

## Highlights

### Cloud-Managed Switch Stacking

- Combine multiple switches into a single configurable unit supported by granular device templates that can further ease the administrative burden of multi-switch management.

### Management and Analytics with ExtremeCloud™ IQ

- Automated deployments
- Simplified network operations
- Advanced reporting and network insights

### Port and Power Options

- 8x to 48x Port Gigabit Ethernet
- 124W to 740W PoE+



## ExtremeSwitching™ SR2200-2300

Enterprise Cloud-Managed Access Switches Providing Unified Wired and Wireless Access with Centralized Management and Visibility Across the Entire Network

The SR switches provide energy-efficient gigabit Layer 3-Lite capabilities with flexible Power over Ethernet (PoE), as well as a wealth of port density options. Critical capabilities, such as zero-touch provisioning and powerful QoS make these switches a complement to any enterprise network.

The SR2208P fanless desktop switch offers quick and easy wiring closet extensions, while the SR2224P, an entry level access switch, offers simple wiring closet expansion. The SR2324P and SR2348P provide premium bandwidth and port density access on the edge of the network and also feature stacking functionality.



### Built to Suit Your Business Needs

**Extreme Elements** are the building blocks that allow you to tailor your network to your specific business environment, goals, and objectives. They enable the creation of an Autonomous Network that delivers the positive experiences and business outcomes most important to your organization.

Combining architecture, automation, and artificial intelligence, Extreme Elements enable you to ensure that your users get what they need — when and where they need it. Providing these superior user experiences is as simple as mixing and matching the right elements.

Learn more at [extremenetworks.com/elements](http://extremenetworks.com/elements).

# Hardware Components

## SR2200 Switch Series

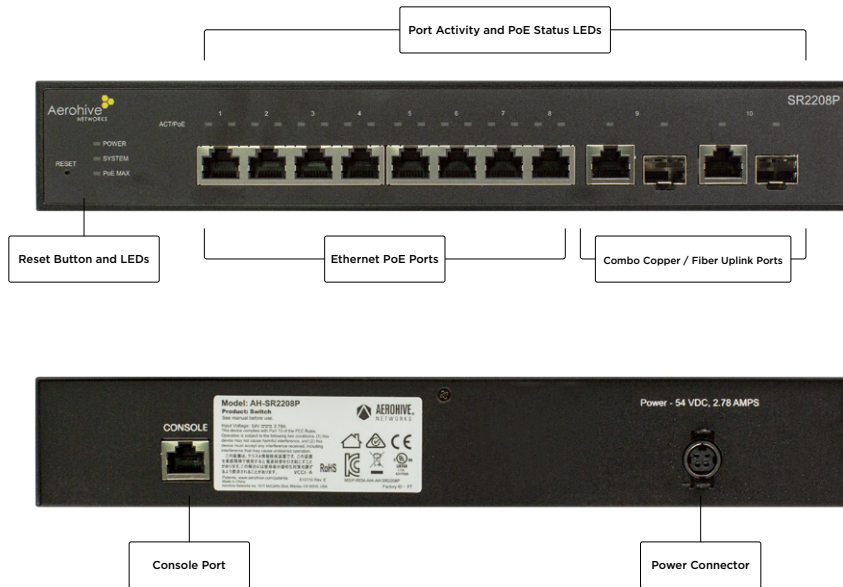
**SR 2208P**

8x GE PoE+ Ports

124W PoE Power Budget

2x GE Combo Uplinks

The SR2208P is a fanless desktop switch that offers quick and easy wiring closet extensions.



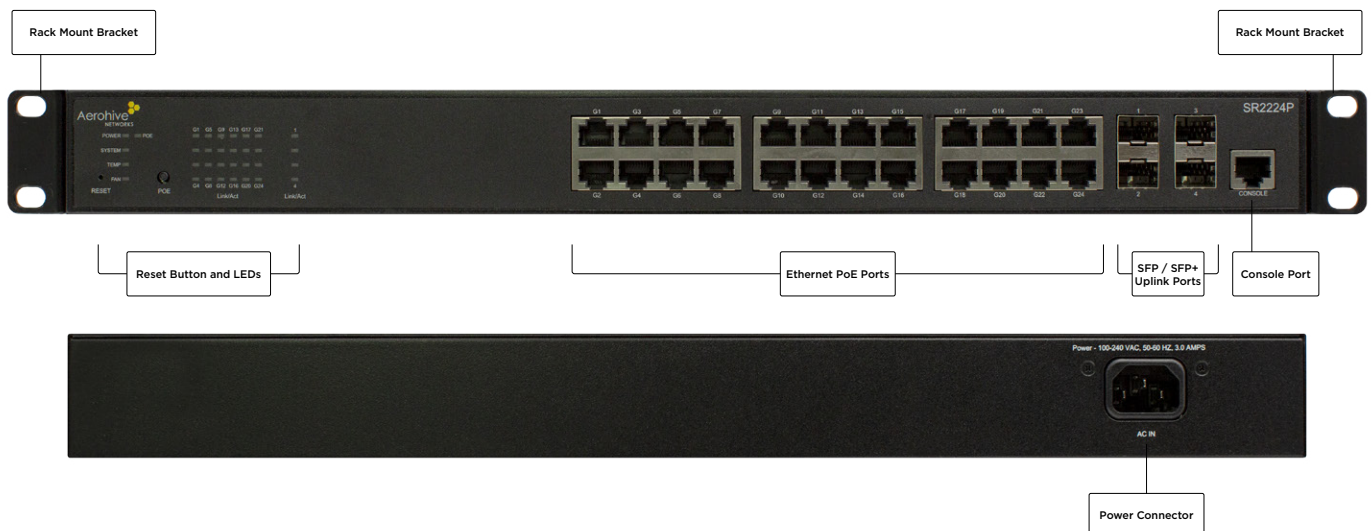
**SR 2224P**

24x GE PoE+ Ports

180W PoE Power Budget

4x 1 GE SFP Uplinks

The SR2224P is an entry level access switch offering simple wiring closet expansion along with ease of management and scalability.



# Hardware Components (cont.)

## SR2300 Switch Series

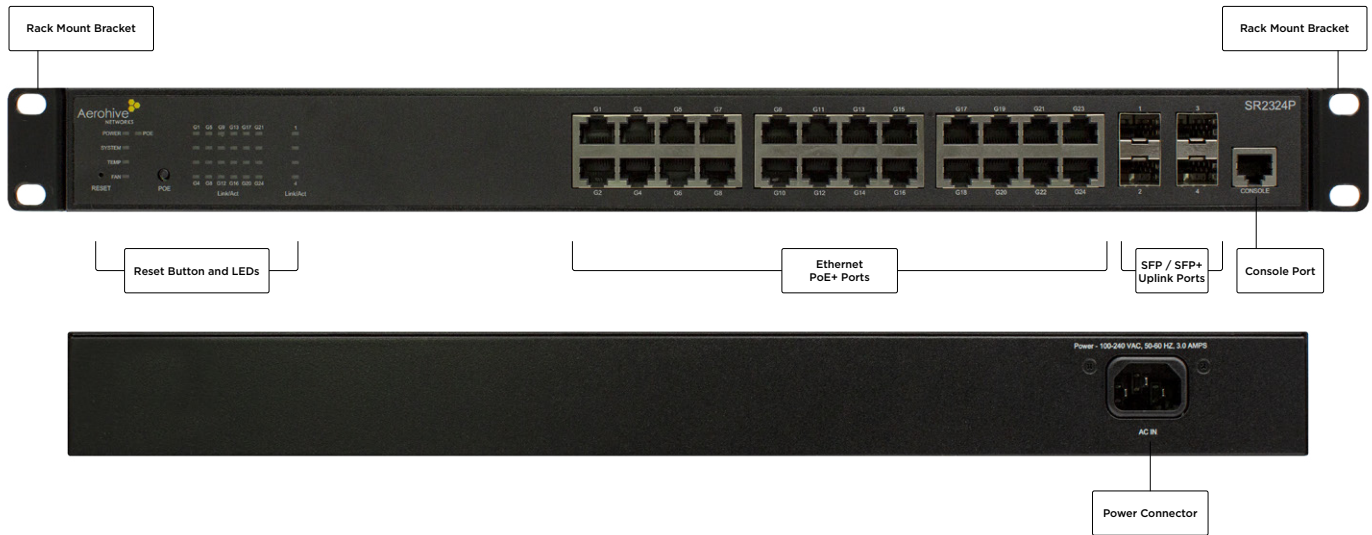
**SR 2324P**

24x GE PoE+ Ports

370W PoE Power Budget

4x 10 GE SFP+ Uplinks

The SR2324P is a premium stacking-capable access switch that provides high bandwidth and port density access on the network edge.



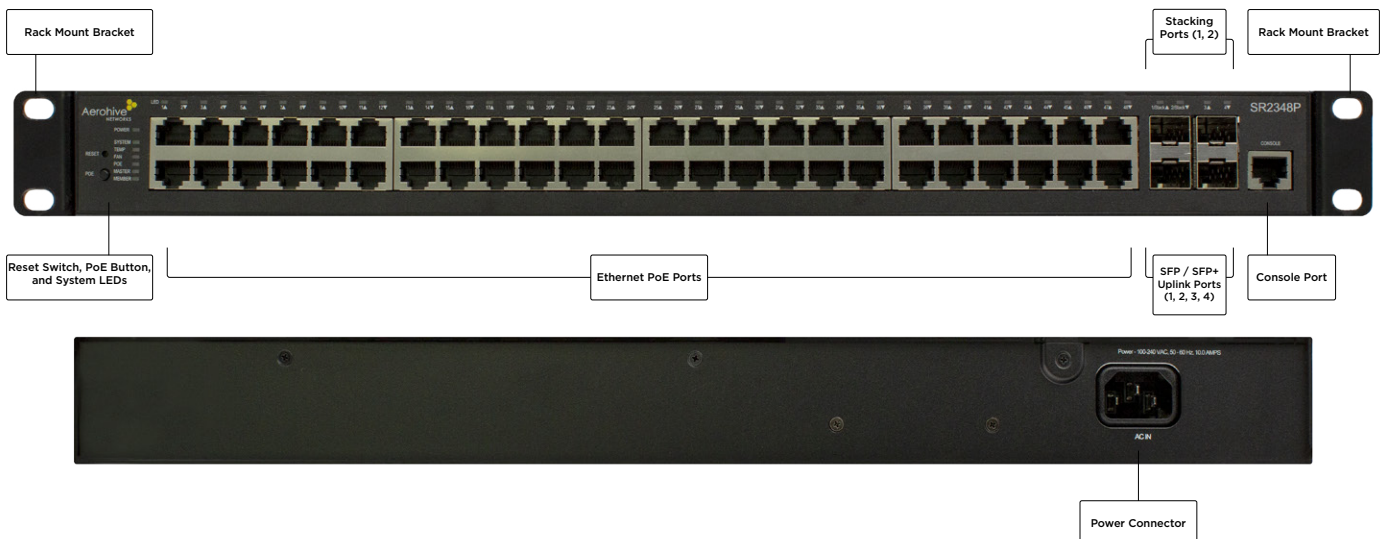
**SR 2348P**

48x GE PoE+ Ports

740W PoE Power Budget

4x 10 GE SFP+ Uplinks

The SR2348P is a top-of-the-line stacking-capable access switch with premium port density and ultra-high PoE budget.



# Portfolio Comparison

Model	Dimensions (WxDxH, mm)	Downlink Ports	Uplink Ports	PoE Budget	Switching Capacity	Stacking	L3 Static Routing	MTBF (Hours)
SR2208P	279x170x44	8 x 1 GE Ports	2x 1GE Dual Media (SFP and Copper)	124W	20 Gbps	No*	No	1,208,148
SR2224P	440x240x44	24 x 1 GE Ports	4 x 1 GE SFP	180W	56 Gbps	No*	No	2,490,009
SR2324P	440x240x44	24 x 1 GE Ports	4 x 10 GE SFP+	370W	128 Gbps	Yes	Yes	1,489,636
SR2348P	440x350x44	48 x 1 GE Ports	4 x 10 GE SFP+	740W	176 Gbps	Yes	Yes	1,489,636

## Model Commonalities

- Reset button to reset (on press) and load factory default settings
- RJ45 serial console port
- Downlink ports with 802.3af/802.3at PoE/PoE+ with legacy support
- 30 Watts max per port
- 16,000 MAC addresses
- Jumbo Frames (9216 bytes)
- 4095 VLANs

## Environmental

- Operating temperature: 0 to +40 °C
- Storage temperature: -25 to +70 °C
- Humidity: 5% to 95% RH (non-condensing)
- Acoustics: (for all 24 and 48 port models)
- 48 dB max (<25 °C)
- 53 dBA max (>25 °C at max fan speed)
- 8 port model is fanless and therefore quiet
- Input voltage 100-240 Volts

# Software Features

## Switching

### Core Switching Features

- IEEE 802.1AB—Link Layer Discovery Protocol (LLDP)
- IEEE 802.1D—Spanning tree compatibility
- IEEE 802.1p—Ethernet priority with user provisioning and mapping
- IEEE 802.1s—Multiple spanning tree compatibility
- IEEE 802.1Q—Virtual LANs with port-based VLANs
- IEEE 802.1X—Port-based authentication with Guest VLAN support
- IEEE 802.1W—Rapid spanning tree compatibility
- IEEE 802.3—10BASE-T
- IEEE 802.3u—100BASE-T
- IEEE 802.3ab—1000BASE-T
- IEEE 802.1ak—Virtual Bridged Local Area Networks - Amendment 07: Multiple Registration Protocol
- IEEE 802.3ac—VLAN tagging
- IEEE 802.3ad—Link aggregation
- IEEE 802.3x —Flow control
- Static Routing
- GARP—Generic Attribute Registration Protocol: clause 12, IEEE 802.1D-2004
- GMRP—Dynamic L2 multicast registration: clause 10, IEEE 802.1D-2004
- GVRP—Dynamic VLAN registration: clause 11.2, IEEE 802.1Q- 2003
- RFC 4541—Considerations for Internet Group Management Protocol (IGMP) Snooping Switches
- ANSI/TIA-1057—LLDP-Media Endpoint Discovery (MED)
- RFC 5171—Unidirectional Link Detection (UDLD) Protocol

### Advanced Layer-2 Features

- Authentication, Authorization, and Accounting (AAA)
- Broadcast Storm Recovery
- Broadcast/Multicast/Unknown unicast storm recovery
- DHCP Snooping
- IGMP Snooping Querier
- Multicast VLAN Registration (MVR)
- Independent VLAN Learning (IVL) support
- IPv6 Classification APIs
- Jumbo Ethernet frame support
- Port MAC locking
- Port mirroring
- Protected ports
- Static MAC filtering
- TACACS+
- Voice VLANs
- Unauthenticated VLAN
- Internal 802.1X Authentication Server
- CLI Filtering
- Switchport mode configuration
- Link Dependency
- IPv6 RA Guard (Stateless)

## Security

Permit/deny actions for inbound IP and Layer-2 traffic classification based on:

- Time-Based ACL
- Source/Destination IP address
- TCP/UDP Source/Destination port
- IP Protocol Type
- Type of Service (ToS) or differentiated services (DSCP) field
- Source/Destination MAC address
- EtherType
- IEEE 802.1p user priority (outer and/or inner VLAN tag)
- VLAN ID (outer and/or inner VLAN tag)
- RFC 1858—Security Considerations for IP Fragment Filtering

### Optional ACL Rule Attributes

- Assign flow to a specific Class of Service (CoS) queue
- Redirect matching traffic flows

## Management

- HiveManager
- Industry-standard CLI
- IPv6 management
- Password management
- Autoinstall support for firmware images and configuration files
- SNMP v1, v2, and v3
- SSH 1.5 and 2.0
- RFC 4252: SSH authentication protocol
- RFC 4253: SSH transport layer protocol
- RFC 4254: SSH connection protocol
- RFC 4251: SSH protocol architecture
- RFC 4716: SECSH public key file format
- RFC 4419: Diffie-Hellman group exchange for the SSH transport layer protocol
- SSL 3.0 and TLS 1.0
- RFC 2246: The TLS protocol, version 1.0
- RFC 2818: HTTP over TLS
- RFC 3268: AES cipher suites for transport layer security
- Secure Copy (SCP)
- Telnet
- Web

### Advanced Management Features

Industry Standard CLI with the following features:

- Scripting capability
- Command completion
- Context sensitive help
- Optional user password encryption
- Multi-session Telnet server

# Software Features (cont.)

## Systems Facilities

- Event and error logging facility
- Run-time and configuration download capability
- PING utility
- Xmodem
- FTP Transfers via IPv4/IPv6
- Malicious Code Detection
- RFC 768—UDP
- RFC 783—TFTP
- RFC 791—IP
- RFC 792—ICMP
- RFC 793—TCP
- RFC 826—ARP
- RFC 894—Transmission of IP datagrams over Ethernet Networks
- RFC 896—Congestion control in IP/TCP networks
- RFC 951—BOOTP
- RFC 1034—Domain names - concepts and facilities
- RFC 1035—Domain names - implementation and specification
- RFC 1321—Message digest algorithm
- RFC 1534—Interoperability between BOOTP and DHCP
- RFC 2021—Remote network monitoring management information base version 2
- RFC 2030—Simple Network Time Protocol (SNTP)
- RFC 2131—DHCP relay
- RFC 2132—DHCP options and BOOTP vendor extensions
- RFC 2819—Remote Network Monitoring Mgmt Information Base
- RFC 2865—RADIUS client
- RFC 2866—RADIUS accounting
- RFC 2868—RADIUS attributes for tunnel protocol support
- RFC 2869—RADIUS Extensions
- RFC 3579—RADIUS support for EAP
- RFC 3580—IEEE 802.1X RADIUS usage guidelines
- RFC 3164—The BSD syslog protocol
- RFC 3176—sFlow
- RFC 3580—802.1X RADIUS Usage Guidelines
- RFC 5176—Dynamic Authorization Server (Disconnect-Request processing only)

## SNMP MIBs

- Switching MIBs
- IEEE 802.1X MIB (IEEE 802.1-PAE-MIB 2004 Revision)
- IEEE 802.3AD MIB (IEEE 802.3-AD-MIB)
- IANAifType-MIB
- FASTPATH Enterprise MIBs for full configuration support of switching features

## SNMP MIBs (Cont.)

- RFC 1213—MIB II
- RFC 1493—Bridge MIB
- RFC 1612—DNS resolver MIB extensions
- RFC 1643—Definitions of managed objects for the Ethernet-like interface types
- RFC 2233—Interfaces group MIB using SMI v2
- RFC 2613—SMON MIB
- RFC 2618—RADIUS authentication client MIB
- RFC 2620—RADIUS accounting MIB
- RFC 2674—VLAN MIB
- RFC 2737—Entity MIB version 2
- RFC 2819—RMON groups 1, 2, 3, and 9
- RFC 2863—IF-MIB
- RFC 2925—Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations
- RFC 3273—RMON Groups 1, 2, and 3
- RFC 3291—Textual conventions for Internet network addresses
- RFC 3434—RMON Groups 1, 2, and 3
- RFC 4022—TCP-MIB
- RFC 4113—UDP-MIB

## Quality of Service MIBs

- MIBs for full configuration support of DiffServ, ACL, and CoS functionality
- RFC 3289—Management information base for the DiffServ architecture (read-only)

## Quality of Service

- Classify traffic based on same criteria as ACLs and optionally:
- Mark the IP DSCP or Precedence header fields
- Police the flow to a specific rate with two-color aware support
- RFC 2474—Definition of the differentiated services field (DS field) in the IPv4 and IPv6 headers
- RFC 2475—An architecture for differentiated services
- RFC 2597—Assured forwarding Per-Hop Behavior (PHB) group
- RFC 2697—Single-rate policing
- RFC 3246—An expedited forwarding PHB
- RFC 3260—New terminology and clarifications for DiffServ

## Class of Service (CoS) Queue Mapping Configuration

- AutoVoIP - Automatic CoS settings for VoIP
- IP DSCP-to-queue mapping
- Configurable interface trust mode (IEEE 802.1p, DSCP, or untrusted)
- Interface egress shaping rate
- Strict priority versus weighted scheduling per queue

## Ordering Information

SKU	Description
AH-SR-2208P	SR2208P, 8 x GE RJ45 copper ports, 2 x dual media (fiber/copper) GE ports, 124W PoE budget, L3 Lite Static Routing
AH-SR-2224P	SR2224P, 24 x GE RJ45 copper ports, 4 x GE SFP ports, 180W PoE budget, L3 Lite Static Routing
AH-SR-2324P	SR2324P, 24 x GE RJ45 copper ports, 4 x 10GE SFP+ ports, 370W PoE budget, L3 Lite Static Routing
AH-SR-2348P	SR2348P, 48 x GE RJ45 copper ports, 4 x 10GE SFP+ ports, 740W PoE budget, L3 Lite Static Routing

### Small Form-Factor Pluggable (SFP) Accessory SKUs

SKU	Access Type	Wave Length (nm)	Fiber Type	Designation	Core Diameter (Xm)	Cladding Diameter (Xm)	Jacket Color	Max Distance	Min Distance	Data Rate	Product Compatibility
AH-ACC-SFP-1G-SX	1000 BASE SX	850	MMF	OM1	62.5	125	Orange	220m	2m	1 Gbps	All SR Series
	1000 BASE SX	850	MMF	OM2	50	125	Orange	550m	2m	1 Gbps	All SR Series
	1000 BASE SX	850	MMF	OM3	50	125	Aqua	550m	2m	1 Gbps	All SR Series
	1000 BASE SX	850	MMF	OM4	50	125	Aqua	1km	2m	1 Gbps	All SR Series
AH-ACC-SFP-1G-LX	1000 BASE LX	1310	SMF	OS1	9	125	Yellow	10km	2km	1 Gbps	All SR Series
	1000 BASE LX	1310	SMF	OS2	9	125	Yellow	10km	2km	1 Gbps	All SR Series
	1000 BASE LX	1310	MMF	*Requires Conditioning Patch Cord				550m	2m	10 Gbps	All SR Series
AH-ACC-SFP-1G-SR	1000 BASE SR	850	MMF	OM1	62.5	125	Orange	—	2m	10 Gbps	2300 Series
	1000 BASE SR	850	MMF	OM2	50	125	Orange	—	2m	10 Gbps	2300 Series
	1000 BASE SR	850	MMF	OM3	50	125	Aqua	300m	2m	10 Gbps	2300 Series
	1000 BASE SR	850	MMF	OM4	50	125	Aqua	400m	2m	10 Gbps	2300 Series
AH-ACC-SFP-1G-LR	1000 BASE LR	1310	SMF	OS1	9	125	Yellow	10km	2km	10 Gbps	2300 Series
	1000 BASE LR	1310	SMF	OS2	9	125	Yellow	10km	2km	10 Gbps	2300 Series

**Note:** SKUs at left are for individual SFP transceivers; specification at right describe compatible cables. \* Not sold by Extreme Networks

### Direct Attach Cable (DAC) Accessory SKUs

SKU	Access Type	Cable Length	Assembly Type	Data Rate	Product Compatibility
AH-ACC-SFP-10G-DAC-1M	10Gbps SFP+Cu	1m	Passive Twinax	10 Gbps	2300 Series
AH-ACC-SFP-10G-DAC-7M	10Gbps SFP+Cu	7m	Passive Twinax	10 Gbps	2300 Series

### Miscellaneous SKUs

SKU	Description
AH-ACC-SR-RM-ASM2	SR2224P/SR2324P/SR2348P Rack mount assembly spare
AH-ACC-SR-RM-ASM3	SR2208P Rack mount assembly