



EdgeSwitch™ 12 FIBER

Managed Gigabit Fiber Switch

Model: ES-12F

Non-Blocking Throughput Switching

High Performance and Low Latency

Gigabit Ethernet SFP and RJ45 Ports





Advanced Switching Technology for the Masses

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

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

Switching Performance

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

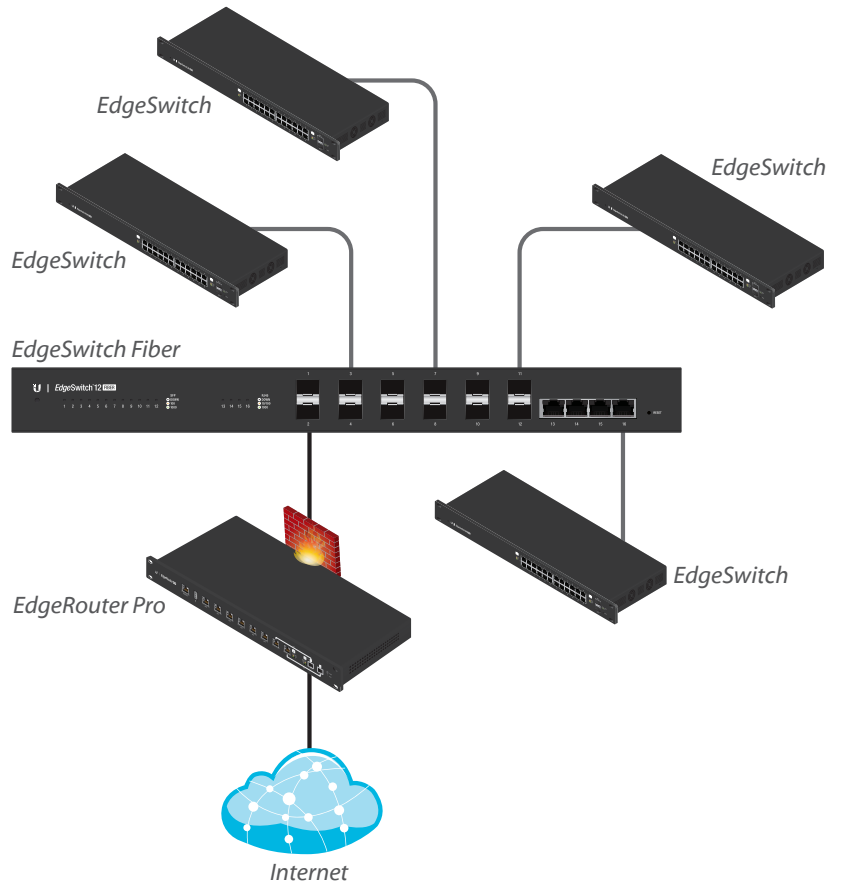
For its total, non-blocking throughput, the EdgeSwitch Fiber supports up to 16 Gbps.

Distribution Layer

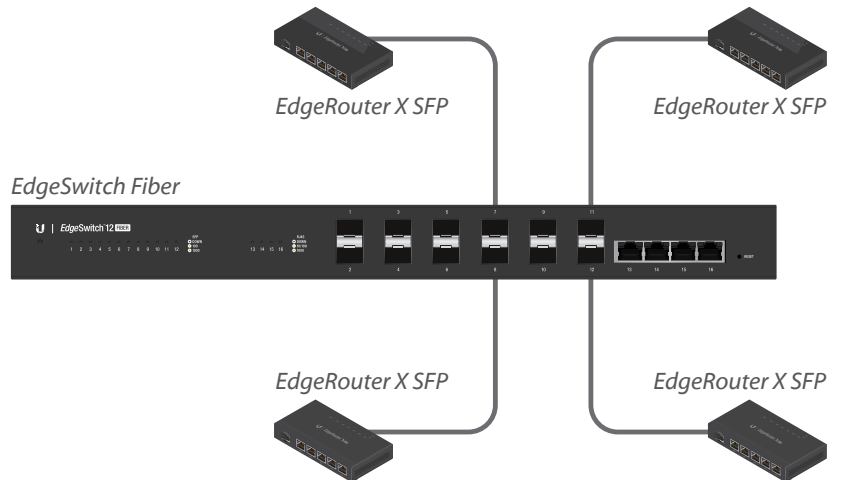
The EdgeSwitch Fiber offers high performance and low latency as an aggregation switch.

For fiber connectivity, it features 12 SFP ports, eight of which also support 100 Mbps. For copper connectivity, the EdgeSwitch Fiber offers four Gigabit RJ45 ports.

Deployment Examples



Multiple EdgeSwitches connect to the EdgeSwitch Fiber, which has an SFP uplink to the Ubiquiti® EdgeRouter™ Pro.

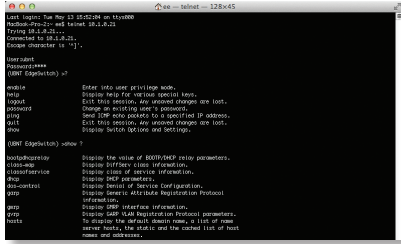


The EdgeSwitch Fiber connects multiple Ubiquiti EdgeRouter X SFP devices.

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.



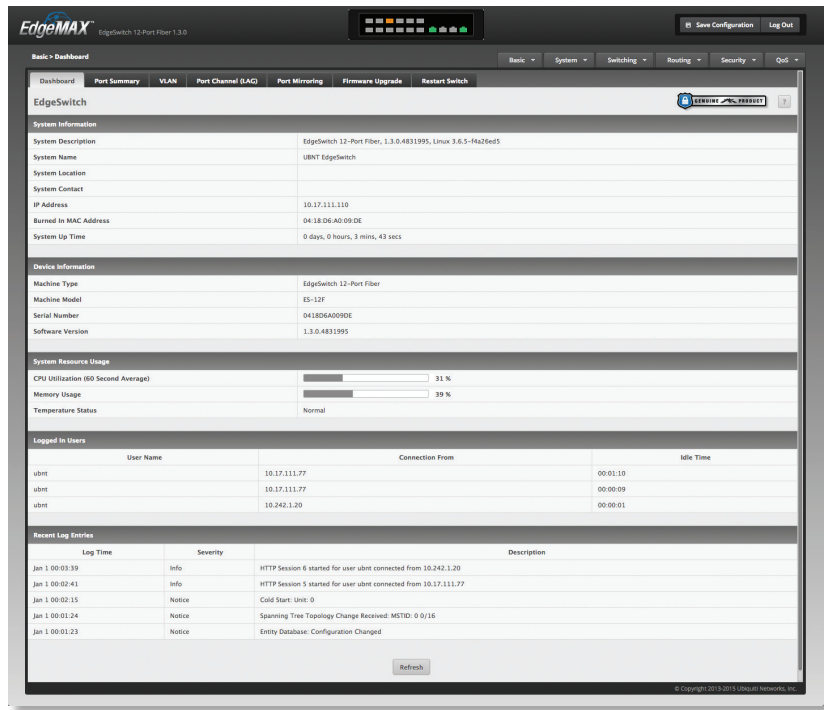
```
root@EdgeSwitch:~# telnet 10.17.111.75
Telnet session established.
root@EdgeSwitch:~# show system
System Information
-----
System Description: EdgeSwitch 12-Port Fiber, 1.3.0.4831995, Linux 3.6.5-14626e45
System Name: UBAT EdgeSwitch
System Location:
System Contact:
IP Address: 10.17.111.110
Burned In MAC Address: 04:18:DE:A0:09:DE
System Up Time: 0 days, 0 hours, 3 mins, 43 secs

Device Information
-----
Machine Type: EdgeSwitch 12-Port Fiber
Machine Model: ES-12F
Serial Number: 0418DEA090DE
Software Version: 1.3.0.4831995

System Resource Usage
-----
CPU Utilization (60 Second Average): 31%
Memory Usage: 39%
Temperature Status: Normal

Logged in Users
-----
User Name      Connection From      Idle Time
-----
ubnt           10.17.111.77        00:01:10
ubnt           10.17.111.77        00:00:09
ubnt           10.242.1.20         00:00:01

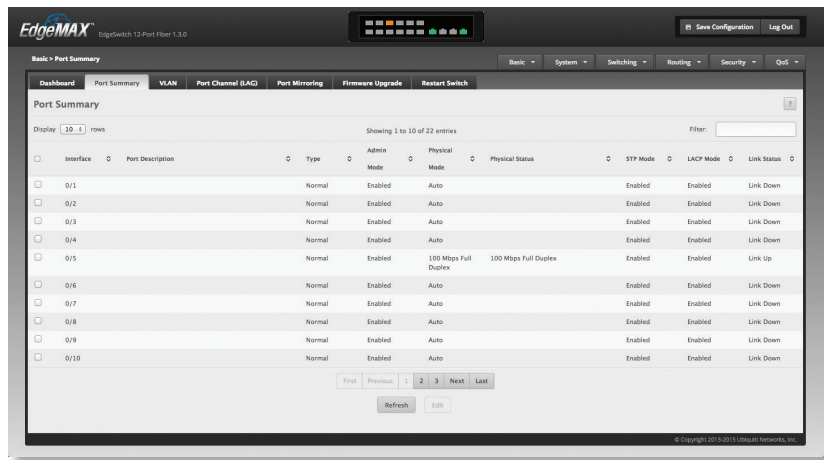
Recent Log Entries
-----
Log Time      Severity      Description
-----
Jan 1 00:03:39 info         HTTP Session 6 started for user ubnt connected from 10.242.1.20
Jan 1 00:02:41 info         HTTP Session 5 started for user ubnt connected from 10.17.111.77
Jan 1 00:02:15 notice        Cold Start: Unit: 0
Jan 1 00:01:04 notice        Spanning Tree Topology Change Received: MSTID: 0 / 0/16
Jan 1 00:01:23 notice        Entity Database: Configuration Changed
```



Powerful Functionality

The EdgeSwitch Fiber uses a sophisticated operating system that provides basic switching features 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

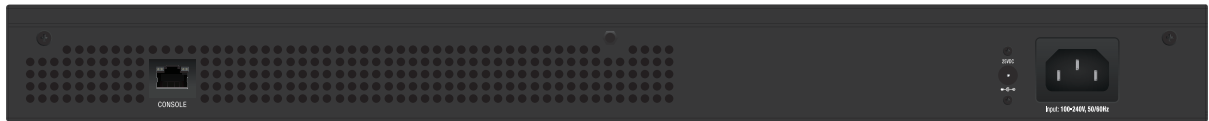
EdgeSwitch 12 Fiber

Model: ES-12F

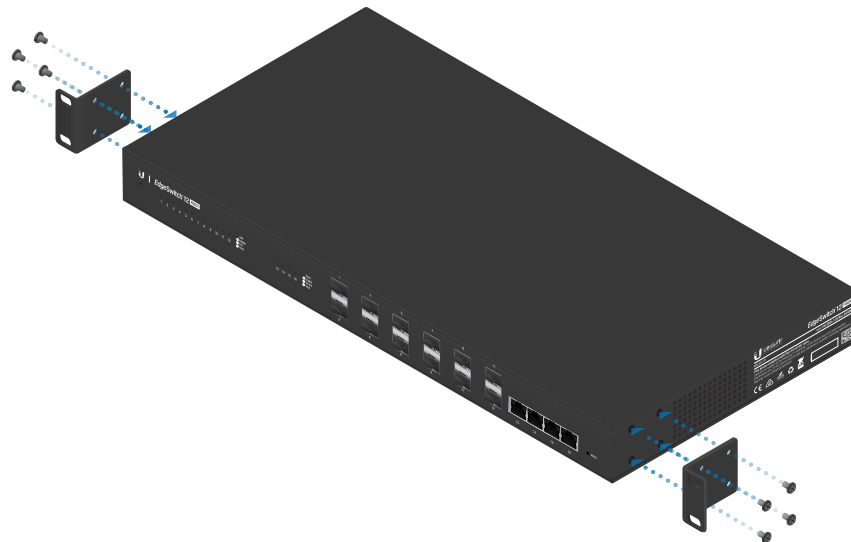
- (12) Gigabit SFP Ports
- (4) Gigabit RJ45 Ports
- (1) Serial Console Port
- Non-Blocking Throughput: 16 Gbps
- Switching Capacity: 32 Gbps
- Forwarding Rate: 23.81 Mpps
- Maximum AC Power Consumption: 56W
- Rackmountable with Rack-Mount Brackets (Included)
- DC Input Option (Redundant or Stand-Alone)



Front Panel



Back Panel



Attaching Rack-Mount Brackets to the EdgeSwitch Fiber

EdgeSwitch™ 12 FIBER

Hardware Specifications

ES-12F		
Dimensions	443 x 221 x 43 mm (17.44 x 8.70 x 1.69")	
Weight	Rack-Mount Brackets Included	Rack-Mount Brackets Excluded
	2.68 kg (5.91 lb)	2.59 kg (5.71 lb)
Enclosure Characteristics	SGCC Steel	
Total Non-Blocking Throughput	16 Gbps	
Switching Capacity	32 Gbps	
Forwarding Rate	23.81 Mpps	
Max. AC Power Consumption	56W	
Power Method	AC	DC
	100-240VAC/50-60 Hz, Universal Input	DC 56W, 25 to 16V, with 2.5 mm DC Power Inline Connector
Supported Voltage Range	100 to 240VAC	25 to 16VDC
Power Supply	AC/DC, Internal, 56W DC	
LEDs Per Data Port	Speed/Link/Activity	
Networking Interfaces	(8) 100/1000 Mbps SFP Ethernet Ports (4) 1000 Mbps SFP Ethernet Ports (4) 10/100/1000 Mbps RJ45 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	

Software Specifications

Software Information	
Core Switching Features	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • DHCP Server <ul style="list-style-type: none"> • Maximum Number of Pools: 8 • Maximum Number of Leases (Total): 128 • Routing <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Static Routing

Software Information

QoS	<ul style="list-style-type: none"> • Access Control Lists (ACLs), Permit/Deny Actions for Inbound IP and Layer 2 Traffic Classification Based on: <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Assign Flow to a Specific Class of Service (CoS) Queue • Redirect Matching Traffic Flows • Differentiated Services (DiffServ) <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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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