*Edge*Switch®

Managed PoE+ Gigabit Switches with SFP

Models: ES-8-150W, 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
N E T W O R K S

EdgeMAX®

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.

The EdgeSwitch provides total, non-blocking throughput:

- **8-Port Model** Up to 10 Gbps
- **16-Port Model** Up to 18 Gbps
- **24-Port Models** Up to 26 Gbps
- **48-Port Models** Up to 70 Gbps

PoE+ Flexibility

The EdgeSwitch models are available with 8, 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 8, 16, and 24-port models include two SFP ports, providing up to 1 Gbps uplinks.
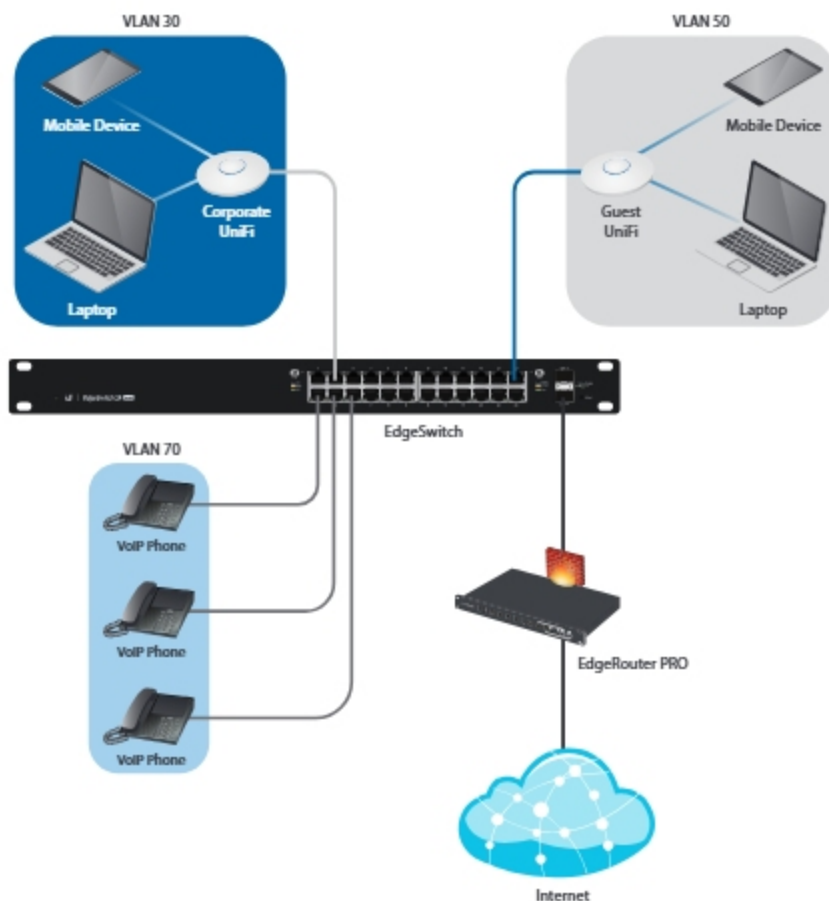
For high-capacity uplinks, the 48-port models include two SFP and two SFP+ ports, providing uplinks of up to 10 Gbps.

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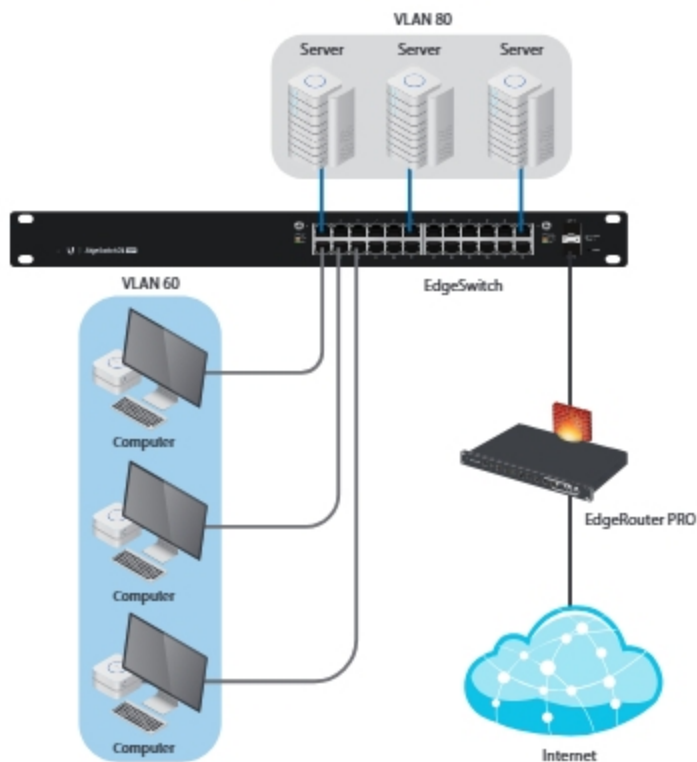
VLANs for Servers and Computers
*The EdgeSwitch connects to the Ubiquiti EdgeRouter™ PRO via an SFP uplink.*

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.
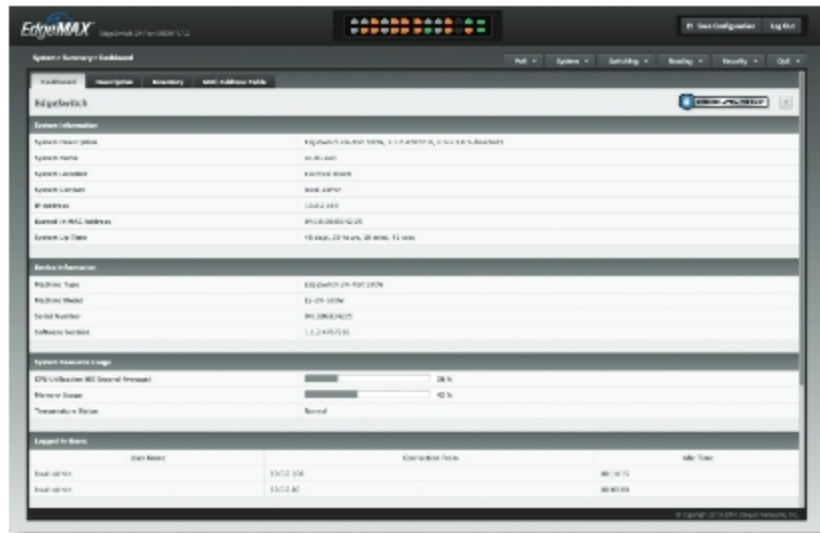
Powerful Functionality

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
- DHCP Server Functionality
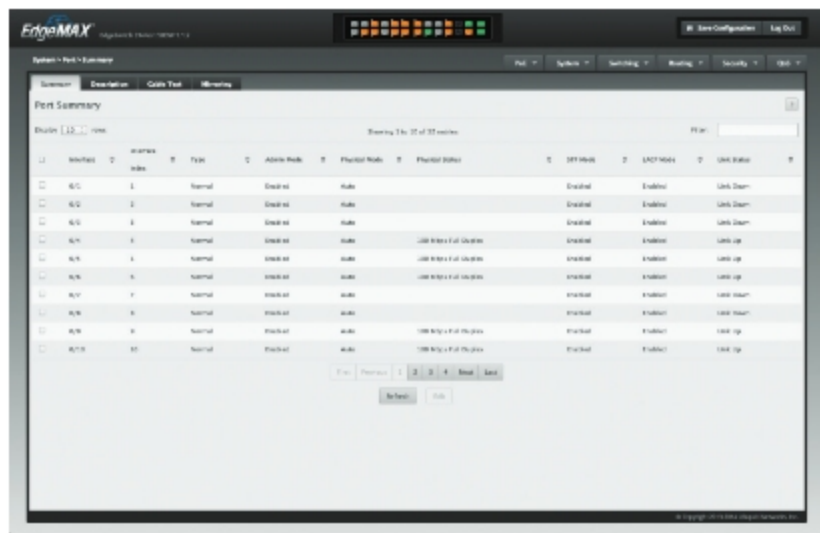
Models

*Edge*Switch®8 `150W`

Model: ES-8-150W

- (8) Gigabit RJ45 Ports
- (2) SFP Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 10 Gbps
- Switching Capacity: 20 Gbps
- Forwarding Rate: 14.88 Mpps
- Maximum Power Consumption: 150W
- Supports POE+ IEEE 802.3at/af and 24V Passive PoE
- Wallmountable with Mount Brackets (Included)
- Desktop-Mountable (Do not physically stack the ES-8-150W.)
- DC Input Option (Redundant or Stand-Alone)

*Edge*Switch®16 `150W`

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)

*Edge*Switch®24 `250W`

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

*Edge*Switch°24 `500W`

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

*Edge*Switch°48 `500W`

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

*Edge*Switch°48 `750W`

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

EdgeSwitch 8 150W

Hardware Specifications

ES-8-150W		
Dimensions		204 x 43 x 235 mm (8.03 x 1.69 x 9.25")
Weight	Without Mount Brackets	With Mount Brackets
	1.72 kg (3.79 lb)	1.8 kg (3.96 lb)
Total Non-Blocking Throughput		10 Gbps
Switching Capacity		20 Gbps
Forwarding Rate		14.88 Mpps
Max. Power Consumption	Includes PoE Output	Excludes PoE Output
	150W	20W
Power Method	AC	DC
	100-240VAC/50-60 Hz, AC/DC Integrated PSU, Universal Input	42 to 56VDC External, (Self-Correcting Polarity Protection) Terminal Block Input
Power Supply		AC/DC, Internal, 150W DC
LEDs Per Port	RJ45 Data Ports	SFP Data Ports
	PoE, Speed/Link/Activity	Speed/Link/Activity
Networking Interfaces		(8) 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
Wallmount		Yes
ESD/EMP Protection		Air: ±24 kV, Contact: ±24 kV

Operating Temperature	Internal AC/DC @ 150W	Internal AC/DC @ 100W	External DC
	-25 to 45° C (-13 to 113° F)	-25 to 55° C (-13 to 131° F)	-25 to 60° C (-13 to 140° 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°16 `150W`

Hardware Specifications

ES-16-150W		
Dimensions		443 x 43 x 221 mm (17.44 x 1.69 x 8.70")
Weight	Without Mount Brackets	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	Includes PoE Output	Excludes PoE Output
	150W	28W
Power Method		100-240VAC/50-60 Hz, Universal Input
Power Supply		AC/DC, Internal, 150W DC
LEDs Per Port	RJ45 Data Ports	SFP Data Ports
	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	
	Includes PoE Output	Excludes PoE Output	Includes PoE Output	Excludes PoE Output
	250W	30W	500W	30W
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	RJ45 Data Ports		SFP Data Ports	
	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	
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 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	
	Includes PoE Output	Excludes PoE Output	Includes PoE Output	Excludes PoE Output
	500W	64W	750W	64W
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	RJ45 Data Ports		SFP+/SFP Data Ports	
	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)			
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

EdgeMAX®

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 (G) • 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
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: 128
	  • Maximum Number of Leases (Total): 2048
	• Routing
	  • Number of Routes: 16
	  • Number of Routing Interfaces: 15
	• VLANs: 4093
	• MAC Addresses: 16,384
	• ARP Cache Size: 493
	• 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

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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