

SPECIAL EDUCATION DISTRICT OF LAKE COUNTY

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ADDENDUM

WIRELESS ACCESS POINTS, SWITCHES, AND WIRELESS CLOUD CONTROLLER

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This addendum provides prospective bidders with additional minimum specifications that The Special Education District of Lake county will consider for the purchase of wireless access points, wireless cloud controller and licensing, and switches meeting the following specifications

Wireless Access Points (234 units) and Cloud Controller

- Must be cloud managed wireless access points.
- Wireless access points and cloud controller must be from the same manufacturer.
- 2.4 GHz 802.11b/g/n/ax client access radio
- 5 GHz 802.11a/n/ac/ax client access radio
- 2.4 GHz and 5 GHz dual-band WIDS/WIPS, spectrum analysis, and location analytics radio
- 2.4 GHz Bluetooth Low Energy (BLE) radio with beacon and scanning support
- Concurrent operation of all four radios
- Supported frequency bands (country-specific restrictions apply):

2.401 - 2.484 GHz

5.150 - 5.250 GHz (UNII-1)

5.250 - 5.350 GHz (UNII-2A)

5.490 - 5.730 GHz (UNII-2C)

5.735 -5.825 GHz (UNII-3)

- 802.11ax, 802.11ac Wave 2 and 802.11n Capabilities
- DL-OFDMA, UL-OFDMA, TWT support, BSS coloring
- 4 x 4 multiple input, multiple output (MIMO) with four spatial streams
- SU-MIMO, UL MU-MIMO, and DL MU-MIMO support
- Maximal ratio combining (MRC) & beamforming
- 20 and 40 MHz channels (802.11n); 20, 40, and 80 MHz channels (802.11ac Wave 2); 20, 40 and 80 MHz channels (802.11ax)
- Up to 1024-QAM on both 2.4 GHz and 5 GHz bands
- Packet aggregation
- Integrated layer 7 firewall with mobile device policy management
- Real-time WIDS/WIPS with alerting and automatic rogue AP containment with Air Marshal
- Flexible guest access with device isolation
- VLAN tagging (802.1q) and tunneling with IPsec VPN
- PCI compliance reporting
- WEP, WPA, WPA2-PSK, WPA2-Enterprise with 802.1X, WPA3 - Personal, WPA3 - Enterprise, WPA3 - Enhanced Open (OWE)
- EAP-TLS, EAP-TTLS, EAP-MSCHAPv2, EAP-SIM
- TKIP and AES encryption
- Enterprise mobility management (EMM) and Mobile device management (MDM) integration
- ISE integration for guest access and BYOD posturing
- Cloud controller provides total visibility into a network's users, their devices, and their applications.
- Allows creation of access control and app usage policies for different school locations.

Switches

48 port access switches (17 units)

- 48 port Full PoE+
- IEEE 802.3at PoE+ (up to 30W per port)
- Perpetual - maintains the PoE+ power during a switch reload.
- Modular uplink options
- Redundant power supply

- Network module need support 4x 1G/10G network module
- Support stacking 160 Gbps
- Layer 2, Routed Access (RIP, EIGRP Stub, OSPF — 1000 routes), PBR, PIM Stub Multicast (1000 routes), vlans, PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X, MACsec-128, CoPP, SXP,
- IP SLA Responder, SSO
- NETCONF, RESTCONF, YANG, PnP Agent, PnP
- Model-driven telemetry, sampled NetFlow, SPAN, RSPAN

48 port core switch (2 units)

- 48 port UPOE, 36 ports 100M/1G/2.5G + 12 ports Multigigabit (10G/5G/2.5G/1G/100M)
 - Modular Uplinks 8x 10G/1G Network Module
 - Redundant power supply
 - Support stacking
 - Advanced IP unicast routing protocols (including Full [OSPF], Full Enhanced Interior Gateway Routing Protocol [EIGRP], Border Gateway Protocol Version 4 [BGPv4], and Intermediate System-to-Intermediate System Version 4 [IS-ISv4]) are supported for load balancing and for constructing scalable LANs. IPv6 routing (using OSPFv3 and BGPv6) is supported in hardware for maximum performance.
 - Protocol-Independent Multicast (PIM) for IP multicast routing is supported, including PIM Sparse Mode (PIM SM), and Source-Specific Multicast (SSM).
- vlans, PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X
NetFlow, SPAN, RSPAN, IP SLA

24 Port Core Switches (2 units)

- 24 port Multigigabit UPOE
 - Modular Uplinks 8x 10G/1G Network Module
 - redundant power supply
 - Support stacking
 - Advanced IP unicast routing protocols (including Full [OSPF], Full Enhanced Interior Gateway Routing Protocol [EIGRP], Border Gateway Protocol Version 4 [BGPv4], and Intermediate System-to-Intermediate System Version 4 [IS-ISv4]) are supported for load balancing and for constructing scalable LANs. IPv6 routing (using OSPFv3 and BGPv6) is supported in hardware for maximum performance.
 - Protocol-Independent Multicast (PIM) for IP multicast routing is supported, including PIM Sparse Mode (PIM SM), and Source-Specific Multicast (SSM).
- vlans, PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X
NetFlow, SPAN, RSPAN, IP SLA

