioning of IT Equipment.
5. The **deadline** for receipt of your quotation by the Purchaser at the address indicated in **Paragraph 3** is: at **3:00 pm 7th April 2020 and the bids will be opened at 3:15 pm 7th April 2020**.
6. You shall submit only one set of quotations for the above items. Your quotation must be typed or written in indelible ink and shall be signed by you or your authorized representative. Without a signature in your Form of Quotation, your quotation will not be considered further.
7. Your quotation(s) should be submitted as per the following instructions and in accordance with the attached form of Contract. The attached Terms and Conditions of Supply is an integral part of the Contract.

- (i) **PRICES:** The prices shall be quoted in Pakistani Rupees **inclusive of all applicable taxes** for supply, installation, testing and commissioning of all items to:

TransPeshawar office KPUMA Building,
Near Northern Bypass Chamkani,
Peshawar

- (ii) **EVALUATION OF QUOTATIONS:** Offers determined to be substantially responsive to the technical specifications given under Appendix-I and meeting the minimum requirement as mentioned below shall be evaluated by comparison of their prices. An offer is not substantially responsive if it contains material deviations or reservations to the terms, conditions, minimum requirements, and specifications in this Request for Quotation, and it will not be considered further. The Purchaser will evaluate and compare only the quotations determined to be substantially responsive. In evaluating the quotations, the Purchaser will adjust for any arithmetical errors as follows:

- (a) Where there is a discrepancy between amounts in figures and in words, the amount in words will govern;
- (b) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern;
- (c) If a Supplier refuses to accept the correction, his quotation will be rejected.

- (iii) **MINIMUM REQUIREMENTS:** Following are the mandatory requirements to be fulfilled by participating bidders. The Purchaser will evaluate and compare only quotation which comply the basic requirements given below.

- Incorporated/registered with Security & Exchange Commission of Pakistan or registrar of firms having minimum three (03) years of establishment. (Attach a certificate of incorporation/registration);
- Registered with FBR and on Active Tax Payer List (ATL) (Attach certificate);
- Registered with Khyber Pakhtunkhwa Provincial Revenue Authority (KPRA) in sale tax on services (Attach certificate);
- Company/firm is not blacklisted by any public or private entity (Attach statement on oath/affidavit to the effect).

- (iv) AWARD OF PURCHASE ORDER. The award will be made to the bidder offering the lowest evaluated price and that meets the required technical specification and fulfill the minimum requirements. The successful bidder will sign a Contract as per attached form of contract and terms and conditions of supply.
- (v) VALIDITY OF THE OFFER: Your quotation(s) should be valid for a period of **forty-five (45) days** from the deadline for receipt of quotation(s) indicated in Paragraph 5 of this Request for Quotation.
- (vi) BID SECURITY: Each bidder shall furnish, as a part of his bid, at the option of the bidder, a bid security of two (2%) of the quoted price in shape of Demand Draft/ CDR/PO from a Scheduled Bank of Pakistan in the name of the Chief Executive Officer, TransPeshawar (The Urban Mobility Company).
- a) The bid security shall remain valid for a period of Twenty-Eight (28) days beyond the original validity period of the bids.
 - b) Any bid not accompanied by an acceptable bid security shall be rejected by the employer as non-responsive.
 - c) Bid security of the unsuccessful bidders shall be released once the successful bidder furnishes the prescribed performance security or on the expiry of the validity of bid security whichever is earlier.
 - d) The bid security of a successful bidder shall be returned once the successful bidder has signed the contract and furnished the required performance security.
 - e) The Bid security shall be forfeited:
 - (i) If a bidder withdraws his bid during the period of bid validity; or
 - (ii) If a bidder doesn't accept the correction of his Bid Price as described above; or
 - (iii) In the case of a successful bidder, if he fails to:
 - Furnish the performance security in accordance with the terms and conditions of the Contract;
 - Sign the contract agreement, in accordance with the terms and conditions of the RFQ
8. The bidder / supplier whose quotation has been accepted will be notified of the award of contract through the Purchase Order/Letter of Acceptance within the validity period.
9. The Purchaser intends to apply for funds from the Asian Development Bank (ADB) for eligible payments under the Purchase Order resulting from this RFQ.
10. Under ADB's Anticorruption Policy bidders shall observe the highest standard of ethics during the procurement and execution of such contracts. ADB will reject a proposal for award, and will impose sanctions on parties involved, if it determines that the bidder recommended for award or any other party, has engaged in corrupt, fraudulent, collusive, or coercive practices in competing for, or in executing, the Contract. At the time of submission of your quotation, you should not be in ADB's sanctions list.
11. In case you seek any clarification regarding the specifications, terms and conditions of the service, please contact via email to fayyaz.khan@transpeshawar.pk, tahir.islam@transpeshawar.pk, khalil.ahmed@transpeshawar.pk
12. The Purchaser reserves the right to accept or reject any or all quotations subject to relevant provisions of ADB Procurement regulations.

Sincerely,

CEO, TransPeshawar office
Peshawar Sustainable Bus Rapid Transit Corridor Project
2nd Floor Ali Towers (opposite Custom House) University Road,
Peshawar

FORM OF QUOTATION

(On the letter head of the Supplier)

To:

Chief Executive Officer,
TransPeshawar (The Urban Mobility Company),
2nd Floor Ali Towers (opposite Custom House),
University Road, Peshawar

We offer to execute the **“Supply, Installation, Testing and Commission of IT Equipment for TransPeshawar”** in accordance with the Conditions of Contract accompanying this Quotation for the Contract Price of _____ (amount in words and numbers) Pak Rupees. We propose to complete the supply and installation described in the Contract within the following Supply and Installation schedule from the Date of Signing of the Contract.

S#	Description	Specification of items Proposed by Supplier	Quantity (A)	Unit Price inclusive of all taxes (PKR) (B)	Total Price (PKR) (A x B)	Schedule for Supply & Installation
1	2U Rack Server		01			Forty-Five (45) days
2	Network Attached Storage		01			
3	Digital Telephone Exchange		01			
4	Wi-Fi Access Point		14			
5	PoE Switch		01			
6	L-3 Switch		01			
7	Switch		02			
8	Security Gateway		01			
9	Cat-6 UTP Cable *		As per actual			
10	Patch Panel		04			
11	Cable Manager		32			
12	Ethernet Surge Protector		08			
13	SFP to Ethernet Media Convertor		08			
14	Rack mounted 08 port Fiber ODF		01			
15	24 channel Amphenol connectors with 3-meter cable		06			

16	Cat -6 Tuff cable 24 AWG		01 Roll		
17	5 KW Isolation Transformer		01		
18	5-M SM Fiber Pig tail		05		
19	Patch Cord (1m)		100		
20	Patch Cord (3m)		100		
21	Server Rack		02		
22	3KVA UPS		02		
23	VMware vSphere 6.7		01		
24	Microsoft® Windows Server 2016 Standard Edition		01		
25	Microsoft® Windows 10 Pro 64-bit SNGL OLP		02		
Grand Total					

*The price for Cat6 UTP cable shall be quoted as per meter (Rs/m).

This Quotation and your written acceptance will constitute a binding Contract between us. We understand that you are not bound to accept the lowest or any Quotation you receive.

We hereby confirm that this Quotation complies with the Validity of the Offer and Warranty conditions imposed by the Request for Quotation document and the Terms and Conditions of Supply, respectively.

We have not been associated with the firm that prepared the design and specifications of the contract that is subject of this request for quotation.

We are not in the ADB sanctions list.

Authorized Signature:

Name and Title of Signatory:

Name of Supplier:

Address:

Telephone No.

FORM OF CONTRACT

THIS AGREEMENT Number **TPC/ IT/Shopping/G/2020/001** made on----- day of -----, 2020, between **CEO TransPeshawar, 2nd Floor Ali Towers (opposite Custom House) University Road, Peshawar** (hereinafter called “the Purchaser”) on the one part and _____(Company Name)_____ (hereinafter called “the Supplier”) on the other part.

WHEREAS the Purchaser has requested for quotation to be supplied by Supplier, viz. **Contract Supply, Installation, Testing and Commissioning of IT Equipment for TransPeshawar** (hereinafter called “Contract”) and has accepted the Quotation by the Supplier for the supply and installation of goods under Contract at the sum of PKR. hereinafter called “the Contract Price”

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The following documents shall be deemed to form and be read and construed as part of this agreement, viz:
 - a) Letter of Acceptance/Purchase Order;
 - b) Request for Quotation; Terms and Conditions of Supply, Technical Specification;
 - c) Statement of Requirement; Appendix-I
 - d) Addendum (if applicable);
2. Taking into account payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby concludes an Agreement with the Purchaser to execute and complete the supply, installation, testing and commissioning of IT equipment for TransPeshawar under the Contract and remedy any defects therein in conformity with the provisions of the Contract.
3. The Purchaser hereby covenants to pay, in consideration of the acceptance of Contract, supply, installation, testing and commissioning of IT equipment for TransPeshawar and remedying of defects therein, the Contract Price in accordance with Payment Conditions prescribed by the Contract.

IN WITNESS whereof the parties hereto have executed the Contract under the laws of Islamic Republic of Pakistan on the date indicated above.

Signature and seal of the Purchaser:

Signature and seal of the Supplier:

FOR AND BEHALF OF

FOR AND BEHALF OF

Name of Authorized Representative

Name of Authorized Representative

TERMS AND CONDITIONS OF SUPPLY

Procurement Title: Supply, Installation, Testing and Commissioning of IT Equipment for TransPeshawar

Purchaser: CEO TransPeshawar, 2nd Floor Ali Towers (opposite Custom House) University Road, Peshawar

Supplier:

1. Schedules for Supply

S#	Description of Office IT / Computer Equipment	Quantities	Place of Delivery and Installation	Supply and Installation Schedule
1	2U Rack Server	01	TransPeshawar Office KPUMA Building Near Northern Bypass, Chamkani, Peshawar	Within forty-five (45) Days after signing the Contract
2	Network Attached Storage	01		
3	Digital Telephone Exchange	01		
4	Wi-Fi Access Point	14		
5	PoE Switch	01		
6	L-3 Switch	01		
7	Switch	02		
8	Security Gateway	01		
9	Cat-6 UTP Cable	As per actual		
10	Patch Panel	04		
11	Cable Manager	32		
12	Ethernet Surge Protector	08		
13	SFP to Ethernet Media Convertor	08		
14	Rack mounted 08 port Fiber ODF	01		
15	24 channel Amphenol connectors with 3-meter cable	06		
16	Cat -6 Tuff cable 24 AWG	01 Roll		
17	5 KW Isolation Transformer	01		

18	5-M SM Fiber Pig tail	05		
19	Patch Cord (1m)	100		
20	Patch Cord (3m)	100		
21	Server Rack	02		
22	3KVA UPS	02		
23	VMware vSphere 6.7 (for 2 Processors)	01		
24	Microsoft® Windows Server 2016 Standard Edition	01		
25	Microsoft® Windows 10 Pro 64- bit SINGL OLP	02		

2. Fixed Price: The price quoted by the Supplier shall remain firm and fixed and not subject to any adjustment during contract performance.
3. Reserve Rights: The Purchaser reserves the right to accept or reject any or all quotations or increase/decrease the quantity subject to relevant provisions of ADB Procurement Guidelines.
4. Delivery Schedule: The delivery should be completed as per above schedule.
5. Insurance: The goods supplied under the Contract shall be fully insured in a freely convertible currency against loss of damage incidental to manufacture or acquisition, transportation, storage and delivery. The insurance shall be in an amount equal to 110 percent of the value of the Goods on "All risks" basis.
6. Performance Security: The successful bidder shall be required to provide performance security to the amount of Five (5%) of the Contract Price from a scheduled bank of Pakistan in form of bank guarantee or Call Deposit Receipt (CDR) or Demand Draft, within fourteen (14) days of issuance of Letter of Acceptance. Performance Security shall remain valid throughout the execution of the contract and shall be returned within 10 days after the expiry of warranty period subject to satisfactory performance.
The Performance Security shall be forfeited if the Supplier fails to supply and install the goods and remedying defects therein during execution and warranty period in accordance with the terms and conditions of supply or commits any breach under the Contract.
7. Applicable Law: The Contract shall be interpreted in accordance with the laws of the Islamic Republic of Pakistan.
8. Resolution of Disputes: The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute between them under or in connection with the Contract. In the case of a dispute between the Purchaser and the Supplier, the dispute shall be settled in accordance with the provisions of the Arbitration act of Pakistan.
9. Delivery and Documents: Upon delivery, the Supplier shall provide the following documents to the Purchaser:
 - (i) Copies of the Supplier's invoice showing goods' description, quantity, unit price, and total amount;
 - (ii) Manufacture's or supplier's warranty certificate
10. Payment: Payment of the contract price shall be made in the following manner:
 - (i) 70% upon receipt, inspection and acceptance by the Purchaser of the delivered goods on site in accordance with the contract; and

(ii) 30% upon completion of installation, testing and commissioning along with operational acceptance of the delivered goods by the Purchaser.

11. Warranty: The Goods offered should be covered by manufacturer's warranty for at least one (01) year from the date of delivery to the Purchaser.
12. Packaging and Marking Instructions: The Supplier shall provide standard packing of the Goods as required preventing their damage or deterioration during transit to their final destination.
13. Defects: All defects shall be corrected by the Supplier without any cost to the Purchaser during warranty period within **Ten (10)** calendar days from the date of notice by Purchaser. The name and address of service facility where the defects are to be corrected by the supplier within the warranty period are:

Address (**to be filled by Supplier**): _____

14. Force Majeure: The supplier shall not be liable for penalties or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
For purposes of this clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but not restricted to, act of Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by Force Majeure event.
15. Required Technical Specifications: The required technical specification is attached as "**Statement of Requirements**", Appendix-I. The Supplier confirms compliance with the mentioned specifications.
16. Failure to Perform: The Purchaser shall cancel the Contract if the Supplier default under the Contract, or any part thereof, in accordance with the above terms and conditions and it shall constitute sufficient grounds for calling performance security.

STATEMENT OF REQUIREMENTS

1. All the equipment provided by the supplier must be in compliance with the specification mentioned here as under;
2. The successful bidder will support in performing inspection of all the items and demonstrating that all the equipment's are in the perfect condition and in accordance with the RFQ;
3. All the licenses (Virtualization & Windows) must be genuine and the licenses will be handed over to the Purchaser, In the case of Virtualization, the successful bidder will install all the licenses in the presence of the Purchaser.
4. The specification must be equivalent or higher from the below mentioned items
5. Design Configure and Setup our wireless network along with Web manager for Configuration.
6. Suggest, Design, Setup, configuration of Network Topology for KPUMA building, here are the few requirement for the network design.
 - Hotspot for the Guest network
 - Redundant setup
 - Backhaul setup design configuration
 - Complete Training on deployed Network and configuration
 - All setup / configuration must comply as per Cisco / Microsoft Rules
7. Fully Design server room along with patching/tagging the patch panel
8. Design must comply with Cisco / Microsoft standard
9. All designing Documentation must be share at the end of the project to the concern department
10. Polices and Design
 - Deployment of Security gateway in active standby configuration
 - Deployment of a basic firewall security policy to protect server room resources
 - Deployment of an integrated Intrusion Prevention System (IPS) in an in-line configuration
 - Deployment of in-line IPS security policy to protect server room resources
11. The following configuration documents shall be provided after installation:
 - Ethernet Data Center Design
 - Fiber Channel Data Center Design
 - Security Data Center Design
 - Resilient WAN Design
 - Resilient WAN Optimization Design
 - Resilient Server Design
12. Telephony setup must be design Purely on Digital protocols which must comply with SIP, VOIP, PRI and BRI trunking.
 - Training on unified software's.
 - Class of service must be defined and deployed
 - E1 – T1 mesh network design for future deployment and design
 - Alias and Tagging must be changeable from the software
 - PSU (power supply unit) must be power full enough to run 128 Extensions at the same time
 - Configuration Server Design and Deployment on the server for future configuration if needed
 - Fully comply intermigration with Unified communication system
13. Cat-6 UTP cable per meter rate shall be quoted. All allied accessories and installation.
14. Deployment of VMware vSphere 6.7 on Server with hands on training.

Required Technical Specifications

The specification must be equivalent or higher from the below mentioned items

Sr. No	Items	Specification	Qty
01	2U Rack Server	Chassis with up to 8 x 3.5" SAS/SATA Hard Drives for 2CPU Configuration (*1) Intel Xeon Silver 4210 2.2G, 10C/20T, 9.6GT/s, 13.75M Cache, Turbo, HT (85W) DDR4-2400 (*2) 32GB RDIMM, 2666MT/s, Dual Rank (*4) PERC H730P RAID Controller, 2GB NV Cache, Adapter, Low Profile(1) 2TB 7.2K RPM NLSAS 12Gbps 512n 3.5in Hot-Plug Hard Drive(*4) iDRAC9,Express (1) Broadcom 5720 Quad Port 1GbE BASE-T, rNDC Dual, Hot-plug, Redundant Power Supply (1+1), 750W 3Yr ProSupport: Next Business Day Onsite Service-VN,PK,PH,BN,SL,BD Ready Rails™ Sliding Rails With Cable Management Arm DVD+/-RW,SATA, Int Operating System: No	01
02	Network Attached Storage	CPU: Intel Atom C3538 Quad-core 2.1GHz CPU Architecture: 64-bit Hardware Encryption Engine (AES-NI): Yes RAM: 32GB (16GB*2) Drive bays: 6 x 3.5"/2.5" hot swappable Hard Drives: 24TB (6TB*4) Compatible Drive Types: 3.5" SATA HDDs, 2.5" SATA HDDs & SSDs (Optimized for NAS with Agile Array, 1 M hours MTBF, 7200 rpm, Designed for always-on, always-accessible 24x7 performance, Rotational Vibration (RV) sensors, Interface: SATA 6 Gb/s , 3-year limited warranty) LAN ports: 4 x RJ-45 1GbE PCIe expansion: 1x Gen3 x8 Slot USB 3.0 ports: 3x Hardware encryption: Yes Dimensions: 166 x 282 x 243 mm Weight: 5.05kg Warranty: 3 years	01
03	Digital Telephone Exchange	Providing, Installation, Testing and Commissioning of complete computerized 16+200 (ISDN Supported) with built-in digital PABX system (as approved) by Pakistan Telecommunication Authority, Ministry of Communication) having 220 volts, 50 Hz configuration of 16 CO (PSTN Trunk Ports) + 8 Digital Ports + 192 Analog Ports) with 01 no of operator console. The following hardware, operator console features, trunk facilities and extension feature etc. as under <ul style="list-style-type: none"> • Direct Inward Dialing (DID) • Extension Dialing • Hosting PABX • Auto Attendant • Web Portal HARDWARE: 01 no Main Cabinet	01

Equivalent or Higher

		<p>01 no Expansion cabinets with accessories Power supply with built-in charger Main Control Hardware Processor Local Control Processing Hardware, 16 Ports Trunk Card with display of CLI, 08 Ports Digital Extension Card 16 ports Analog card with display of CLI Digital Attendant Console with LCD. Soft keys with colored light indication LCD with CLI, date, time and day status Hands free operations with call backpage, redial, do not disturb and mute functions Display of incoming call CLI on Analog/normal Extension. The embedded voice mail with auto attendant features on immediate, personalized and unobstructed access to callers. This mail boxes for recording the message of un-attendant calls. The battery backup unit only for PABX system The backup time (01 HR to 1.5 HRs) The installation , training , testing and commissioning of the system with one year manufacturer's warranty for all defects in materials from the date of delivery, excluding of any accidental damage or burnt cases or in-house wiring and telephone sets. Digital Set: 8 Programmable CO Keys, 1 line x 16-digit LCD, Hands-Free Speech Master Set with DSS Console(s): 2 Digital Telephone Set(s): 50</p>	
04	Wireless Access Points	<p>Dual-Radio APs, feature the latest in Wi-Fi 802.11AC MIMO technology. Wireless Uplink functionality wireless connectivity between APs for extended range. One wired AP uplink supports up to four wireless downlinks on a single operating band, allowing wireless adoption of devices in their default state and real-time changes to network topology. Power devices with a PoE Switch. auto-sensing IEEE 802.3af PoE/802.3at PoE+. Networking Interface (3) 10/100/1000 Ethernet Ports Power Method 802.3at PoE+ Supported. PoE Out 48V Pass-Through Maximum TX Power 2.4 GHz, 5 GHz, 20 dBm, 20 dBm Antennas 2.4 GHz, 5 GHz Dual-Band Antenna, Single-Polarity 1 dBi, 2 dBi. Wi-Fi Standards 802.11 a/b/g/n/r/k/v/ac Wireless Security WEP, WPA-PSK, WPA-Enterprise (WPA/WPA2, TKIP/AES). BSSID Up to 8 per Radio. Mounting 1-Gang Electrical Wall Box (Not Included), Certifications CE, FCC, IC</p>	14
05	PoE Switch	<p>24 RJ-45 ports with 2 SFP+ ports, Layer 2 switching protocols and features, the PoE Switch offers Layer 3 capabilities*, such as inter-VLAN routing, static routing, and DHCP server functionality. SFP+ ports enable high-capacity uplinks of up to 10 Gbps, directly connect to a high-performance storage server or deploy a long-distance uplink to another switch, PoE Switch supports an external DC input interface, RPS interface, as a redundant power feature for backup if the internal PSU fails. Interfaces (24) 10/100/1000 RJ45 Ports (2) 1/10G SFP+ Ethernet Ports Ethernet In-Band Total Non-Blocking Throughput 44 Gbps Switching Capacity 88 Gbps Forwarding Rate 65.472 Mbps Power Method Universal Input USP RPS DC Input 100-240VAC, 50/60 Hz 52VDC, 7.69A; 11.5VDC, 2.61A Power</p>	01

		Supply AC/DC, Internal, 450W Voltage Range 100 to 240VAC Certifications CE, FCC, IC	
06	L-3 Switch	24 Gigabit Ethernet ports with line-rate forwarding performance, 4 fixed 1 Gigabit Ethernet Small Form-Factor Pluggable (SFP) uplinks or 2 fixed 10 Gigabit Ethernet SFP+ uplinks, Device management with web UI, over-the-air access, Command-Line Interface (CLI), Simple Network Management Protocol (SNMP), and RJ-45 or USB console access, Network management, Cisco Network Plug and Play, Layer 3 features with routed access (Open Shortest Path First [OSPF]), static routing, and Routing Information Protocol (RIP), Visibility with Domain Name System as an Authoritative Source (DNS-AS) and Full (Flexible) NetFlow, Security with 802.1X, Serial Port Analyzer (SPAN) and Bridge Protocol Data Unit (BPDU), Reliability with higher Mean Time Between Failures (MTBF)	01
07	Switch	Rack-Mount 23 in. (58.4 cm) EIA: Included, Jumbo Frame Support: 9 KB, Routing Protocol: Static IPv4 routing, Minimum Storage Temperature: -4 F, Depth: 10.1 inches, MTBF: 241,996 hour(s), Cables Included: 1x Serial Cable, Capacity: 4K Active VLANs, Height: 1.7 inches, Maximum Operating Temperature: 104 F, MAC Address Table Size: 16k entries, Localization: Chinese (simplified), English, German, French, Italian, Spanish, Japanese, Width: 17.3 inches, Enclosure Type: Desktop, rack-mountable - 1U, Maximum Storage Temperature: 158 F, Ports: 24 x 10/100 + 2 x combo Gigabit SFP + 2 x 10/100/1000, Device Type: Switch - 24 ports - L3 – managed, Humidity Operating Range: 10-90% (non-condensing), Weight: 8.2 lbs, Minimum Operating Temperature: 32 F, Interfaces: 24 x 10Base-T/100Base-TX - RJ-45 - PoE; 1 x console - 9 pin D-Sub (DB-9) - management; 4 x 10Base-T/100Base-TX/1000Base-T - RJ-45; 2 x SFP (mini-GBIC), Humidity Storage Range: 10-90% (non-condensing), Flash Memory: 16 MB, Voltage Required: AC 120/230 V (50/60 Hz), Performance: Switching capacity: 12.8 Gbps; Forwarding performance (64-byte packet size): 9.52 Mbps, Power Device: Power adapter – external, Power Over Ethernet (PoE): PoE, Status Indicators: Link activity, port transmission speed, system, Ram: 128 MB, Authentication Method: Secure Shell (SSH), RADIUS, TACACS+	02
08	Security Gateway	Dimensions 484 x 44 x 164 mm (19.06 x 1.73 x 6.46") Weight 2.3 kg (5.07 lb) Max. Power Consumption 40W Power Supply Internal AC/DC Power Adapter, 60W (24V, 2.5A) Power Input 110 – 240 VAC LEDs System Data Ports Status Speed/Link/Activity Networking Interfaces Serial Console Port Data Ports (1) RJ45 Serial Port (2) 10/100/1000 RJ45 LAN Ports (2) 1 Gbps RJ45/SFP Combination WAN Ports Layer 3 Forwarding Performance Packet Size: 64 Bytes Packet Size: 512 Bytes or Larger 2,400,000 pps 4 Gbps (Line Rate) Processor Dual-Core 1 GHz, MIPS64 with Hardware Acceleration for Packet Processing System Memory 2 GB DDR3 RAM On-Board Flash Storage 4 GB Certifications CE, FCC, IC Rackmount Yes Operating Temperature -10 to 45° C (14 to 113° F) Operating Humidity 10 to 90% Noncondensing	01
09	Cat-6 UTP Cable	UTP Cat 6. Cable, Conductor Material Bare copper (BC), Composition 1/0.56. Wire gauge 23AWG*4P. Insulation Material HDPE, Min. average thickness 0.2mm, Diameter 1.0±0.05mm, Color (4 Pairs) Orange, white/orange; green, white/green; blue, white/blue; brown, white/brown, Lay of twisted conductors 160mm Jacket, Material PVC (65P), Min. average thickness 0.65mm, Diameter 6.5±0.1mm, Max. DC resistance of single conductor 6.58Ω/100m. Max.	As per Actual

		unbalance rate of line pairs' direct current resistance 2.5%. Min. insulation resistance 5000M Ω ·km	
10	Patch Panel	2U 48 Port Cat 6 Loaded flat patch panel	04
11	Cable Manager	1 U Cable manager for Data Rack, PVC / Metal	32
12	Ethernet Surge Protector	Interface Connections: (2) RJ45 Female Connectors ESD/EMP Protection: Absorbing Transient Current with Response to Surge Voltage from 100V/s to 1kV/us, DC Spark-Over Voltage: 90V @ 100V/s, Maximum Impulse Spark-Over Voltage: 700V @ 1kV/us, Discharge Current: 5kA (maximum) / 0.5kA (normal), Maximum Insulation Resistance: 1G Ω @ 50V, Maximum Capacitance: 1.0pF @ 1MHz, Data Line Protection: RJ45 10/100/1000 Ethernet, IEEE 802.3af PoE Support: Yes, Shock and Vibration Certification: ETSI300-019-1.4 Standard	08
13	SFP to Ethernet Media Convertor	Media support: - 1000Base-T Cat5e or higher UTP/STP RJ45 - Fiber media support depends on SFP module Connectors: - RJ45 port, 1000Base-T - SFP module slot ,Distances: - 100 m / 300 ft. (RJ45 cable) - Fiber distance depends on SFP module, Safety & EMI certificates: FCC Class A, CE, 1000 Mbps link speed indicator for RJ45 port, Link indicator for fiber port, Power External power adapter, 5 VDC, 1.2 A, Power consumption: 5 watts (maximum), Operating temperature: 0 – 50°C (32 – 122°F), Operating humidity: 10 – 80% RH, non-condensing, Storage temperature: -20 – 70°C (-4 – 158°F), Gigabit Ethernet to SFP Media Converter External power adapter	08
14	Rack mounted 08 port Fiber ODF	U Fiber Optic Patch Panel Rack Mount 12 Core Blank ODF With SC Connector Rack Mount ST 12 port, 1U Fiber Optic Terminal box/Fiber Optic Patch Panel Box body is made of high quality cold-rolled steel material, and the surface of the inferior smooth electrostatic praying processing technology Unique 1 ~ 2 into cable mouth and 1~48 core out fine mouth design. Box stack turn the page type structure fusion fiber disc and independent insulated grounding device	01
15	24 channel Amphenol connectors with 3-meter cable	Telco or equivalent, also known as Amphenol cables are cables used for telecom and data applications. This cable uses a Cat5e rated 25 pair cable with a PVC jacket and 90 degree angled 50 pin female to female connector at each end. Save time and labor by eliminating the need to punch down individual conductors with 25 pair telco cables. Features: 5ft, Female to female, 50 pin screw connectors Cat5e rated 25 pair, PVC jacket, 90-degree connectors, Screw down connections	06
16	Cat-6 Tuff cable 24 AWG	Cat -6 Tuff cable 24 AWG	01 (Roll)
17	5 KW Isolation Transformer	Nominal Voltage / Frequency 115/230 VAC 50/60 HZ (Voltage Selected by Input Power Module Fuse Installation, Over Current Protection 2X 3.15A @ 115V and 2X 1.6A at 230V ,VA / Watt Capacity 300 Transformer Type Medical Grade, Low Impedance Toroid- Line Isolation (Pass Through or Step UP or Step Down), Output Voltage Regulation (Line Mode) 5.2%, Output (VA) 3000, Output (Watts) 3000, SURGE / NOISE SUPPRESSION, AC Suppression Joule Rating 240, IEEE587 Cat. A Ring Wave Let Through Reduced to 0.5v Common Mode Noise Suppression Rating 35-65db, ISOLATION, Output Isolation Transformer Toroid with AC output Floating with Respect to Earth Ground.	01

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18	5-M SM Fiber Pig tail	<table border="1"> <tr> <td>Connector</td> <td colspan="3">SC,FC,LC,ST,MU,E2000,MTRJ</td> <td colspan="2">MPO/MTP</td> </tr> <tr> <td>Polishing</td> <td>SM/UPC</td> <td>MM/PC</td> <td>SM/APC</td> <td>SM/PC</td> <td>MM/PC</td> </tr> <tr> <td>Insertion loss(max)</td> <td>≤0.30dB</td> <td>≤0.30dB</td> <td>≤0.30dB</td> <td>≤0.75dB</td> <td>≤0.5dB</td> </tr> <tr> <td>Return Loss(Min)</td> <td>≥50 dB</td> <td>≥35 dB</td> <td>≥60 dB</td> <td>≥40dB</td> <td>≥20dB</td> </tr> <tr> <td>Durability</td> <td colspan="5"><0.20 dB typical change</td> </tr> <tr> <td>Repeatability</td> <td colspan="5">≤0.1dB</td> </tr> <tr> <td>Storage,Operating Temperature [°C]</td> <td colspan="5">-40~+85</td> </tr> </table>	Connector	SC,FC,LC,ST,MU,E2000,MTRJ			MPO/MTP		Polishing	SM/UPC	MM/PC	SM/APC	SM/PC	MM/PC	Insertion loss(max)	≤0.30dB	≤0.30dB	≤0.30dB	≤0.75dB	≤0.5dB	Return Loss(Min)	≥50 dB	≥35 dB	≥60 dB	≥40dB	≥20dB	Durability	<0.20 dB typical change					Repeatability	≤0.1dB					Storage,Operating Temperature [°C]	-40~+85					05
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19	Patch Cord (1m)	Unshielded Twisted Pair 4 Pair, 24AWG Stranded cable Cat. 6, Snagless Patch cord is designed with “Ligule technology” for easy installation, Strain-relief boot design, UTP plug with polycarbonate housing for durability, UTP plug with 50-micron Gold over Nickel contacts, Exceeds the requirement of EIA/TIA 568B.2.1 standards	100																																										
20	Patch Cord (3m)	Unshielded Twisted Pair 4 Pair, 24AWG Stranded cable Cat. 6, Snagless Patch cord is designed with “Ligule technology” for easy installation, Strain-relief boot design, UTP plug with polycarbonate housing for durability, UTP plug with 50-micron Gold over Nickel contacts, Exceeds the requirement of EIA/TIA 568B.2.1 standards	100																																										
21	Server Rack	42- U Universal Rack , Contemporary, sleek appearance, Strong frame structure , Multiple vendor equipment compatibility Full line of accessories & a Family of sizes and styles, Dimensions Width: EIA Standard 19" Rack Rails External Width: 23.6" – 600mm, Height: 78.74" – 2,000mm – Rack Units: 42U Depths: 39.37" & 41.34", Sidewalls, Split rear doors, Baying Kits, toolless Shelves, casters, Bolt Down Kits, Power Strips – vertical or Rackmount, Enclosure Monitoring System Toolless Blanking Panels, Along with Ventilation Fans and PSU / PDU (5 ports)	02																																										
22	3KVA UPS	Input frequency 50/60 Hz +/- 3 Hz (auto sensing) Input voltage range for main operations 160 - 286V Input voltage adjustable range for mains operation 151 - 302V Number of Power Cords 2 Efficiency at Full Load 94.0 % Other Input Voltages 220, 240 Transfer Time 2-4 ms Max Configurable Power (Watts) : 2.7kWatts / 3.0kVA Output Voltage Note: Configurable for 220 : 230 or 240 Efficiency at Full Load: 94.0 % Output Voltage Distortion: Less than 5% at full load Output Frequency (sync to mains): 47 - 53 Hz for 50 Hz nominal, 57 - 63 Hz for 60 Hz nominal Topology : Line Interactive Waveform type: Sine wave	02																																										

Equivalent or Higher

		Transfer Time: 2-4 ms Battery type: Maintenance-free sealed Lead-Acid battery with suspended electrolyte : leakproof Typical recharge time : 3hour(s) Expected Battery Life (years): 3 – 5	
23	VMware vSphere 6.7	VMware vSphere 6.7 standard edition for 2 Processors	01
24	Microsoft Windows Server 2016 Standard Edition	Microsoft Windows Server 2016 Standard Edition	01
25	Microsoft Windows 10 Pro SNGL OLP	Microsoft Windows 10 Pro SNGL OLP	02