EdgeSwitch™

Managed PoE+ Gigabit Switches with SFP

Models: ES-16-150W, ES-24-250W, ES-24-500W, ES-48-500W, ES-48-750W

Non-Blocking Throughput Switching Performance

Gigabit Ethernet RJ45 and SFP+/SFP Ports

Auto-Sensing IEEE 802.3af/at PoE

UBIQUITI®
NETWORKS

EdgeSwitch™

Advanced Switching Technology for the Masses

Build and expand your network with Ubiquiti Networks® EdgeSwitch™, part of the EdgeMAX® line of products. The EdgeSwitch is a fully managed, PoE+ Gigabit switch, delivering robust performance and intelligent switching for growing networks.

The EdgeSwitch offers an extensive suite of advanced Layer-2 switching features and protocols, and also provides Layer-3 routing capability.

Switching Performance

The EdgeSwitch offers the forwarding capacity to simultaneously process traffic on all ports at line rate without any packet loss.

For its total, non-blocking throughput, the 16-port model supports up to 18 Gbps, and the 24-port models support up to 26 Gbps. The 48-port models support up to 70 Gbps.

PoE+ Flexibility

The EdgeSwitch models are available with 16, 24, or 48 PoE Gigabit Ethernet ports of auto-sensing IEEE 802.3af/at or configurable 24V Passive PoE to simplify your infrastructure.

By default, the EdgeSwitch automatically detects 802.3af/at devices so they automatically receive PoE. For 24V Passive PoE devices, manually enable 24V passive PoE using the EdgeSwitch Configuration Interface.

Fiber Connectivity

The EdgeSwitch provides fiber connectivity options for your growing networks. The 16- and 24-port models include two SFP ports, providing up to 1 Gbps uplinks.
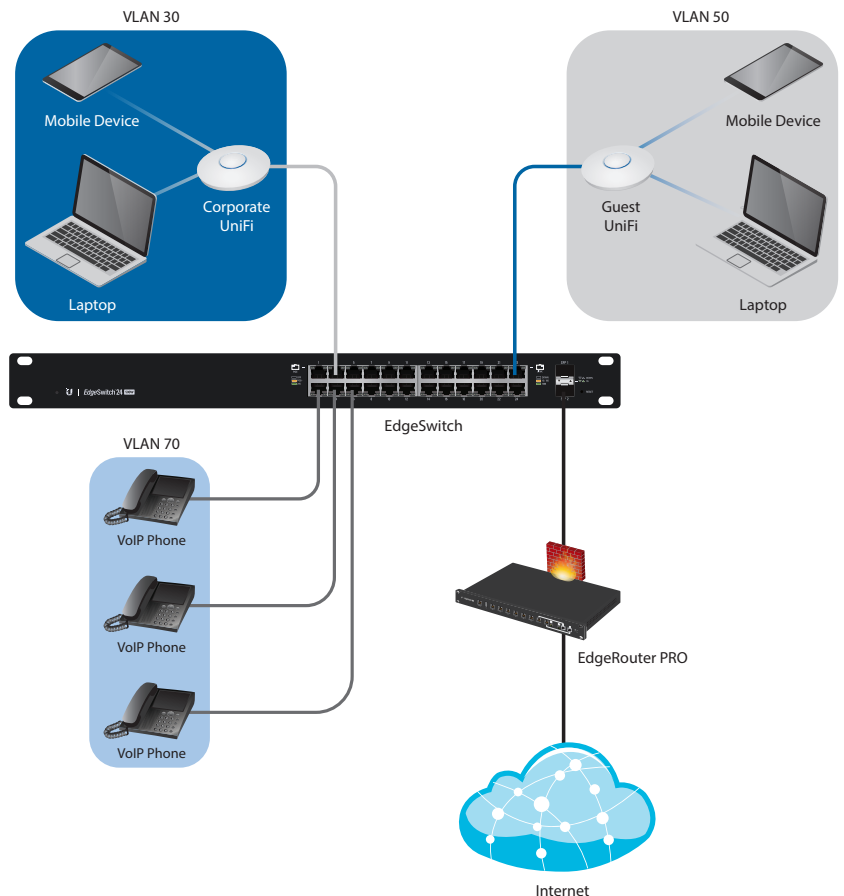
For high-capacity uplinks, the 48-port models include two SFP and two SFP+ ports, providing up to 10 Gbps uplinks.

Deployment Examples
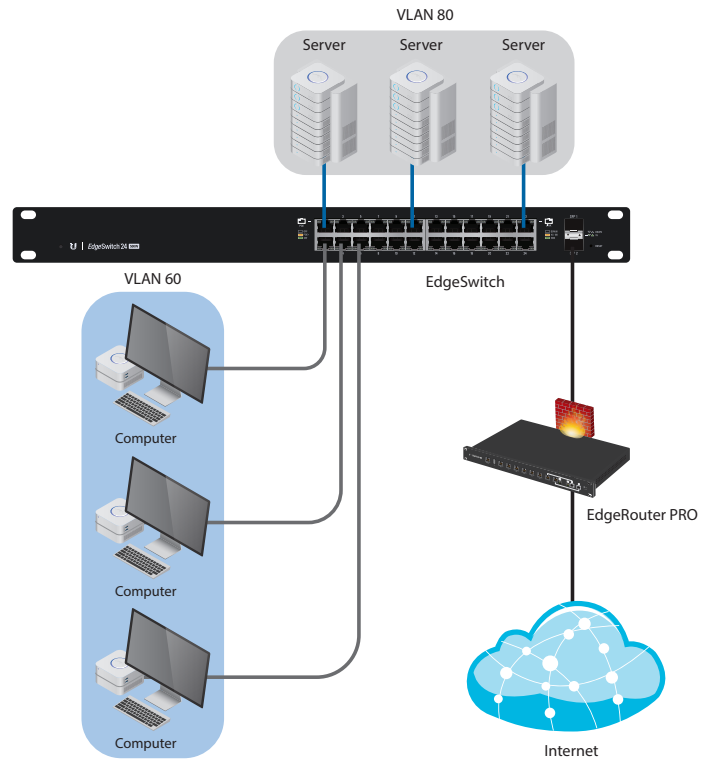
VLANs for Servers and Computers
*The EdgeSwitch connects to the Ubiquiti EdgeRouter™ PRO via an SFP uplink.*

VLANs for Corporate Wireless, Guest Wireless, and VoIP
For wireless access, two Ubiquiti UniFi® Access Points connect to the EdgeSwitch.

Comprehensive User Interface

Designed for convenient management, the EdgeSwitch Configuration Interface allows administrators to configure and monitor switch features in a graphical user interface.

For advanced users, an industry-standard command-line interface (CLI) is available through the serial console port, telnet, and SSH.
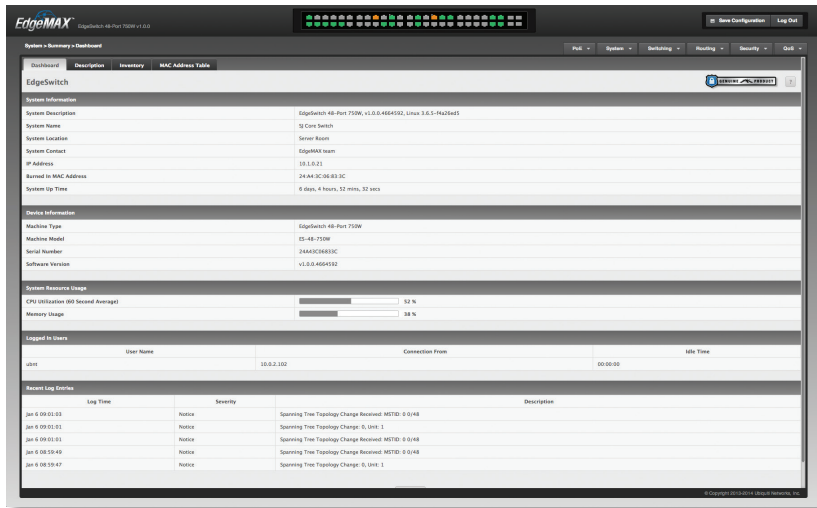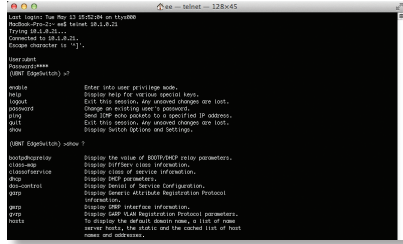
Powerful Functionality

The EdgeSwitch uses a sophisticated operating system that provides basic switching features, PoE configuration per port, and a variety of advanced features including:

- MSTP/RSTP/STP
- VLAN, Private VLAN, Voice VLAN
- Link Aggregation
- DHCP Snooping, IGMP Snooping
- TACACS+, RADIUS, 802.1X, MAC Filtering, ACL
- DiffServ, CoS
- Static Routing, Policy-Based Routing
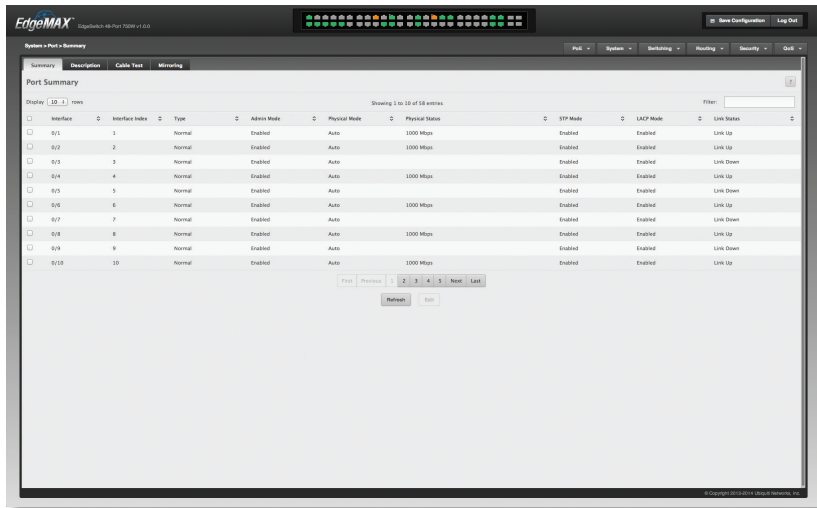
Models

EdgeSwitch 16 (150W Model)

Model: ES-16-150W

- (16) Gigabit RJ45 Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 18 Gbps
- Switching Capacity: 36 Gbps
- Forwarding Rate: 26.78 Mpps
- Maximum Power Consumption: 150W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Rackmountable with Rack-Mount Brackets (Included)

Front Panel

Back Panel

Attaching Rack-Mount Brackets to the EdgeSwitch 16

EdgeSwitch 24 (250W Model)

Model: ES-24-250W

- (24) Gigabit RJ45 Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 26 Gbps
- Switching Capacity: 52 Gbps
- Forwarding Rate: 38.69 Mpps
- Maximum Power Consumption: 250W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Rackmountable

Front Panel

Back Panel

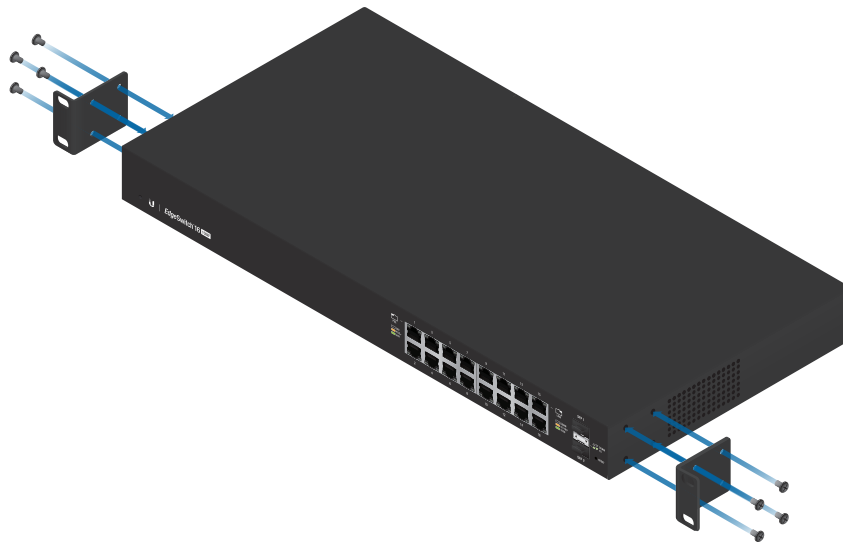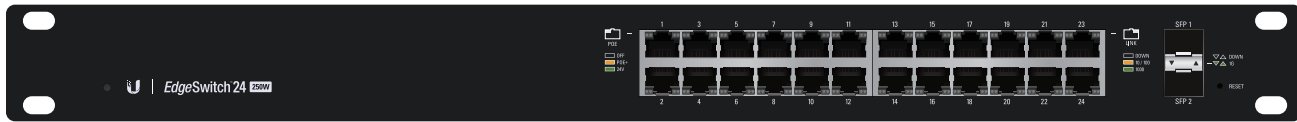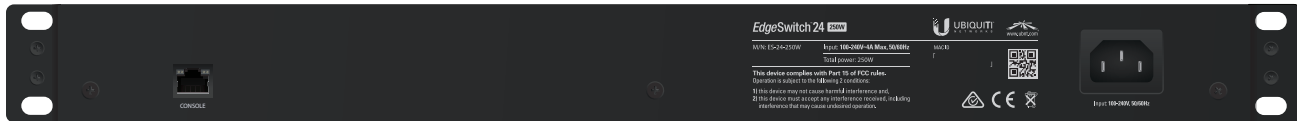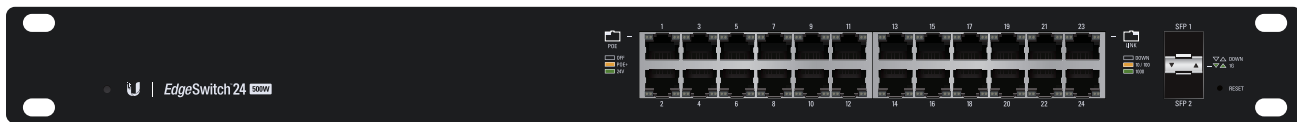## EdgeSwitch 24 (500W Model)

Model: ES-24-500W

- (24) Gigabit RJ45 Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 26 Gbps
- Switching Capacity: 52 Gbps
- Forwarding Rate: 38.69 Mpps
- Maximum Power Consumption: 500W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Rackmountable

Front Panel
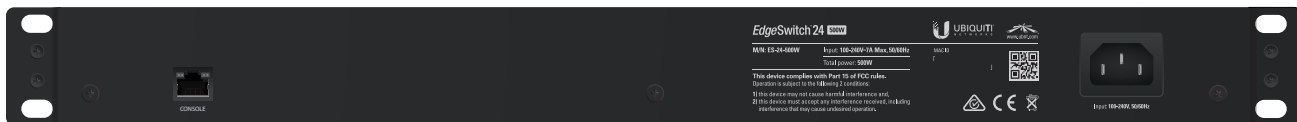
Back Panel

EdgeSwitch 48 (500W Model)

Model: ES-48-500W

- (48) Gigabit RJ45 Ports
- (2) SFP+ Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 70 Gbps
- Switching Capacity: 140 Gbps
- Forwarding Rate: 104.16 Mpps
- Maximum Power Consumption: 500W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Rackmountable

Front Panel

Back Panel

EdgeSwitch 48 (750W Model)

Model: ES-48-750W

- (48) Gigabit RJ45 Ports
- (2) SFP+ Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 70 Gbps
- Switching Capacity: 140 Gbps
- Forwarding Rate: 104.16 Mpps
- Maximum Power Consumption: 750W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Rackmountable
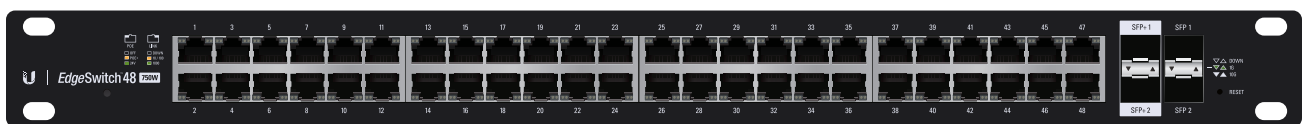

Front Panel

Back Panel

*Edge*Switch™ 16 150W

Hardware Specifications

ES-16-150W	
Dimensions	443 x 43 x 221 mm (17.44 x 1.69 x 8.70")
Weight With Mount Brackets	2.80 kg (6.17 lb) 2.89 kg (6.37 lb)
Total Non-Blocking Throughput	18 Gbps
Switching Capacity	36 Gbps
Forwarding Rate	26.78 Mpps
Max. Power Consumption	150W
Power Method	100-240VAC/50-60 Hz, Universal Input
Power Supply	AC/DC, Internal, 150W DC

LEDs Per Port
  Serial Console Port
  RJ45 Data Ports
  SFP Data Ports
	N/A
	PoE, Speed/Link/Activity
	Speed/Link/Activity

Networking Interfaces	(16) 10/100/1000 Mbps RJ45 Ethernet Ports (2) 1 Gbps SFP Ethernet Ports
Management Interface	(1) RJ45 Serial Port, Ethernet In/Out Band
Certifications	CE, FCC, IC
Rackmount	Yes, 1U High
ESD/EMP Protection	Air: ±24 kV, Contact: ±24 kV
Operating Temperature	-5 to 40° C (23 to 104° F)
Operating Humidity	5 to 95% Noncondensing
Shock and Vibration	ETSI300-019-1.4 Standard

PoE Per Port	
PoE Interfaces	POE+ IEEE 802.3af/at (Pins 1, 2+; 3, 6-) 24VDC Passive PoE (Pins 4, 5+; 7, 8-)
Max. PoE+ Wattage per Port by PSE	34.2W
Voltage Range 802.3at Mode	50–57V
Max. Passive PoE Wattage per Port	17W
24V Passive PoE Voltage Range	20-27V

EdgeSwitch™ 24

Hardware Specifications

ES-24-250W, ES-24-500W	
Dimensions	485 x 43.7 x 285.4 mm (19.09 x 1.72 x 11.24")
Weight ES-24-250W ES-24-500W	4.7 kg (10.4 lb) 4.8 kg (10.6 lb)
Total Non-Blocking Throughput	26 Gbps
Switching Capacity	52 Gbps
Forwarding Rate	38.69 Mpps
Max. Power Consumption ES-24-250W ES-24-500W	250W 500W
Power Method	100-240VAC/50-60 Hz, Universal Input
Power Supply ES-24-250W ES-24-500W	AC/DC, Internal, 250W DC AC/DC, Internal, 500W DC
LEDs Per Port Serial Console Port RJ45 Data Ports SFP Data Ports	N/A PoE, Speed/Link/Activity Speed/Link/Activity
Networking Interfaces	(24) 10/100/1000 Mbps RJ45 Ethernet Ports (2) 1 Gbps SFP Ethernet Ports
Management Interface	(1) RJ45 Serial Port, Ethernet In/Out Band
Certifications	CE, FCC, IC
Rackmount	Yes, 1U High
ESD/EMP Protection	Air: ±24 kV, Contact: ±24 kV
Operating Temperature	-5 to 40° C (23 to 104° F)
Operating Humidity	5 to 95% Noncondensing
Shock and Vibration	ETSI300-019-1.4 Standard

PoE Per Port	
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Voltage Range 802.3at Mode	50–57V
Max. Passive PoE Wattage per Port	17W
24V Passive PoE Voltage Range	20-27V

*Edge*Switch™ 48

Hardware Specifications

ES-48-500W, ES-48-750W	
Dimensions	485 x 43.7 x 374.6 mm (19.09 x 1.72 x 14.75")

Weight
  ES-48-500W
  ES-48-750W
	
	6.1 kg (13.5 lb)
	6.5 kg (14.3 lb)

Total Non-Blocking Throughput	70 Gbps
Switching Capacity	140 Gbps
Forwarding Rate	104.16 Mpps

Max. Power Consumption
  ES-48-500W
  ES-48-750W
	
	500W
	750W

Power Method	100-240VAC/50-60 Hz, Universal Input

Power Supply
  ES-48-500W
  ES-48-750W
	
	AC/DC, Internal, 500W DC
	AC/DC, Internal, 750W DC

LEDs Per Port
  Serial Console Port
  RJ45 Data Ports
  SFP+/SFP Data Ports
	
	N/A
	PoE, Speed/Link/Activity
	Speed/Link/Activity

Networking Interfaces	(48) 10/100/1000 Mbps RJ45 Ethernet Ports (2) 1/10 Gbps SFP+ Ethernet Ports (2) 1 Gbps SFP Ethernet Ports
Management Interface	(1) RJ45 Serial Port, Ethernet In/Out Band
Certifications	CE, FCC, IC
Rackmount	Yes, 1U High
ESD/EMP Protection	Air: ±24 kV, Contact: ±24 kV
Operating Temperature	-5 to 40° C (23 to 104° F)
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Shock and Vibration	ETSI300-019-1.4 Standard

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Voltage Range 802.3at Mode	50–57V
Max. Passive PoE Wattage per Port	17W
24V Passive PoE Voltage Range	20-27V

Software Specifications

Software Information	
Core Switching Features	• ANSI/TIA-1057: LLDP-Media Endpoint Discovery (MED) • IEEE 802.1AB: Link Layer Discovery Protocol (LLDP) • IEEE 802.1D: Spanning Tree Compatibility • IEEE 802.1S: Multiple Spanning Tree Compatibility • IEEE 802.1W: Rapid Spanning Tree Compatibility • IEEE 802.1Q: Virtual LANs with Port-Based VLANs • IEEE 802.1p: Ethernet Priority with User Provisioning and Mapping • IEEE 802.1X: Port-Based Authentication with Guest VLAN Support • 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 • IEEE 802.1D-2004: Generic Attribute Registration Protocol: Clause 12 (GARP) • IEEE 802.1D-2004: Dynamic L2 multicast registration: Clause 10 (GMRP) • IEEE 802.1Q-2003: Dynamic VLAN registration: Clause 11.2 (GVRP) • RFC 4541: Considerations for Internet Group Management Protocol (IGMP) Snooping Switches • RFC 5171: Unidirectional Link Detection (UDLD) Protocol
Advanced Layer 2 Features	• Broadcast Storm Recovery • Broadcast/Multicast/Unknown Unicast Storm Recovery • DHCP Snooping • IGMP Snooping Querier • Independent VLAN Learning (IVL) Support • Jumbo Ethernet Frame Support • Port MAC Locking • Port Mirroring • Protected Ports • Static MAC Filtering • TACACS+ • Voice VLANs • Unauthenticated VLAN • Internal 802.1X Authentication Server

Software Information	

Platform Specifications	• DHCP Server
	  • Maximum Number of Pools: 8
	  • Maximum Number of Leases (Total): 128
	• Routing
	  • Number of Routes: 16
	  • Number of Routing Interfaces: 15
	• VLANs: 255
	• MAC Addresses: 8k
	• MSTP Instances: 4
	• LAGs: 6
	• ACLs: 100 with 10 Rules per Port
	• Traffic Classes (Queues): 8

System Facilities	• Event and Error Logging Facility • Run-Time and Configuration Download Capability • PING Utility • FTP/TFTP Transfers via IPv4/IPv6 • Malicious Code Detection • BootP and DHCP • RFC 2021: Remote Network Monitoring Management Information Base Version 2 • RFC 2030: Simple Network Time Protocol (SNTP) • RFC 2819: Remote Network Monitoring Management 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: BSD Syslog Protocol
Management	• Web UI • 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 • SSL 3.0 and TLS 1.0 • Secure Copy (SCP) • Telnet (Multi-Session Support)
Layer 3 Routing	• Static Routing • Policy Based Routing

Software Information

QoS   • Access Control Lists (ACLs), 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
     • VLAN ID
     • 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
    • Differentiated Services (DiffServ)
     • Classify Traffic Based on Same Criteria as ACLs
     • Mark the IP DSCP or Precedence Header Fields, Optional
     • 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 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

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