Local Network in MOTHER & CHILDEREN HOSPITAL (MC&CH) AYUB TEACHING HOSPITAL ABBOTTABAD.

Note: Provide Cisco Solution

S.NO	Item List	Approximate Quantity
1	**Wireless Controller** WLAN Controller: • 1U form factor and compact design • Extended Application Visibility • support next-generation 802.11ac Wave 2 deployments using existing cabling infrastructure • embedded wireless Bring-Your-Own-Device (BYOD) policy classification • Provide self-healing and self-optimizing wireless network. • Provide proactive protection for Radio Frequency Interference (RFI) • CLI and GUI based management access with quick setup wizards • 4-Gbps or higher throughput • Support of 125+ access points • Support of 3000 clients • 4 x 1 Gigabit Ethernet Ports • Support of 4096 VLANs • 1x service port: 1 Gigabit Ethernet port (RJ-45) • 1x redundancy port: 1 Gigabit Ethernet port (RJ-45) • 1x console port: Serial port (RJ-45) • 1x console port: Serial port (mini-B USB) • 1x USB 3.0 port • License to attach 30 Access Points • 12 MONTH HARDWARE	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
2	**Wireless Access Points:** • 802.11ac Wave 2; 4x4:4SS; Int Ant; C Reg Dom • 4x4 MIMO with four spatial streams, single-user MIMO • 4x4 MIMO with three spatial streams, multiuser MIMO • Maximal Ratio Combining • 802.11ac beam forming (transmit beam forming) • 20-, 40-, and 80-MHz channels • PHY data rates up to 1.7 Gbps (80 MHz in 5 GHz) • Packet aggregation: A-MPDU (Tx/Rx), A-MSDU (Tx/Rx) • 802.11 Dynamic Frequency Selection	Note: Equipment must be brand new and original however Quantity will be calculated as per

	• Cyclic Shift Diversity support • Rogue device detection • Antenna 1: 2.4 GHz, gain 3 dBi, internal omni, horizontal beamwidth 360° • Antenna2: 5 GHz, gain 5 dBi, internal omni, horizontal beamwidth 360° • 1 x 10/100/1000BASE-T autosensing (RJ-45), Power over Ethernet (PoE) • 1 x 10/100/1000BASE-T autosensing (RJ-45), AUX (used for Link Aggregation) • Management console port (RJ-45) • USB 2.0 (enabled via future software) • PoE Injector • Convertible to WLAN Controller • With 1 Year SNTC NBD • Ceiling Grid Clip for Aironet APs - Recessed Mount	requirements..
3	SGE2010 48-Port Gigabit layer 3 Switch • Type: Switch • Connectivity Technology: Wired • Remote Management Protocol: CLI, RMON 1, RMON 2, RMON 3, RMON 9, SNMP 1, SNMP 2c, SNMP 3, SSH, Telnet • Forty-eight 10/100/1000 Ethernet ports • Four mini Gigabit Interface Converter (mini-GBIC) slots (shared with four Ethernet ports) for fiber Gigabit • Ethernet expansion • Dual images for resilient firmware upgrades • 96-Gbps non blocking, store-and-forward switching capacity • Simplified QoS management using 802.1p, differentiated services (DiffServ), or type of service (ToS) traffic • prioritization • Power redundancy when used with the Cisco RPS1000 380W Redundant Power Supply Unit • Fully resilient stacking provides optimized growth with simplified management • ACLs for granular security and QoS implementation • Configuration and monitoring from a standard web browser • Secure remote management of the switch via Secure Shell (SSH) and SSL encryption • 802.1Q-based VLANs enable segmentation of networks for improved performance and security • Private VLAN Edge (PVE) simplifies network isolation of guest connections or autonomous networks • Automatic configuration of VLANs across multiple switches through Generic VLAN Registration Protocol • Static routing; classless interdomain routing (CIDR); 60 static routes; IPv4; forwarding in silicon – wire-speed forwarding of Layer 3 traffic • (GVRP) and Generic Attribute Registration Protocol (GARP) • User/network port-level security via 802.1X authentication and MAC-based filtering	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.

	• Increased bandwidth and added link redundancy with Link Aggregation Control Protocol (LACP) • Enhanced rate-limiting capabilities, including back pressure and multicast, broadcast, and flood control • Port mirroring for noninvasive monitoring of switch traffic • Jumbo frame support up to 10 KB • Simple Network Management Protocol (SNMP) versions 1, 2c, and 3 and Remote Monitoring (RMON) support • Fully rack mountable using included rack-mounting hardware	
4	**WS-C3650-48TS-L, 48 Port Data 4x1G Uplink LAN Base**	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
5	**24 Port Data 4x1G Uplink LAN Base** **Networking** • Type: Switch • Connectivity Technology: Wired • Remote Management Protocol: CLI, RMON 1, RMON 2, RMON 3, RMON 9, SNMP 1, SNMP 2c, SNMP 3, SSH, Telnet • Compliant Standards: • IEEE 802.1ab (LLDP), IEEE 802.1D, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE 802.1w, IEEE 802.1x, IEEE 802.3, IEEE 802.3ab, IEEE 802.3ad (LACP), IEEE 802.3u, IEEE 802.3x, IEEE 802.3z • Status Indicators: Active, Port duplex mode, Port transmission speed, Status, System • Ports Qty: 24 • Features; • Access Control List (ACL) support, ARP support, DHCP snooping, Dynamic ARP Inspection (DAI), Energy Efficient Ethernet, IGMP snooping, Layer 2 switching, Link Aggregation Control Protocol (LACP), MLD snooping, Multiple Spanning Tree Protocol (MSTP) support, Port Aggregation Protocol (PAgP) support, Quality of Service (QoS), RADIUS support, Rapid Per-VLAN Spanning Tree Plus (PVRST+), Rapid Spanning Tree Protocol (RSTP) support, Remote Switch Port Analyzer (RSPAN), Trunking, Uni-Directional Link Detection (UDLD), VLAN support • Routing Protocol: Static IP routing • MAC Address Table Size: 32000 entries	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.

- Stackable: Stackable
- Subcategory: Network hubs and switches
- Manageable: Yes
- Form Factor: Desktop, Rack-mountable
- Jumbo Frame Support: 9198 bytes
- Subtype: Gigabit Ethernet

Environmental Parameters

- Min Operating Temperature: 23 °F
- Max Operating Temperature: 113 °F
- Humidity Range Operating: 5 - 96% (non-condensing)
- Min Storage Temperature: -40 °F
- Max Storage Temperature: 158 °F

Flash Memory

- Installed Size: 2 GB

Interface Provided

- Qty: 4
- Type: Management (mini-USB)
- Connector Type: Type B
- Comments: Management

Miscellaneous

- Rack Mounting Kit: Included
- Compliant Standards: BSMI CNS 13438 Class A, CISPR 22 Class A, CISPR 24, CSA C22.2 No. 60950-1 Second Edition, EN 60950-1 Second Edition, EN 61000-3-2, EN 61000-3-3, EN55022 Class A, EN55024, FCC Part 15 A, GOST, ICES-003 Class A, IEC 60950-1 Second Edition, ISO 7779, KCC, KN22 Class A, KN24, NOM, RoHS, UL 60950-1 Second Edition, VCCI Class A
- Authentication Method: RADIUS, Secure Shell (SSH), TACACS+
- MTBF: 661,800 hours.
- **Support to group different physical switches into a logical unit.**
- **Support for redundant Power supply**
- **12 Month Warranty of Hardware.**

6	**24 Port GE SFP IP Base**	Note:

Networking

Type: Switch
Connectivity Technology: Wired/Wireless
Remote Management Protocol: CLI, RMON 1, RMON 2, SNMP 1, SNMP 2c, SNMP 3, SSH, Telnet
Compliant Standards: IEEE 802.1D, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1s, IEEE 802.1w, IEEE 802.1x, IEEE 802.3ad (LACP), IEEE 802.3x, IEEE 802.3z
Status Indicators: Power

Equipment must be brand new and original

however

Quantity will be calculated as per

Ports Qty: 24
Features:

Access Control List (ACL) support, ARP support, Auto-negotiation, CAPWAP support, StackPower technology, StackWise Technology, Class of Service (CoS), DHCP server, DHCP snooping, DHCP support, DiffServ Code Point (DSCP) support, Dynamic ARP Inspection (DAI), Dynamic Trunking Protocol (DTP) support, Flexible NetFlow (FNF), FTP client, Full duplex mode, Hot Standby RouterProtocol (HSRP) support, Intrusion Detection System (IDS), IP source guard, Link Aggregation Control Protocol (LACP), Management Information Base (MIB), Multiple Spanning Tree Protocol (MSTP) support, Port Aggregation Protocol (PAgP) support, Port Security, Quality of Service (QoS), Rapid Per-VLAN Spanning Tree Plus (PVRST+), Rapid Spanning Tree Protocol (RSTP) support, Remote Switch Port Analyzer (RSPAN), Shaped Round Robin (SRR), Storm Control, Syslog support, Uni-Directional Link Detection (UDLD), Unicast Reverse Path Forwarding (URPF), Virtual Routing and Forwarding (VRF), Weighted Tail Drop (WTD), Wireless Intrusion Prevention System (WIPS)

Routing Protocol: EIGRP, RIP-1, RIP-2, RIPng
MAC Address Table Size: 32000 entries
Stackable: Stackable
Subcategory: Network hubs and switches
Power Over Ethernet (PoE): No
Advanced Switching: Layer 3
Manageable: Yes
Form Factor: Desktop, Rack-mountable
Jumbo Frame Support: 9198 bytes
Subtype: Gigabit Ethernet

Miscellaneous

Compliant Standards
AS/NZS 3548 Class A, AS/NZS CISPR22:2004 Class A, BSMI Class A, CAN/CSA C22.2 No. 60950-1, CCC, CISPR 22 Class A, CISPR 24, CNS 13438(95) Class A, EN 300386, EN 60950-1, EN 60950-1 Second Edition, EN 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-6-1, EN50082-1, EN55022 Class A, EN55024, FCC CFR47 Part 15, FCC Part 15 A, ICES-003 Class A, IEC 60950-1, IEC 60950-1 Second Edition, KCC, KN22 Class A, KN24, NOM, RoHS 5/6, UL 60950-1, UL 60950-1 Second Edition, VCCI Class A
Authentication Method: Kerberos, RADIUS, Secure Shell (SSH), TACACS+
MTBF: 300,760 hours

Environmental Parameters

Min Operating Temperature: 23 °F
Max Operating Temperature: 113 °F
Humidity Range Operating: 10 - 95% (non-condensing)
Min Storage Temperature: -40 °F

requirements.

	Max Storage Temperature: 158 °F Switches: - Support to group different physical switches into a logical unit. - Support for redundant Power supply	
7	1000BASE-SX SFP transceiver module, MMF, 850nm, DOM	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
8	Cat-VI UTP Cable(305 Meter)	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements..
9	Cat-VI I/O	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
10	Faceplate	Note: Equipment must be brand new and original

		however Quantity will be calculated as per requirements.
11	Back Box	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
12	Patch Panel 1 Meter	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements..
13	27U Rack	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
14	42 U Cabinet for Data Center	Note: Equipment must be brand new

		and original
		however
		Quantity will be calculated as per requirements.
15	OFC 6 Core	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
16	OFDF 96 Ports	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
17	OFDF 6 Ports	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
18	Pigtail SC	Note: Equipment must

		be brand new and original however Quantity will be calculated as per requirements.
19	SC-LC Patch Cord (1 Meter)	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
20	Adamjee Duct 80 x 60 (2-Meter Length)	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements..
21	Adamjee Duct 60 x 60 (3-Meter Length)	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
22	Adamjee Duct 25 x 25 (3-Meter Length)	Note:

		Equipment must be brand new and original however Quantity will be calculated as per requirements.
23	Power Cable for AP (Cabe Roll)	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.
24	Installation & Commissioning	Note: Equipment must be brand new and original however Quantity will be calculated as per requirements.