

1 Network Access PoE Switch - 48 Port – Product Specifications – Qty - 17

S. No.	General Specifications
1.1	General Features :
1.1.1	Switch should be 1U and rack mountable in standard 19" rack.
1.1.2	Switch should support (from day 1) internal field replaceable secondary add on power supply
1.1.3	Switch should have minimum 2 GB RAM and 4 GB Flash.
1.1.4	Switch should have dedicated slot/Ports for modular stacking, in addition to asked uplink ports. Should support for minimum 80 Gbps of stacking throughput with 8 switch in single stack. (All Cables and Slots for stacking will be Populated from Day 1).
1.2	Performance :
1.2.1	Switch shall have minimum 340 Gbps of switching fabric and 252 Mpps of forwarding rate.
1.2.2	Switch shall have minimum 16K MAC Addresses and 4000 VLAN IDs.
1.2.3	Should support minimum 11K IPv4 routes or more
1.2.4	Switch shall have 1K or more multicast routes.
1.2.5	Switch should support atleast 16K flow entries
1.2.6	Switch should support 128 or more STP Instances.
1.2.7	Switch should have 6MB or more packet buffer.
1.3	Functionality :
1.3.1	Switch should support IEEE Standards of Ethernet: IEEE 802.1D, 802.1s, 802.1w, 802.1x, 802.3ad, 802.3x, 802.1p, 802.1Q, 802.3, 802.3u, 802.3ab, 802.3z.
1.3.2	Switch must have functionality like static routing, RIP, PIM, OSPF(1000 routes), VRRP, PBR and QoS features from Day1
1.3.3	Switch should support network segmentation that overcomes the limitation of VLANs using VXLAN and VRFs.
1.3.4	Switch shall have 802.1p class of service, marking, classification, policing and shaping and eight egress queues.
1.3.5	Switch should support management features like SSHv2, SNMPv2c, SNMPv3, NTP, RADIUS and TACACS+ .
1.3.6	Switch should support IPv6 Binding Integrity Guard, IPv6 Snooping, IPv6 RA Guard, IPv6 DHCP Guard, IPv6 Neighbor Discovery Inspection and IPv6 Source Guard.
1.3.7	Switch should support 802.1x authentication and accounting, IPv4 and IPv6 ACLs and Dynamic VLAN assignment and MACSec-128 on hardware for all ports.
1.3.8	Switch must have the capabilities to enable automatic configuration of switch ports as devices connect to the switch for the device type.
1.4	Interface
1.4.1	Switch shall have 40 nos. 10/100/1000 Base-T ports and additional 8 nos port port supporting 100MB/1G/2.5G/5G/10G Additional 2x1/10/25G fixed uplinks ports.

1.4.2	All 48 port should support PoE (802.3af) and PoE+ (802.3at) with a total PoE power budget of 740W (with built in power supply) and scalable to 1440W PoE power, with Additional Power Supply.
1.5	Compatibility with the existing installation of Cisco Stacked switches:
1.5.1	The offered switches are required to be added as master to the existing switch stacks of C9200L-48P-4X-E switches already installed at various locations. Hence; the offered switches are to be stack compatible with the aforesaid model of Cisco switches.
1.5.2	The augmented stack of switches post inclusion of the proposed switch is to accessible over single management IP
1.6	Certification:
1.6.1	Switch shall conform to UL 60950 or IEC 60950 or CSA 60950 or EN 60950 Standards for Safety requirements of Information Technology Equipment.
1.6.2	Switch shall conform to EN 55022 Class A/B or CISPR22 Class A/B or CE Class A/B or FCC Class A/B Standards for EMC (Electro Magnetic Compatibility) requirements.
1.6.3	Switch / Switch's Operating System should be tested for EAL 2/NDPP or above under Common Criteria Certification.

2. Wireless Access Point - Product Specifications – Qty - 75

Sr. No.	Specification
1	Access Point shall support 2x2 MIMO on both radio interfaces
2	Access Point shall be able to powered up using PoE (.af)
3	Access Point shall support assurance, packet capture, RF sensing capabilities
4	Access Point shall support application visibility and control
5	Access Point shall support encrypted traffic visibility
6	Access Point should have Bluetooth5 radio to support use cases of location, asset tracking and analytics.
7	Access Point shall ship with metal-based mounting bracket for durability and reliability
8	Access Point shall support Console port that uses Standard Port (RJ-45) type connection
9	Access Point should have 1x 100/1000/2500 Base-T uplink port. 3x 10/100/1000 Base-T (Ethernet) Downlink Interface (of which one port supports 10.5W PSE Power Budget to support PoE device over remote LAN).
10	Must have atleast 3 dBi Antenna gain on each radios
11	Must Support data rate upto 1.4 gbps.
12	Must support minimum of 20 dbm of transmit power in both 2.4Ghz and 5Ghz radios. And should follow the local regulatory Norms.
13	Must support AP enforced load-balance between 2.4Ghz and 5Ghz band.
14	Must incorporate radio resource management for power, channel and performance optimization

15	Must have -97 dB or better Receiver Sensitivity.
16	Must support Proactive Key Caching and/or other methods for Fast Secure Roaming.
17	Must support Management Frame Protection.
18	Should support locally-significant certificates on the APs using a Public Key Infrastructure (PKI).
19	Must support the ability to serve clients and monitor the RF environment concurrently.
20	Same model AP that serves clients must be able to be dedicated to monitoring the RF environment.
21	Must support 16 WLANs per AP for SSID deployment flexibility.
22	Access Point Must continue serving clients when link to controller is down. It should also have option to authenticate user through Radius server directly from Access Point during link unavailability to controller.
23	Must support telnet and/or SSH login to APs directly for troubleshooting flexibility.
24	802.11e and WMM
25	Must support QoS and Video Call Admission Control capabilities.
26	Need to mandatorily work with existing controller (Cisco 5520) and no need to opt for add on wireless AP licenses. (Sufficient number of licenses are already available with provisioning the devices)

3. 25G SM Transceiver for (mGig Access to Distribution) - Product Specifications – Qty - 17

Sr. No.	Minimum Specifications
1	Speed 25Gbps
2	Singlemode
3	Make: same as switch OEM / Fully compatible with existing installed Cisco switch models C9200L-48PXG-2Y, C9500-48Y4C-A, C9300X-24Y-A & C9500-24Y4C
4	Distance: 10KM

4. C9200L-STACK-KIT modules with 1 Mtr stack cable for preowned Cisco switches- Product Specifications – Qty – 24 Sets

Sr. No.	Specification
1	OEM Part No: C9200L-STACK-KIT Stack kit for C9200L SKUs only: Two data stack adapters and one data stack cable.
2	Stack Cable Length (Part No): STACK-T4-1M, 100CM Stacking Cable
3	Switch Compatibility: Cisco C9200L-48P-4X (Preowned).

**5. CAT6 S/FTP Patch cord 2.0 Mtrs with factory molded RJ 45 Connectors -
Product Specifications – Qty – 1000**

Sr. No.	Specification
1	Category 6 patch cord shall have valid verified certificate in channel from ETL /3P /GHMT /Delta/Intertek /UL as per CAT 6 standards ANSI//TIA/EIA-568 C.2 latest or ISO/IEC:11801 latest
2	Cable jacket material: Low Smoke zero halogen (LSZH)
3	Patch cord type: CAT6 S/FTP; Patch cord Length: 2.0 Mtrs
4	Modular plug: RJ 45 molded, factory fitted

**6. Cisco CAB-TA-IN India AC Type A Power Cable for preowned Cisco switches
Product Specifications – Qty – 12**

Sr. No.	Specification
1	OEM Part No: Cisco CAB-TA-IN India AC Type A Power Cable for preowned Cisco switches
2	Switch Compatibility: Cisco C9200L-48P-4X (Preowned)