

Specifications	Compliance Yes / No	Remarks
Architecture		
Shall be modular chassis based switch, 19" Rack Mountable		
Shall have minimum six slots each of which is available for hot-swappable network port modules		
The switch shall be based on Programmable-ASIC		
The switch shall have distributed switching architecture on each interface module (any additional hardware shall be proposed to achieve distributed switching)		
The switch shall support 288 autosensing 10/100/1000 ports or 288 SFPs or 96 SFP+ ports or 96 Smart Rate Multi-Gigabit or 24 40GbE ports, or a combination		
The switch shall support SFP+ (Fiber) and Copper (10G-Base T, UTP) 10G capability to allow customer to choose based on the backbone cabling design		
The Switch should support Smart Rate Multi-Gigabit ports		
The switch shall support Non-PoE, PoE and PoE+ Gigabit Line cards		
1 RJ-45 (serial RS-232C) console port		
Packet buffer size of minimum 10 MB per module to support video/streaming traffic		
Shall have routing/switching capacity of 1920 Gbps		
Shall have up to 1147.2 million pps switching throughput		
Shall provide Gigabit (1000 Mb) Latency of < 2.8 μ s and 10 Gbps Latency of < 1.8 μ s		
The Switch should support Redundant management module		
Software-defined networking		
The Switch should support OpenFlow 1.0 and 1.3 specifications to enable SDN by allowing separation of the data (packet forwarding) and control (routing decision) paths		
The Switch should create custom OpenFlow pipelines (processing stages) on-demand to support new SDN applications		
Policy Manager support		
The Switch should support unified wired and wireless policies using Policy Manager		
The Switch should support HTTP redirect function		
The Switch should automatically configures switch for rogue AP detection, add VLAN, and set PoE priority		
Quality of Service (QoS)		
The Switch should classify traffic using multiple match criteria based on Layer 2, 3, and 4 information; applies QoS policies such as setting priority level and rate limit to selected traffic on a per-port or per-VLAN basis		
Traffic prioritization		
The Switch should support real-time traffic classification into eight priority levels mapped to eight queues		
Bandwidth shaping		
The switch should support port-based rate limiting to provides per-port ingress-/egress-enforced increased bandwidth		
The switch should support classifier-based rate limiting		
The switch should provide per-port, per-queue egress-based reduced bandwidth		

The switch should support IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ		
Management		
The switch should mirror selected ingress/egress traffic based on ACL, port, MAC address, or VLAN to a local or remote Switch located anywhere on the network		
The switch should support RMON, XRMON, and sFlow v5		
The switch should support IEEE 802.1AB Link Layer Discovery Protocol (LLDP)		
The switch should leverage RADIUS to link a custom list of CLI commands to an individual network administrator's login; an audit trail documents activity		
The switch should support Friendly port names		
The switch should support provide independent primary and secondary operating system files for backup while upgrading		
The switch should support Multiple configuration files		
The switch should support Unidirectional Link Detection (UDLD)/DLDP		
The switch should use settings in DHCP to enable Zero-Touch ProVisioning with Network Management tool		
Connectivity		
The switch should support IEEE 802.3az Energy Efficient Ethernet		
The switch should support IEEE 802.3af and IEEE 802.3at Power over Ethernet (PoE)		
The switch should support Jumbo frames on Gigabit Ethernet and 10-Gigabit Ethernet ports		
The switch should provide automatic adjustments for straight-through or crossover cables on all 10/100 and 10/100/1000 ports		
IPv6 Feature		
The switch should support IPv6 host		
The switch should support Dual stack (IPv4 and IPv6)		
The switch should support MLD snooping		
The switch should support IPv6 ACL/QoS		
supports ACL and QoS for IPv6 traffic		
The switch should support support static, RIPng, OSPFv3 routing protocols from day one		
The switch should support encapsulation of IPv6 traffic in IPv4 packets from day one		
The switch should have RA guard, DHCPv6 protection, dynamic IPv6 lockdown, and ND snooping		
Resiliency and high availability		
The Switch should creates one virtual resilient switch from two switches and attached the network devices using standard LACP for automatic load balancing and high availability to simplify network operation by reduce the need for complex protocols like Spanning Tree Protocol (STP), Equal-Cost Multipath (ECMP), and VRRP		
The switch should support Virtual Router Redundancy Protocol (VRRP) from day one		
The switch should support Nonstop switching		
The switch should support Nonstop routing		
The switch should support Redundant management module and power		
The switch should support IEEE 802.1s Multiple Spanning Tree Protocol and 802.1w Rapid Spanning Tree Protocol		

The switch should support IEEE 802.3ad Link Aggregation Control Protocol (LACP) and port trunking		
The switch should support up to 144 trunks, each with up to eight links (ports) per trunk		
The switch should enable loop-free and redundant network topology without using Spanning Tree Protocol; allows a server or switch to connect to two switches using one logical trunk for redundancy and load sharing		
The switch should provide uninterrupted power and allows hot-swapping of the redundant power supplies when installed		
The switch should support Hot-swappable modules		
The switch should support Uplink Failure Detection		
The switch should support easy-to-configure link redundancy of active and standby links		
Layer 2 switching		
MAC address table size of 64000 entries		
The switch should support IEEE 802.1v protocol VLANs		
The switch should support IEEE 802.1ad Q-in-Q		
The switch should support MAC-based VLAN		
The switch should support Rapid Per-VLAN Spanning Tree (RPVST+)		
The switch should support dynamically load balancing across multiple active redundant links to increase available aggregate bandwidth to allow concurrent Layer 3 routing		
The switch should support GVRP and MVRP		
allows automatic learning and dynamic assignment of VLANs		
The switch should support VxLAN encapsulation (tunneling) protocol for overlay network that enables a more scalable virtual network deployment		
The switch should support VLAN and tagging		
The switch should support IEEE 802.1Q standard and 4096 VLANs simultaneously		
Layer 3 services		
The switch should support User Datagram Protocol (UDP) helper function		
The switch should support Loopback interface address		
The switch should support Route maps		
The switch should support DHCP server		
The switch should support Bidirectional Forwarding Detection (BFD)		
Layer 3 routing		
The switch should support 10000 (IPv4), 5000 (IPv6) routing entries		
The switch should support Static IP routing for both IPv4 and IPv6 networks		
The switch should support OSPFv2 for IPv4 routing and OSPFv3 for IPv6 routing from day one		
The switch should support Policy-based routing from day one		
The switch should support Border Gateway Protocol (BGP) from day one		
The switch should support RIPv1, RIPv2, and RIPv6 routing from day one		
Security		
The switch should provide filtering based on the IP field, source/destination IP address/subnet, and source/destination TCP/UDP port number on per-VLAN or per-port basis		
The switch should support IEEE 802.1X users per port		

The switch should support Web-based authentication from a Web browser for clients that do not support IEEE 802.1X supplicant		
The switch should support MAC-based authentication		
The switch should support Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port		
The switch should detect traffic patterns typical of worm-type viruses and either throttles or entirely prevents the virus from spreading across the routed VLANs or bridged interfaces without requiring external appliances		
The switch should support DHCP protection to blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks		
The switch should support secure encryption of all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3		
The switch should support CPU protection		
The switch should support ICMP throttling to defeat ICMP denial-of-service attacks by enabling any switch port to automatically throttle ICMP traffic		
The switch should support STP BPDU port protection		
The switch should support Dynamic IP lockdown		
The switch should support Dynamic ARP protection		
The switch should support STP Root Guard		
The switch should support Detection of malicious attacks		
The switch should support Port security to allow access only to specified MAC addresses, which can be learned or specified by the administrator		
The switch should support MAC address lockout		
The switch should support Source-port filtering		
The switch should support RADIUS/TACACS+		
The switch should support Secure Shell		
The switch should support Secure Sockets Layer (SSL)		
The switch should support Secure FTP		
The switch should support secure management interfaces such as SNMP, telnet, SSH, SSL, Web, and USB at the desired level		
Switch management logon security		
helps secure switch CLI logon by optionally requiring either RADIUS or TACACS+ authentication		
The switch should support customized security policy when users log in to the switch		
The switch should support IEEE 802.1AE MACsec		
The switch should support Private VLAN		
Convergence		
The switch should support IP multicast routing		
The switch should support IP multicast snooping (data-driven IGMP)		
The switch should support LLDP-MED (Media Endpoint Discovery)		
PoE allocations		
The switch should support multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user specified) to allocate PoE power for more efficient energy savings		
The switch should support Auto VLAN configuration for voice		
The switch should support Local MAC Authentication		
Environmental Features		

Shall support IEEE 802.3az Energy-efficient Ethernet (EEE) to reduce power consumption		
Operating temperature of 0°C to 45°C		
Safety and Emission standards including EN 60950; IEC 60950; FCC part 15 Class A		
Warranty and Support		
The below Warranty shall be offered directly from the switch OEM.		
Minimum of 5 years warranty with advance replacement and next-business-day delivery		
Software upgrades/updates shall be included as part of the warranty		
MAF		
Vendor should provide MAF letter from OEM		