

ES3528MV2/ES3528MV2-DC

L2 Fast Ethernet Standalone Switches



Product Overview

The Edgecore ES3528MV2 and ES3528MV2-DC are Fast Ethernet Layer 2/4 switches featuring 28 ports; 24 100BASE-TX ports and 4 combination Gigabit Ethernet RJ-45/SFP (Small Form Factor Pluggable) ports. The switches are ideal for desktop Fast Ethernet connectivity and wiring closet installations with their fanless design for silent operation. Using IP Clustering for a virtual stack of up to 36 switches, the whole stack can be managed as a single entity with a single IP address. These switches are packed with features and are a cost-effective solution that brings continuous availability, enhanced security and advanced QoS to the network edge, while maintaining simplicity of management with optional DC power capability.

Key Features and Benefits

Performance and Scalability

With 12.8 Gbps switching capacity, the ES3528MV2 and ES3528MV2-DC deliver wire-speed switching performance on all Fast and Gigabit Ethernet ports, allowing users to take full advantage of existing high-performance PCs by significantly improving the responsiveness of applications and file transfer times.

There are four Gigabit Ethernet combination ports for uplink flexibility, allowing copper or fiber uplinks. The switch also supports digital diagnostic monitoring (DDM) for SFP transceivers.

Continuous Availability

IEEE 802.1w Rapid Spanning Tree Protocol provides a loop-free network and redundant links to the core network with rapid convergence, to ensure faster recovery from failed links, enhancing overall network stability and reliability.

IEEE 802.1s Multiple Spanning Tree Protocol runs STP per VLAN base, providing Layer 2 load sharing on redundant links.

IEEE 802.3ad Link Aggregation Control Protocol (LACP) increases bandwidth by automatically aggregating several physical links together as a logical trunk and providing load balancing and fault tolerance for uplink connections.

The ES3528MV2 and ES3528MV2-DC support G.8032 Ethernet Ring Protection Switching with the ability for the network to detect and recover from incidents without impacting users, meeting the most demanding quality and availability requirements. Rapid recovery time when problems do occur is as low as 50ms.

Comprehensive QoS

Eight egress queues per port enable differentiated management of up to eight traffic types. Traffic is prioritized according to 802.1p and DSCP, giving optimal performance to real-time applications such as voice and video.

Asymmetric bidirectional rate-limiting, per port or per traffic class, preserves network bandwidth and allows maximum control of network resources.

Enhanced Security

Port security allows access to switch ports based on MAC address, limits the total number of devices from using a switch port, and protects against MAC flooding attacks.

IEEE 802.1X port-based or MAC-based access control ensures all users are authorized before being granted access to the network. User authentication is carried out using any standard-based RADIUS server.

Access Control Lists (ACLs) can be used to restrict access to sensitive network resources by denying packets based on source and destination MAC addresses, IP addresses, or TCP/UDP ports. ACLs are hardware supported, so switching performance is not compromised.

Secure Shell (SSH) and Secure Sockets Layer (SSL/HTTPS) encrypts Telnet and web access to the switch, providing secure network management.

TACACS+/RADIUS authentication enables centralized control of the switch and prevents unauthorized users from altering the configuration of the switch.

Private VLANs isolate edge ports to ensure user privacy.

IGMP snooping prevents flooding of IP multicast traffic and limits bandwidth intensive video traffic to only the subscribers.

Service Monitoring and Management

The ES3528MV2 and ES3528MV2-DC support IEEE 802.1ag Connectivity Fault Management (CFM) and ITU-T Y.1731, allowing service providers to monitor end-to-end services, identify connectivity/performance issues, and isolate problems from a remote location without dispatching onsite service personnel.

Additionally, this provides the capability to monitor service availability, delay, jitter, and dropped packets, used to verify SLA conformance for billing purposes while providing advance indication of performance degradation before a service outage occurs.

Simple Management

An industry-standard command-line-interface (CLI), accessed through the console port or Telnet, provides a convenient way to configure and troubleshoot the switch. An embedded user-friendly web interface helps users quickly and simply configure the switch. Four-group RMON is supported to collect traffic statistics and run network diagnostics. The switch can also backup and restore firmware and configuration files via TFTP.

Fast Ethernet Standalone Switch

Features

Physical Ports

- 24 100BASE-TX ports
- 4 Combo Gigabit (RJ-45/SFP) ports
- 1 RS-232 DB-9 console port

Performance

- Switching Capability: 12.8 Gbps
- Packet Buffer Size: 8 Mb
- Memory: 128 MB
- Flash: 32 MB
- MAC Address Table: 16 K

L2 Features

- Flow Control:
 - IEEE 802.3x for full-duplex mode
 - Back-pressure for half-duplex mode
- Spanning Tree Protocol:
 - IEEE 802.1D Spanning Tree Protocol (STP)
 - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
 - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
 - Loop Back Detection
 - Spanning Tree Fast Forwarding
 - BPDU Guard
 - BPDU Filter
 - Root Guard
 - Auto Edge Port
- VLANs:
 - Supports 4K IEEE 802.1Q VLANs
 - Port-based VLANs
 - MAC-based VLANs
 - IP-based VLANs
 - Voice VLANs
 - IPv6 VLANs
 - IEEE 802.1v protocol-based VLANs
 - Private VLANs (community)
 - GVRP/GARP
 - VLAN trunking
 - Traffic segmentation
- Link Aggregation:
 - Static trunk
 - IEEE 802.3ad Link Aggregation Control Protocol
 - Trunk groups: 12, trunk links: 2~8
 - Balance over trunking port
- IGMP Snooping:
 - IGMP v1/v2/v3 Snooping
 - IGMP Querier
 - IGMP Filtering
 - IGMP Immediate Leave
 - IGMP Snooping Leave Proxy
 - IGMP v1/v2/v3 Proxy
 - IGMP Throttling
- MVR (Multicast VLAN Registration)
- Support Q-in-Q
- Support selective Q-in-Q
- G.8032 (ERPS)
- Non-STP loopback detection
- UDLD
- DDM
- Support for jumbo frames up to 10KB
- Storm control: Broadcast / multicast / unknown unicast

QoS Features

- Priority Queues: 8 hardware queues per port
- Traffic classification based on IEEE 802.1p CoS, IP, and DSCP
- Support WRR, Strict Priority and Hybrid mode
- Bandwidth Control:
 - Egress rate limiting: FE: 64K bits/sec ~ 100M bits/sec
 - GE: 64K bits/sec ~ 1000M bits/sec
 - Ingress rate limiting: FE: 64K bits/sec ~ 100M bits/sec
 - GE: 64K bits/sec ~ 1000M bits/sec
- Diffserv

Security

- Port Security
- IEEE 802.1X
 - Port-based authentication
 - MAC-based authentication
 - Supplicant support
 - Authenticator
 - VLAN assignment
 - QoS assignment
 - Guest VLAN
 - EAPOL frames pass-through
- RADIUS authentication
- RADIUS accounting
- TACACS+ authentication
- TACACS+ authorization
- TACACS+ accounting
- IP Source Guard
- Dynamic ARP Inspection
- Intrusion lock (link detection)
- MAC filter
- Access Control List
 - L2/L3/L4
 - Time-based
- SSH (v1.5/v2.0)
- HTTPS and SSL
- User Authentication
 - Local authentication
 - Remote authentication

IPv6 Features

- IPv4/IPv6 dual protocol stack
- IPv6 address type
 - Unicast
 - Multicast (internal used)
- ICMPv6
- ICMPv6 Redirect (host)
- IPv6 Path MTU Discovery
- IPv6 Neighbor Discovery
 - Router discovery
 - Duplicate address
 - Parameter discovery
 - Prefix discovery
 - Address resolution
 - Unreachable neighbor detection
- Stateless autoconfiguration
- Manual configuration
- SNMP over IPv6
- HTTP over IPv6
- SSH over IPv6
- IPv6 Telnet support
- IPv6 DNS resolver
- IPv6 Syslog support
- IPv6 SNTP support
- IPv6 TFTP support
- Remote IPv6 Ping
- Ping over IPv6
- Trace route over IPv6
- IPv6 sFlow
- DHCPv6
 - Client
 - Snooping
- MVR6
- IPv6 Source Guard
- RA Guard
- MLD Snooping v1/v2
- IPv6 ACL
- IPv6 DSCP

Features

OAM

IEEE 802.3ah Link
 IEEE 802.1ag Connectivity Fault Management
 ITU-T Y.1731 Performance and Throughput Management
 Complies with MEF 9 and 14 specifications

Management

Web-based management
 CLI-based management
 Telnet
 Client
 Server
 Software/configuration download/upgrade
 TFTP
 HTTP
 FTP
 Dual Images
 Auto Upgrade
 TFTP
 FTP
 SNMP
 v1
 v2c
 v3
 RMON
 RMON (groups 1, 2, 3, and 9)
 BOOTP
 Client
 DHCP
 Client
 Snooping
 Snooping Option 82
 Dynamic Provision (via Option 66, 67)
 IP source guard
 Port mirroring
 VLAN mirror
 MAC-based mirror
 ACL mirror
 Remote port mirror (RSPAN)
 Event/error logging
 Syslog (local flash)
 Remote log
 SMTP (e-mail notification)
 Remote Ping
 SNTPv4
 NTP
 IP Clustering
 LLDP (802.1ab)
 Link Layer Discovery Protocol (LLDP)
 LLDP-MED (VoIP related)
 MAC flush
 sFlow
 Dynamic ARP Inspection (DAI)
 Auto Traffic Control (ATC) (SW rate limit)
 Delay reload
 Cable Diagnostics /TDR

Mechanical

Dimensions (H x W x D): 4.3 x 44 x 17.1 cm (1.69 x 17.32 x 6.73 in. 1RU)
 LED Indicators: Port, Uplink, System, Diagnostic
 Weight: 2 kg (4.41 lb)
 Quiet fanless design

Maximum Current

ES3528MV2
 0.25 A @ 115 VAC
 0.12 A @ 230 VAC
 ES3528MV2-DC
 0.3 A @ -48 VDC

Environmental Specifications

Temperature:
 IEC 68-2-14
 0°C to 55°C (32 °F to 131 °F) standard operating
 -20°C to 70°C (-4 °F to 158 °F) non-operating
 Humidity: 5% to 95% non-condensing
 Vibration: IEC 68-2-36, IEC 68-2-6
 Shock: IEC 68-2-29
 Drop: IEC 68-2-32

IEEE Standards

IEEE 802.1D Spanning Tree Protocol and traffic priorities
 IEEE 802.1w Rapid Spanning Tree Protocol
 IEEE 802.1p priority tags
 IEEE 802.1Q VLAN
 IEEE 802.1v protocol-based VLANs
 IEEE 802.1x port authentication
 IEEE 802.3-2005
 Ethernet, Fast Ethernet, and Gigabit Ethernet
 Full-Duplex flow control
 Link Aggregation Control Protocol
 IEEE 802.3ac VLAN tagging

SNMP Standards

RFC 1493 Bridge MIB
 RFC 3289 Differentiated Service MIB
 RFC 2742 SNMP Agents MIB
 RFC 2096 Forwarding Table MIB
 RFC 2933 IGMP MIB
 RFC 2233 Interface Group MIB
 RFC 2668 MAU MIB
 RFC 1213 MIB II
 RFC 2621 RADIUS Authentication Client MIB
 RFC 2819 RMON MIB
 RFC 2021 RMON II Probe Configuration Group
 RFC 2011 SNMPv2 IP MIB
 RFC 3584 SNMP Community MIB
 RFC 3411 SNMP Framework MIB
 RFC 3412 SNMP-MPD MIB
 RFC 3413 SNMP Target MIB, SNMP Notification MIB
 RFC 3414 SNMP User-Based SM MIB
 RFC 3415 SNMP View Based ACM MIB
 RFC 2013 TCP MIB
 RFC 1215 Trap
 RFC 2012 UDP MIB
 RFC 2013 TCP MIB
 RFC 1541 DHCP Client
 RFC 1112 IGMP
 RFC 2236 IGMPv2
 RFC 2618 RADIUS
 RFC 1757 RMON
 RFC 1157 SNMP
 RFC 2571 SNMPv2
 RFC 2030 SNTP
 RFC 1350 TFTP
 TACACS Authentication Client MIB
 Private MIB
 Quality of Service MIB

Features

Electromagnetic Compatibility

CE Mark
FCC Class A
CISPR Class A

Safety

CSA/NRTL (UL1950, CSA 22.2.9.50)
TUV/GS (EN60950)

Warranty

Please check www.edge-core.com for the warranty terms in your country.

For More Information

To find out more about Edgecore Networks Corporation products and solutions, visit www.edge-core.com.

About Edgecore Networks Corporation

Edgecore Networks Corporation is in the business of providing innovative network solutions. In the service provider network, in the data center or in the cloud, Edgecore Networks Corporation delivers the software and systems that transform the way the world connects. Edgecore Networks Corporation serves customers and partners worldwide. Additional information can be found at www.edge-core.com.

Edgecore Networks Corporation is a subsidiary of Accton Technology Corporation, the leading network ODM company. The Edgecore Data Center switches are developed and manufactured by Accton.

To purchase Edgecore Networks solutions, please contact your Edgecore Networks Corporation representatives at +886 3 563 8888 (HQ) or +1 (949)-336-6801 or authorized resellers.

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Ordering Information

Optional Accessories	Product Description
ET3201-FXP	100BASE-FX, Small Form Factor Pluggable (Distance: 2 km; Wavelength:1310 nm)
ET3201-FX20	100BASE-FX, Small Form Factor Pluggable (Distance: 20 km; Wavelength:1310 nm)
ET4201-SX	1Gbps, Small Form Factor Pluggable (Distance: 500 m; Wavelength: 850nm)
ET4201-LX	1Gbps, Small Form Factor Pluggable (Distance: 10 km; Wavelength: 1310 nm)
ET4201-LHX	1Gbps, Small Form Factor Pluggable (Distance: 40 km; Wavelength: 1310 nm)
ET4201-ZX	1Gbps, Small Form Factor Pluggable (Distance: 80 km; Wavelength: 1550 nm)
ET4202-SX	1Gbps, Small Form Factor Pluggable (Distance: 550 m; Wavelength: 850 nm, DDM)
ET4202-LX	1Gbps, Small Form Factor Pluggable (Distance: 10 km; Wavelength: 1310nm, DDM)
ECView Pro	Network Management Software