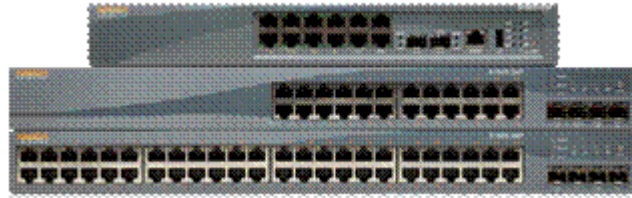Overview

Aruba S1500 Mobility Access Switch

Product overview

The S1500 Mobility Access Switch from Aruba Networks extends role-based user access, security and operational simplicity to wired networks.

A vital part of Aruba Mobility-Defined Networks™, the S1500 delivers secure, virtualized access services to users, regardless of their location, access method, device or applications.

The S1500 is available in three models with 12, 24 or 48 10/100/1000BASE-T ports with power-over-Ethernet (PoE).

The 24- and 48-port models include four 1000BASE-X SFP fixed Gigabit Ethernet uplink ports, and the 12-port model includes two 1000BASE-X uplink ports. Power-over-Ethernet (PoE) is available with up to 15.4 watts per port based on the IEEE 802.3af PoE and up to 30 watts per port on the IEEE 802.3at PoE+ standards.

The feature richness of the S1500, along with its compact form factor and quiet operation, make it ideal for branch office and small office deployments.

Features and Benefits

Flexible and Secure Access Deployments

Mobility Access Switches are unique in their ability to apply role-based policies to wired users and devices. User roles represent specific users or groups with defined names such as guests or employees. They can be defined with VLAN-IDs, QoS policies, VoIP policies or even ACLs.

Dynamic policy enforcement with ClearPass
When deployed with Aruba ClearPass, which provides user and device authentication, user roles may be automatically downloaded and applied to the Mobility Access Switch.
If a user's authorization parameters change - for example, if user access extends outside time-of-day parameters or disabling a firewall violates device health check policies - ClearPass can signal Mobility Access Switches to change the user role associated with the client. The integration and automation of policy management capabilities significantly reduces IT overhead by eliminating the need to manually configure policies on every Mobility Access Switch.

Wired AP with Mobility Controllers
Mobility Access Switches support a unique per-port Tunneled Node capability that enables policy enforcement by an
ICSA-certified stateful firewall resident in Aruba Mobility Controllers. A Tunneled Node port essentially operates as a wired AP, identical to Aruba 802.11ac APs.

Overview

Ports in shared locations such as conference rooms and common areas can be configured so that traffic is enforced by the Mobility Controller firewall, while other ports perform local forwarding. Configured as a wired AP, Mobility Access Switches eliminate the need to configure VLANs, ACLs and QoS policies at each switch in the access layer. Policies for users, devices and applications are defined and enforced by Mobility Controllers across wired and wireless.
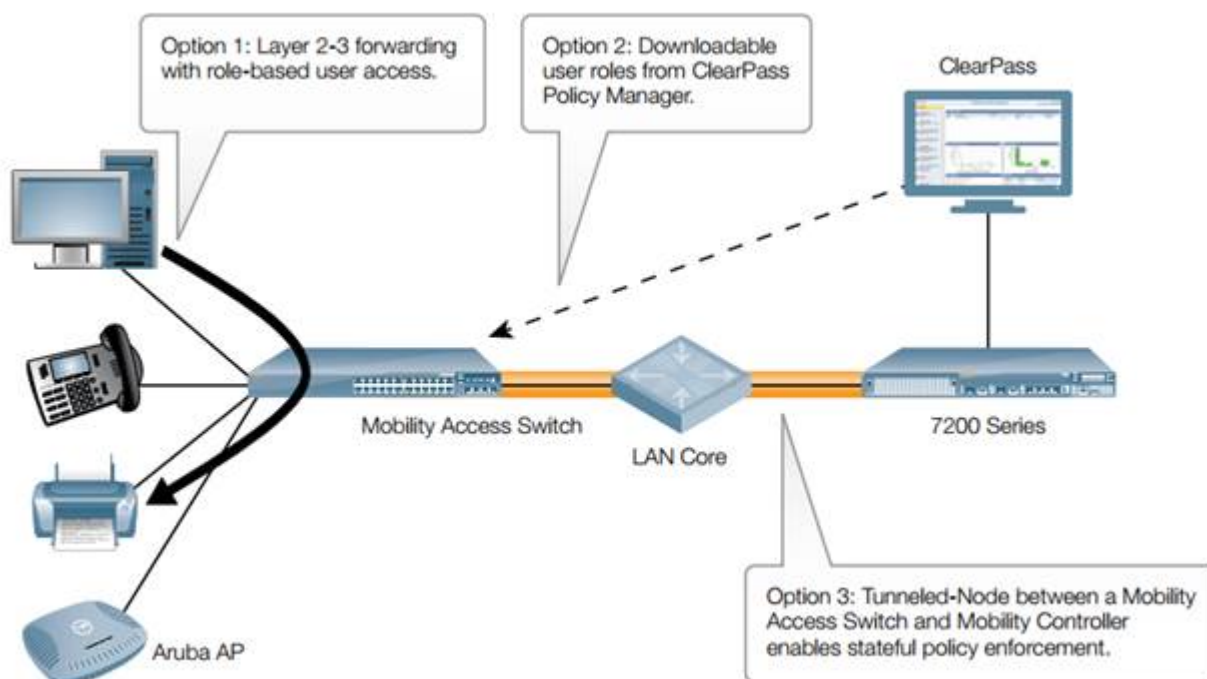
Figure 1. Flexible secure wired access deployments

Free It Staff from tedious network configuration

Mobility Access Switches support several features that reduce the cost, complexity and time to perform configurations and upgrades.

Utilizing port-profiles ensures that ports are configured correctly the first time and simplifies configuration compliance with additional port configuration changes.

When used with Aruba Instant™ APs, Mobility Access Switches automatically learn VLANs configured in the Instant cluster.

Mobility Access Switches additionally modify the port PoE priority as a business-critical resource, reserving power for APs in the event of loss of budgeted PoE power. They can also shut down a port classified as a rogue AP by an Aruba Instant AP.

The automation with Aruba Instant, and integration with ClearPass and Mobility Controllers, eliminates traditional IT overhead that comes from manually configuring parameters and policies on every legacy switch in the access network.

Mobility Access Switches can also utilize the Aruba Activate™ zero-touch provisioning service, which enables customers to efficiently deploy and maintain Aruba devices across a distributed enterprise.

Customers that subscribe to Aruba Central cloud-based network management can also leverage Aruba Activate to categorize and set specific provisioning parameters that enable Aruba devices to automatically obtain their configurations. The benefits of the combined Aruba Central and Aruba Activate integration include:

- Asset tracking and device categorization within the customer organization.
- Reduced time-to-deploy across a large number of locations.
- Automated software-update notifications and simplified upgrades.

Overview

High Availability Features

The S1500 includes a number of features that make it ideal to deploy in networks that require high availability.

- Link aggregation groups (LAGs): Physical ports may be bonded together to increase uplink bandwidth and eliminate the need for primary/backup links which are typically found in spanning-tree topologies.
- PoE priority: ArubaoS PoE priority classifies attached PoE devices with a priority level, ensuring no loss of power for business-critical devices like APs, security cameras and red phones.
- hot Standby Link (hSL): ArubaOS hSL provides a simplified link failover mechanism without configuring and running the spanning-tree protocol. A port or group of ports may be configured as redundant for another port or group of ports

Physical Interfaces

- S1500-12P: 8x10/100/1000BASE-T PoE/PoE+ RJ45 + 4x10/100/1000BASE-T + 2x1000BASE-X SFP
- S1500-24P: 24x10/100/1000BASE-T PoE/PoE+ RJ-45 + 4x1000BASE-X SFP
- S1500-48P: 48x10/100/1000BASE-T PoE/PoE+ RJ-45 + 4x1000BASE-X SFP
- Common interface feature support (all models)
    - Diagnostic LEDs (link/admin/duplex/PoE/speed/fault)
    - Auto-negotiation and auto-MDI/MDIX support
    - Time domain reflectometry
- PoE feature support (all models)
    - IEEE 802.3af: PoE (15.4 watts)
    - IEEE 802.3at: PoE+ (30 watts)
    - Pre-standard/Legacy PoE
    - Aruba efficient PoE (priority, guard-band and time range)
- RJ-45 console port (RS-232)
- Out-of-band 10/100/1000BASE-T management port
- USB interface for software/configuration files

Uplink Interfaces

- S1500-12P: 2x1000BASE-X SFP (SFP purchased separately)
- S1500-24P and S1500-48P: 4 x 1000BASE-X SFP (SFP purchased separately)
- Supported SFP transceivers
    - 1000bASE-LX 1310-nm SFP (LC) up to 10 kilometers over SMF
    - 1000bASE-SX 850-nm SFP (LC) up to 550 meters over MMF (OM2)

Performance

- S1500-12P: 28 Gbps/20.7 Mpps
- S1500-24P: 56 Gbps/41.5 Mpps
- S1500-48P: 104 Gbps/77 Mpps

Power Options

- Integrated power supply
- Autosensing
    - S1500-24P/S1500-48P 100-240 VAC, 580 watts
    - S1500-12P 100-240 VAC, 150 watts
- PoE budget:
    - S1500-12P 120 watts

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- S1500-24P 400 watts
- S1500-48P 400 watts

Layer 2 Features and Scaling

- MAC addresses per system: 8,000
- Jumbo frames: 9,216 bytes
- Number of VLANS: 4,094
- Port- and MAC-based VLAN
- IEEE 802.1Ab: Link-layer discovery protocol (LLDP)
  - Device discovery and advertisement
  - Voice VLAN support using LLDP-MED
- Cisco discovery protocol (CDP)
  - Device discovery
  - Voice VLAN support
- IEEE 802.1Q: VLAN tagging
- GArP VLAN registration Protocol (GVrP)
- IEEE 802.1D: Spanning tree protocol (STP)
- IEEE 802.1w: rapid reconfiguration of spanning Tree protocol (RSTP)
- IEEE 802.1s: Multiple spanning trees protocol (MSTP)
  - Maximum number of supported instances: 64
- rapid per-VLAN spanning tree plus (PVST+)
- Spanning tree protocol features:
  - Portfast
  - Root guard
  - Loop guard
  - BPDU guard
- Aruba loop protect
- Link aggregation groups
  - Static
  - IEEE 802.3ad: Link-aggregation control protocol (LACP)
  - Number of link aggregation groups: 8
  - Number of ports per aggregation group: 8
- Aruba hot Standby Link (hSL)
- IEEE 802.3ah: Ethernet operations, administration and maintenance (OAM)
- Layer 2 Generic routing Encapsulation (GrE)
- Aruba AirGroup

Layer 3 Features and Scaling

- Unicast routes: 1500
- routed VLAN Interface (rVI)
- Loopback interface
- Multinetting
- Static routing
- open shortest path first (oSPF) v2
- Equal Cost multi-Path
- route filtering
- DhCP server/client
- DhCP relay (including option 82)
- Network time protocol (NTP)
- Network Address Translation
- IP directed broadcast

Overview

Security

- 802.1X
- MAC authentication
- Captive portal
- RADIUS (device management, 802.1X, accounting)
- RADIUS fail open
- TACACS+ (device management, accounting)
- LDAP (802.1X)
- Digital certificates
- Internal user database
- Aruba ClearPass Policy Manager downloadable roles
- Aruba Tunneled Node
- Access control lists (ACLs)
- Storm control
- IPv6 router-advertisement (RA) guard
- DhCP guard
- MAC limiting
- Site-to-site IPsec VPN

Multicast Features and Scaling

- Multicast routing
- PIM sparse mode (PIM-SM)
- IGMP v1/v2
- IGMP snooping
- Multicast listener discovery (MLD) v1

Quality Of Service

- 802.1p
- DSCP
- IP precedence
- QoS trust (802.1p/DSCP/auto)
- QoS classification by ACL (L3/L4), user and interface
- Policer classification by ACL (L3/L4), user and interface
- Egress strict priority queuing
- Four hardware queues per port

Management and Monitoring

- Command line interface (serial, telnet, SShv2)
- Graphical user interface (HTTP/HTTPS)
- Aruba Central cloud-based network management
- AirWave network management
- DHCP auto-configuration
- SNMP v1, v2c, v3
- IPv6 management
- Port mirroring (single destination)
- Remote monitoring (RMON)

Physical Specifications

Overview

- Dimensions (H x W x D):
    - S1500-12P: 1.75"? x 13"? x 8.8"?
        (4.4 cm x 33.0 cm x 22.4 cm)
    - S1500-24P: 1.75"? x 17.5"? x 12.5"?
        (4.4 cm x 44.5 cm x 30.5 cm)
    - S1500-48P: 1.75"? x 17.5"? x 12.5"?
        (4.4 cm x 44.5 cm x 30.5 cm)
- Weight:
    - S1500-12P: 7 lbs (3.2 kg)
    - S1500-24P: 10.75 lbs (4.88 kg)
    - S1500-48P: 11.02 lbs (5.0 kg)

Environmental

- Operating temperature:
    - S1500-12P 32°F to 104°F (0°C to 40°C)
    - S1500-24P/S1500-48P 32°F to 122°F (0°C to 50°C)
- Storage temperature: -40°F to 158°F (-40°C to 70°C)
- Operating humidity: 5% to 95% non-condensing
- Operating altitude: 10,000 feet (3,048 meters)
- Acoustic noise:
    - S1500-12P no acoustic noise (fanless)
    - S1500-24P/S1500-48P 42 db with AC power supply

Warranty and Support

- Limited lifetime warranty (all models) includes:
    - Return-to-factory hardware replacement with following business day shipment of failed product
    - 24x7 access to Aruba's Technical Assistance Center (TAC) for 90 days after the purchase date
    - Warranty coverage as long as the original purchaser owns the product
- ArubaCare Support provides additional product support options directly through Aruba or via an authorized Aruba Reseller. Click here for more details.

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
- CISPR22 Class A
- EN 55024

Environmental Certifications

- Reduction of hazardous Substances 5 (rohS-5)

Configuration

Ordering Information

Description	Part Number
Switch Models	
Aruba S1500-12P 12-port 10/100/1000BASE-T PoE+ GbE SFP w/AC Power Supply Mobility Access Switch	JW673A
Aruba S1500-24P 1500-24P 24-port 10/100/1000BASE-T PoE+ GbE SFP w/AC PS Mobility Access Switch	JW671A
Aruba S1500-48P 1500-48P 48-port 10/100/1000BASE-T PoE+ GbE SFP w/AC PS Mobility Access Switch	JW672A
Pluggable transceivers	
SFP-LX 1000BASE-LX SFP 1310nm LC Connector Pluggable GbE XCVR	JW087A
SFP-SX 1000BASE-SX SFP 850nm LC Connector Pluggable GbE XCVR	JW088A
SFP-TX 1000BASE-T SFP Copper GbE RJ45 Connector Pluggable XCVR	JW089A
Spares and Accessories	
Aruba SPR-RK-MNT 7200 / S3500 / S1500-24/48 / S2500 Spare Front or Mid Mount	JW107A
Aruba SPR-WL2-MNT S2500/S1500 7024 Wall and Rack Mount Kit	JW083A
Aruba SPR-RK2-MNT S1500-12P Spare Rack and Wall Mount Kit	JW151A

Summary of Changes

Date	Version History	Action	Description of Change
23-Oct-2017	From Version 1 to 2	Changed	Aruba information updated
01-Nov-2016	Version 1	Created	Document creation.

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