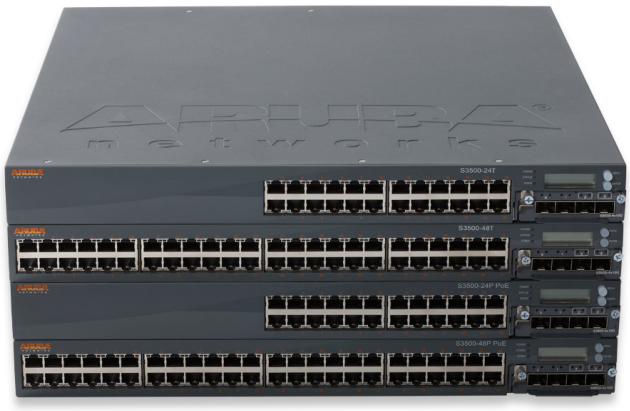
ARUBA S3500 MOBILITY ACCESS SWITCH

Brings User Role-based Access to Wired Networks



The Aruba Networks™ S3500 Mobility Access Switch is a new class of product that brings user role-based access to wired networks. The S3500 is an integral part of the Aruba Mobile Virtual Enterprise (MOVE) architecture, which delivers secure virtualized access services to users, independent of their location, access method, device or application.

Designed for network access deployments in building wiring closets, the S3500 is available in four models with 24 or 48 10/100/1000BASE-T ports and an optional uplink module. Power-over-Ethernet (PoE) models are available supporting up to 30 watts per port based on the IEEE 802.3af (PoE) and 802.3at (PoE+) standards.

The S3500 provides connectivity to wired Ethernet devices such as virtual desktops, IP phones, videophones, classroom peripherals, medical devices, point-of-sale devices and security cameras as well as any 802.11n wireless access point (AP).

FLEXIBLE WIRED ACCESS DEPLOYMENTS

What makes the S3500 unique is its ability to easily provision role-based access for wired users. Any port may be configured to tunnel traffic to an Aruba Mobility Controller, which manages network access and policy enforcement via an ICSA certified firewall. When tunneling traffic to a Mobility Controller, the S3500 operates as a wired AP, identical to Aruba 802.11n wireless APs.

As a wired AP, users and devices are authenticated and assigned a role by the Mobility Controller. A single role is defined based on user, device and application and is enforced by Layer 2 through 7 policies in the Mobility Controller whether the user is connected to the network via a wireless 802.11n AP or a port on the S3500.

As a result, security policies are consistently applied to users and devices whether they use a wired port in one building, move to another wired location or access the network through an Aruba wireless LAN (WLAN) AP. The result is control and visibility of all users and devices in the access network as well as a reduction in time spent configuring user additions and changes.

The S3500 also supports Layer 2 and Layer 3* protocols, and ports can be configured for local forwarding. Access control lists (ACLs) enable policy enforcement of bridged and routed traffic on the S3500.

Local forwarding as well as tunneled traffic may be configured on a port-by-port or per-user* basis. Depending on requirements, some traffic may be sent to the controller for role-based policy enforcement, while other traffic is bridged and enforced locally on the S3500.

The S3500 may also be configured as a controller* to manage wireless AP tunnel termination, user authentication and policy enforcement. Configurations may be pushed to S3500 local controllers by an Aruba master controller in a data center. Optionally, the S3500 may act as the master controller for small office deployments.

In addition to network access security, the S3500 supports data encryption via IEEE 802.1AE Media Access Control Security (MACsec).* MACsec provides connectionless data confidentiality between MACsec-enabled devices, such as between the S3500 and Aruba AP-130 series 802.11n wireless APs.

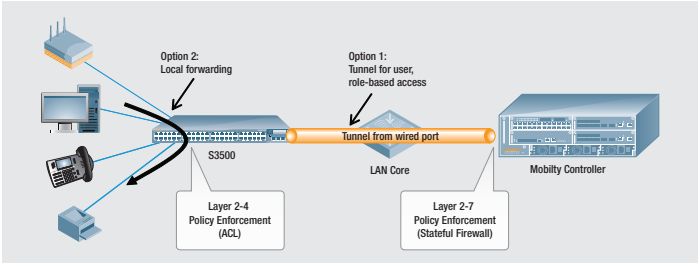


Figure 1: Flexible Wired Access

ARUBASTACK™ EXTENDS BEYOND THE WIRING CLOSET

With ArubaStack, the S3500 opens up new opportunities for network access designs. ArubaStack allows up to eight S3500s to be interconnected and managed as one logical device with a single IP address and single configuration file. Each S3500 supports an optional four-port 10 Gigabit Ethernet uplink module to enable stacking.

*Roadmap item

In a typical configuration, two ports on the uplink module are used for the ArubaStack, creating a stack with 40 Gbps bandwidth. The remaining two ports of each module can be used for connection to the LAN core. The S3500 uplink module supports a variety of 1 Gbps or 10 Gbps optics and the uplink module can be used to connect S3500s across wiring closets and buildings separated by several kilometers.

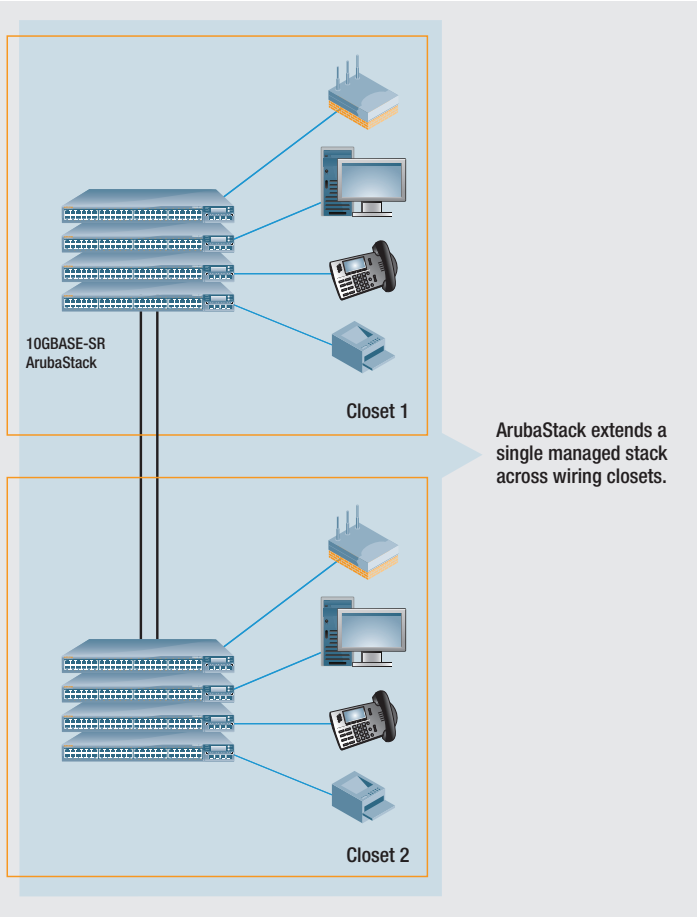


Figure 2: ArubaStack Across Wiring Closets

By interconnecting multiple wiring closets into a single ArubaStack, the S3500 reduces uplinks and expensive routed ports in the LAN core, simplifies LAN topologies, and reduces capital and operating costs by up to 30% over legacy wiring closet designs.

For maximum availability, the S3500 includes redundant, hot-swappable power supplies, a multi-blower fan tray and field-replaceable uplink modules.

FREE IT STAFF FROM TEDIOUS NETWORK CONFIGURATION

Unlike legacy switches, the S3500 supports zero-touch configurations and upgrades for greater ease and efficiency. Once connected to the network, the S3500 broadcasts to the central Mobility Controller, which then sends configuration information to the S3500.

Configuration profiles and groups on the Mobility Controller simplify the configuration of all networked S3500s in a manner similar to Aruba wireless APs. Automated downloads to each S3500 ensure fast and simple deployment with no manual configuration. Subsequent configuration changes and upgrades are performed once within the Mobility Controller and are automatically pushed to each S3500.

Additionally, when configured as a wired AP, the S3500 frees network administrators from the need to configure virtual LANs (VLANs), ACLs and quality-of-service (QoS) policies at each device in the network access layer, significantly reducing the cost and complexity of administering user additions, moves and changes. No special VLANs are required at the access layer as VLAN trunks are configured on the Mobility Controller, and traffic is routed to the correct VLAN in the core. Likewise, security and QoS are enforced at the Mobility Controller employing user role-based policies.

The Aruba S3500 can be deployed in any wiring closet to deliver wired access without the hassle of managing, securing and provisioning separate wired and wireless infrastructures. The result is a secure, user role-based network with centralized management, control and visibility over the entire access infrastructure – wired and wireless.

PHYSICAL SPECIFICATIONS

- 24 10/100/1000BASE-T RJ-45
- 48 10/100/1000BASE-T RJ-45
- Auto MDI/MDIX support
- LCD display
- Console port (RS-232)
- 10/100/1000BASE-T RJ-45 management port
- USB interface for image and config file storage
- Performance:
  - S3500-24P/T: 128Gbps
  - S3500-48P/T: 176Gbps

UPLINK MODULE (OPTIONAL)

- Four 1000BASE-X/10GBASE-X SFP/SFP+ (optics not included)

UPLINK PLUGGABLE TRANSCEIVERS

- 10GBASE-LR 1310-nm SFP+, LC connector
- 10GBASE-SR 850-nm SFP+, LC connector
- 1000BASE-LX SFP, LC connector
- 1000BASE-SX SFP, LC connector
- 1000BASE-T SFP, RJ-45

POWER OPTIONS

- Dual internal, load-sharing hot-swappable redundant power supplies
- Autosensing 100-240 VAC, 600-watt or 1050-watt (for power-over-Ethernet models)
- Autosensing 100-240 VAC, 350-watt (for non-PoE models)
- PoE Budget:
  - 600 watt single: 400W
  - 600 watt redundant: 400W
  - 600 watts load-sharing: 660W
  - 1050 watt single: 850W
  - 1050 watt redundant: 850W
  - 1050 watt load-sharing:1415 watts
- IEEE 802.3af: Power over Ethernet (15.4 watts)
- IEEE 802.3at: Power over Ethernet Plus (30 watts)

DIMENSIONS

- (H) 4.4 cm x (W) 44.5 cm x (D) 44.5 cm (1.75" x 17.5" x 17.5")
- Weight:
  - S3500-24T: 15.4 lbs (7.0 kg)
  - S3500-24P: 16.8 lbs (7.6 kg)
  - S3500-48T: 15.9 lbs (7.2 kg)
  - S3500-48P: 17.5 lbs (8.0 kg)

ENVIRONMENTAL

- Operating temperature: 0º C to 45º C
- Storage temperature: -40º C to 70º C
- Operating humidity: 5% to 95% non-condensing
- Storage humidity: 5% to 95%, non-condensing
- Operating altitude: 10,000 feet
- Acoustic noise: 48 dB with AC power supply

LAYER 2 AND LAYER 3 FEATURES

- MAC addresses per system: 12,000
- Jumbo frames: 9,216 Bytes
- Number of VLANs: 4,094
- Port-and MAC-based VLAN
- IEEE 802.1AB: Link-layer discovery protocol (LLDP)
- LLDP-MED with voice-over-IP integration
- Voice VLANs
- IEEE 802.1D: Spanning tree protocol (STP)
- IEEE 802.1w: Rapid reconfiguration of spanning tree protocol (RSTP)
- IEEE 802.1s: Multiple instances of spanning tree protocol (MSTP)
- Maximum number of supported instances: 64
- Spanning tree root guard, loop guard
- IEEE 802.1Q: VLAN tagging
- IEEE 802.1p: Class of service (CoS) prioritization
- IEEE 802.3ad: Link-aggregation control protocol (LACP)
- Number of link aggregation groups: Eight
- Number of ports per aggregation group: Eight
- Hot Standby Link (HSL): Link failover without STP
- Auto-negotiation
- IEEE 802.3: 10BASE-T
- IEEE 802.3u: 100BASE-T
- IEEE 802.3ab: 1000BASE-T
- IEEE 802.3z: 1000BASE-X
- IEEE 802.3ae: 10 Gigabit Ethernet
- IPv6 forwarding and routing (roadmap)

SECURITY

- IEEE 802.1X authentication for port-based network access control
- MAC authentication
- MAC limiting
- Local proxy ARP
- IEEE 802.1AE: MACsec capable
- Storm control
- IPv6 security (roadmap)

MULTICAST

- IGMP v1, v2
- IGMP snooping

QUALITY OF SERIVCE (QoS)

- ACL-based QoS classification applicable to users, VLANs and ports
- 802.1P: Class-of-service (CoS) prioritization
- Trust 802.1p/DSCP/IP precedence
- Strict priority queuing/low-latency queuing (LLQ) – egress
- Eight queues per port

MANAGEMENT

- AirWave management and monitoring
- Out-of-band console and Ethernet ports management: RS-232 serial port and 10/100/1000BASE-T port
- LCD management
- SNMP v1, v2c, v3
- Network time protocol (NTP)
- DHCP client and DHCP proxy
- RADIUS
- TACACS+
- SSH2
- HTTP/HTTPs
- IPv6 Management (roadmap)

WARRANTY AND SUPPORT

- Limited lifetime warranty on hardware
- Five-year warranty on power supply and fan tray

SAFETY CERTIFICATIONS

- UL-UL60950-1 (second edition)
- C-UL to CAN/CSA 22.2 No.60950-1 (second edition)
- TUV/GS to EN 60950-1, Amendment A1-A4, A11
- CB-IEC60950-1, all country deviations

ELECTROMAGNETIC COMPATIBILITY CERTIFICATIONS

- FCC 47CFR Part 15, Class A
- EN 55022 Class A
- ICES-003 Class A
- VCCI Class A
- AS/NZS CISPR 22 Class A
- CISPR 22 Class A
- EN 55024

ENVIRONMENTAL CERTIFICATIONS

- Reduction of Hazardous Substances 5 (RoHS-5)

Ordering Information	
Part Number	**Description**
S3500-24T	S3500-24T, 24 10/100/1000BASE-T, one 350-watt AC power supply
S3500-24P	S3500-24P, 24 10/100/1000BASE-T PoE, one 600-watt AC power supply, controller capable; unrestricted regulatory.
S3500-24P-US	S3500-24P, 24 10/100/1000BASE-T PoE, one 600-watt AC power supply, controller capable; restricted regulatory – United States
S3500-24P-IL	S3500-24P, 24 10/100/1000BASE-T PoE, one 600-watt AC power supply, controller capable; restricted regulatory – Israel (IL)
S3500-48PF	Aruba S3500-48P, 48x 10/100/1000Base-T PoE,1x 1050W AC PS, Controller capable; Unrestricted Regulatory. These products should be considered as 'Rest of World' products and MUST NOT be used for deployments in the United States or Israel
S3500-48PF-US	Aruba S3500-48P, 48x 10/100/1000Base-T PoE,1x 1050W AC PS, Controller capable; Restricted Regulatory - US
S3500-48PF-IL	Aruba S3500-48P, 48x 10/100/1000Base-T PoE,1x 1050W AC PS, Controller capable; Restricted Regulatory - Israel (IL)
S3500-48T	S3500-48T, 48 10/100/1000BASE-T, one 350-watt AC power supply
S3500-48P	S3500-48P, 48 10/100/1000BASE-T PoE, one 600-watt AC power supply, controller capable; unrestricted regulatory.
S3500-48P-US	S3500-48P, 48 10/100/1000BASE-T PoE, one 600-watt AC power supply, controller capable; restricted regulatory – United States
S3500-48P-IL	S3500-48P, 48 10/100/1000BASE-T PoE, one 600-watt AC power supply, controller capable; restricted regulatory – Israel (IL)
S3500-4x10G	S3500 uplink and ArubaStack interconnect module, four 10 Gigabit Ethernet SFP+, ports also used for ArubaStack (optics not included)
PSU-350-AC	Field-replaceable power supply – 350-watt
PSU-600-AC	Field-replaceable power supply – 600-watt
PSU-1050-AC	Field Replaceable Power Supply - 1050 Watt
SPR-FAN-14	Field-replaceable fan tray for S3500

ARUBA networks

www.arubanetworks.com

1344 Crossman Avenue. Sunnyvale, CA 94089

1-866-55-ARUBA | Tel. +1 408.227.4500 | Fax. +1 408.227.4550 | info@arubanetworks.com