Fast Ethernet Switch ES3528MV2-FLF-EC

***Firmware Version 1.5.1.4***

**INTRODUCTION:**

The ES3528MV2 is a cost effective managed L2/L4 Fast Ethernet Standalone Switch. ES3528MV2 contains 24 Ethernet/Fast Ethernet ports (1-24) and 4 Combo-Giga ports\* (25-28).

The base hardware is a 1U height, 19” rack mountable metal enclosure. The switch can be managed either by in-band management via the network station remotely or out-of-band management via the console port (RS232) locally. An imbedded Web agent also provides management capability to any computer on the network via common HTTP browsers such as Netscape Navigator (Version 6.2 or above) or Microsoft’s Internet Explorer (Version 5.0 or above).

Local Console Management (LCM) allows the user to monitor and configure the ES3528MV2 from a VT-type terminal. LCM can be used to configure features such as SNMP community names and access rights, Port Enable/Disable, firmware downloads, and Device IP address as well as most other parameters. LCM can also provide statistical and diagnostic information about the entire device or an individual port.

Management of the switch is password protected; the same password is used for LCM and for the Web browser interface. Prior to accessing the Management Module via a network connection, a valid IP address, subnet mask, and in some cases a default gateway must be configured using an out-of-band connection or the BootP/DHCP protocol. The management option provides SNMP, RMON (4 groups: 1,2,3,9), and Web management for system control and statistical monitoring.

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| **It is recommended that one thoroughly review this release notes prior to the installation or upgrade of this product.** |

**Firmware Specification:**

**Loader:**

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| --- | --- | --- | --- |
| **Status** | **Version No.** | **Type** | **Release Date** |
| Current Version | 1.0.6.0 | format release | 06/04/2014 |
| Current Version | 1.0.4.0 | format release | 02/19/2014 |
| Previous Version | 1.0.0.0 | format release | 01/18/2012 |

**Runtime:**

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| --- | --- | --- | --- |
| **Status** | **Version No.** | **Type** | **Release Date** |
| **Phase5** |  |  |  | |
| Test Version | 1.5.1.4 | For Test | 11/14/2014 | |
| Test Version | 1.5.1.3 | For NTC Test | 10/31/2014 | |
| Test Version | 1.5.1.2 | For NTC Test | 09/24/2014 | |
| Current Version | 1.5.0.0 | Formal release | 07/16/2014 | |
| Test Version | 1.4.9.2 | For NTC Test | 07/09/2014 | |
| Test Version | 1.4.9.1 | For NTC Test | 06/24/2014 | |
| Test Version | 1.4.9.0 | For NTC Test | 06/04/2014 | |
| **Phase4** |  |  |  | |
| Patch | 1.4.2.7 | Formal release | 05/30/2014 | |
| Patch | 1.4.2.6 | Formal release | 04/01/2014 | |
| Patch | 1.4.2.5 | Formal release | 03/21/2014 | |
| Formal release | 1.4.2.1 | Formal release | 01/24/2014 | |
| Failed Formal release | 1.4.2.0 | QA | 01/10/2014 | |
| Failed Formal release | 1.4.0.1 |  | 11/28/2013 | |
| Failed Formal release | 1.4.0.0 | QA | 10/9/2013 | |
| **Phase 3** |  |  |  | |
| Patch | 1.3.2.2 | Patch | 7/05/2013 | |
| Patch | 1.3.2.1 | Patch | 6/14/2013 | |
| Formal release | 1.3.2.0 | QA | 5/24/2013 | |
| **Phase 2** |  |  |  | |
| Patch | 1.2.0.7 | Patch | 3/29/2013 | |
| Patch (ECN) | 1.2.0.6 | Patch | 2/22/2013 | |
| Patch | 1.2.0.5 | Patch | 01/27/2013 | |
| Patch | 1.2.0.4 | Patch | 01/23/2013 | |
| Patch | 1.2.0.3 | Patch | 12/10/2012 | |
| Patch | 1.2.0.2 | Patch | 11/19/2012 | |
| Patch | 1.2.0.1 | Patch | 10/09/2012 | |
| Formal release | 2.0.0.0 | QA | 10/03/2012 | |
| **Phase 1** |  |  |  | |
| Patch | 1.0.0.1 | Patch | 06/22/2012 | |
| MP | 1.0.0.0 | QA | 01/18/2012 | |

**HARDware compatibility:**

ALL

**BootPROM compatibility:**

ALL

**SUPPORTED FUNCTIONALITY:**

Phase 3 new enhancements : IGMP authentication, DDM threshold alarm, SflowV5, DHCPSNP binding entry extend to 16, PVST filter, adding command “ip arp inspection validate dst-mac src-mac ip allow zeros, Modify default LLDP parameters tp be the same as ES3528MO.

Phase 2 new functions : MLD snooping, DHCPv6 (option37), IPv6 Source Guard, NDSNP.

| **Category** | **Feature** | **Support** | **Priority** |
| --- | --- | --- | --- |
| **Monitor Environment** | Power Status | Yes | RTS |
| Layer 2 Features |  | | |
| Link Aggregation | 802.3ad with LACP | Yes  1) Total 12 Trunks (including Cisco EtherChannel Like trunks  2) 2~8 port/trunk FE  3) 2 port/trunk GE | RTS |
| Cisco EtherChannel Linked | Yes  1) Total 12 Trunks (including Cisco EtherChannel Like trunks  2) 2~8 port/trunk FE  3) 2 port/trunk GE | RTS |
| Unicast / Multicast traffic Balance over Trunking port | Yes  1)Unicast : MAC SA/DA |  |
| VLAN | IEEE 802.1Q – Tag-based | Yes | RTS |
| IEEE 802.1Q – Port-based | Yes (4K VLANs) | RTS |
| IEEE 802.1Q – Mac-based | Yes | RTS |
| IEEE 802.1Q – IP-based | Yes |  |
| GVRP/GARP | Yes | RTS |
| 802.1v – Protocol | Yes |  |
| voice VLAN | Yes |  |
| Traffic Segmentation (Private VLAN Isolated) | YES |  |
| Private Vlan (Community) | YES |  |
| VLAN trunking | YES |  |
| IPv6 VLANs (one type which protocol vlan SUPPORTED) | Yes |  |
| **4K (4092) VLANs** | **YES** |  |
| Spanning Tree | IEEE 802.1D STP | Yes | RTS |
| IEEE 802.1s MSTP | Yes (32 instances) | RTS |
| IEEE 802.1w RSTP | Yes |  |
| Spanning Tree Fast Fording | Yes |  |
| Loop back detection | YES |  |
| Auto edge port | YES |  |
| BPDU filter/guard | YES |  |
| Root guard | YES |  |
| BroadCast Storm Control |  | YES ( bit/sec )  1) per port rate control  2) range: 64K bits/sec - 100M bits/sec  3) resolution: 64K bits/sec  4) No broadcast, B+M, B+M+DLF |  |
| IGMP Snooping | IGMP Snooping v1/v2 support | Yes (1k groups) |  |
| IGMP v1/v2 querier support | Yes |  |
| IGMP Immediate Leave | Yes |  |
| IGMP Filtering and throttling | Yes |  |
| IGMP snooping Leave Proxy | Yes |  |
| IGMP v1/v2/v3 Proxy | Yes |  |
| IGMP v3 snooping | Yes |  |
| MVR |  | Yes |  |
| Jumbo Frame | 10K (only supported in Giga) | Yes |  |
| QinQ |  | Yes |  |
| **Selective QinQ** |  | **Yes** |  |
| **EAPS** |  | **No** |  |
| **Auto MDI/MDIX** | **Auto** |  |  |
| **Types of GBIC and SFP support** | **LX,SX,LH,FX,CWDM-SFP** |  |  |
| **G.8032 (ERPS)** | **Yes** |  |  |
| **Non-STP loopback detection** | **Yes** |  |  |
| **UDLD** | **Yes** |  |  |
| **Digital Diagnostic Monitoring** | **Yes** |  |  |
| QoS Features |  | | |
| Number of priority queue |  | Yes (8 queues/port) | RTS |
| Scheduling for priority queue | WRR Priority scheduling | Yes (Shaped Deficit WRR) |  |
| Strict Priority scheduling | YES  Once Strict Priority is selected, WRR can not wor |  |
| Hybrid(WRR + Strict) Priority scheduling | Yes |  |
| COS | 802.1p based COS | Yes (per system) |  |
| IP TOS Precedence based COS | No |  |
| IP DSCP based COS | DSCP only (per system) |  |
| TCP/UDP Port based COS | No |  |
| Rate Limiting | Ingress | YES  1) Per Port-based  2) FE:  - 64K bits/sec ~ 100Mbits/sec  - Resolution 64K bits/sec  3) GE:  - 64K bits/sec ~ 1000Mbits/sec  - Resolution 64K bits/sec |  |
| Egress | YES  1) Per Port-based  2) FE:  - 64K bits/sec ~ 100Mbits/sec  - Resolution 64K bits/sec  3) GE:  - 64K bits/sec ~ 1000Mbits/sec  - Resolution 64K bits/sec |  |
| DiffServ | 1 rate 3 colors | Yes |  |
| 2 rate 3 colors | Yes |  |
| Ingress and egress | Yes |  |
| Security Features |  | | |
| Static/Dynami Pcort Security (MAC-based) |  | YES  1) Per system: Total 1024 MAC  2) Auto-learned support | RTS |
| 802.1x | Port-Based Authentication | YES  1) Support Single host mode  2) Single host mode:  - Per port 1 MAC |  |
| Poer-Based | Yes |  |
| MAC-based Authentication | YES (Phase 3) |  |
| **Supplicant Support** | **Yes**  1) support Win XP  2) support Win 2000 w/ SP4  3) support Win 95/98 w/ AEGIS |  |
| **Supplicator** | **Yes** |  |
| VLAN assignment | Yes |  |
| Guest VLAN | Yes |  |
| QoS assignment (w/o ACL profile) | YES |  |
| EAPOL frames pass-through | YES |  |
| QoS assignment w/ ACL profile | YES |  |
| ACL | Number of rules | 512 (both standard and extended mode are supported)  Plase 2 will extend to 1K. |  |
| L2/L3/L4 | YES  1) L2 SA/DA MAC, VLAN based  2) L3 IP SA/DA, subnet based  3) L4 TCP/UDP port 4) IPv6 |  |
| **Time-Based** | **Yes** |  |
| **Mirror** | **Yes** |  |
| **Ingress** | **Yes** |  |
| **Egress** | **Yes** |  |
| **Statistics** | **Yes (Only permit ACE could be showed, deny ACE can’t be showed because of chipset limitation)** |  |
| RADIUS authentication |  | YES  1) Encryption: MD5  2) Multiple RADIUS Server: 5 servers |  |
| RADIUS authorization and accounting |  | Yes |  |
| TACACS+ authentication |  | YES  1) Encryption: MD5  2) Single Server |  |
| TACACS+ authorization and accounting |  | Yes |  |
| TACACS+ 3.0 |  | No |  |
| MAC Based authentication |  | YES |  |
| HTTPS and SSL (Secured Web) |  | YES |  |
| SSH V1/V2.0 (Secured Telnet session) |  | YES |  |
| User name password  authentication | Local authentication | YES |  |
| Remote authentication via RADIUS/TACACS+ | YES |  |
| Management Interface  Access Filtering | SNMP | Yes |  |
| WEB | Yes |  |
| Telnet | Yes |  |
| Instruction lock (link detection) |  | YES |  |
| MAC filter |  | YES |  |
| Management Features |  | | |
| Cisco Like CLI |  | Yes | RTS |
| Terminal Setting |  | Yes |  |
| CLI Filtering |  | No |  |
| Multiple Management IP Interface |  | Yes |  |
| Web Based Management |  | Yes | RTS |
| Telnet Clinet |  | Yes | RTS |
| Telnet server |  | Yes |  |
| Software Download | TFTP | Yes (opcode/loader,) | RTS |
| Xmodem | Yes | RTS |
| Diag support TFTP download | No |  |
| FTP | YES |  |
| HTTP | YES |  |
| Auto Upgrade | TFTP | YES |  |
| Auto Upgrade | FTP | YES |  |
| Dual Image |  | Yes | RTS |
| Configuration Download | TFTP | Yes (multiple copies) | RTS |
| MIB I/II | RFC1213 | Yes |  |
| SNMP | V1 | Yes  1) 5 SNMP community string  2) 5 trap receivers | RTS |
| V2c | Yes  1) 5 SNMP community string  2) 5 trap receivers | RTS |
| V3 | Yes | RTS |
| RMON | RMON1(1,2,3,9 group) | Yes | RTS |
|  | RMON2 | Yes |  |
| BOOTP | Client | Yes | RTS |
| Relay | No | RTS |
| DHCP | Client | Yes | RTS |
| Relay | No (Phase 2) | RTS |
| Snooping | Yes | RTS |
| Snooping option 82 | Yes | RTS |
| Server | No | RTS |
| dynamic provision (option 66,67) | YES |  |
| **Option 82** | **YES** |  |
|  | **Relay option 82** | **Yes** |  |
| IP Source Guard |  | Yes | RTS |
| Remote Port Mirror (RSPAN) |  | Yes |  |
| Port Mirroring |  | Yes (1Dst to manySrc mirroring) | RTS |
| Event/Error Log | Local Flash | Yes  1) 512 entries  2) 256Kbyte Flash | RTS |
| Remote server via System Log (RFC 3164) | Yes  1) Cisco-like  2) Support up to 5 servers | RTS |
| SMTP | Yes | RTS |
| DNS | Client | No | RTS |
| Proxy | No | RTS |
| OAM | IEEE 802.3ah | Yes |  |
|  | IEEE 802.1ag | Yes |  |
|  | Activate/Deactivate EFM OAM per port | Yes |  |
|  | Y.1731 | Yes |  |
| Remote Ping |  | Yes | RTS |
| SNTPV4(RFC2030) |  | Yes | RTS |
| NTP |  | Yes |  |
| IP Clustering |  | Yes (36 members) | RTS |
| LLDP(802.1ab) | Link Layer Discovery Protocol | Yes |  |
|  | LLDP-MED (VoIP related) | Yes |  |
|  | IEEE 802.3at | No |  |
| UPnP |  | Yes |  |
| Mac Flush |  | Yes |  |
| sFlow |  | YES |  |
| Dynamic ARP inspection (DAI) |  | YES |  |
| Auto Traffic Control (ATC) |  | Yes |  |
| PPPoE Intermediate Agent |  |  |  |
| VLAN mirror |  | YES |  |
| MAC based mirror |  | YES |  |
| ACL Mirror |  | YES |  |
| Delay reload |  | YES |  |
| CLI “show debug” |  | No |  |
| CLI “show tech” |  | YES |  |
| CLI “show interfaces brief” |  | YES |  |
| IPV6 Management (Telnet Service/ICMP V6) |  |  |  |
| Cable Diagnostics /TDR |  | YES |  |
| Green Ethernet |  | Yes (Combo ports only) |  |
| Port Utilization (kbits/sec, Pkts/sec, % Util in recent 300secs) |  | YES |  |
| IPV6 Features |  |  |  |
| IPV6/IPV4 dual protocol stack |  |  |  |
| IPV6 Address Type | Unitcast |  |  |
|  | Multicast | This is only used internally ,not configurable |  |
| ICMPV6 |  | Yes |  |
| ICMPV6 Redirect (host) |  | Yes |  |
| IPV6 Path MTU Discovery |  | Yes |  |
|  | Router Discovery | YES |  |
| IPV6 Neighor Discovery | Duplicated Address Detection | YES |  |
|  | Static Cache Entry | No |  |
|  | Parameter Discovery | Yes |  |
|  | Prefix Discovery | YES |  |
|  | Address Resolution | YES |  |
|  | Unreachable Neighbor Detection | YES |  |
|  | Redirect (Host) | YES |  |
|  | Snooping | No |  |
| Statless Autoconfiguration |  | Yes |  |
| Manual Configuration |  | Yes |  |
| Generic Prefix |  | No |  |
| SMNP over IPV6 |  | Yes |  |
| HTTP over IPV6 |  | Yes |  |
| SSH over IPV6 |  | Yes |  |
| IPV6 Telnet Support |  | Yes |  |
| IPV6 DNS Resolver |  | Yes |  |
| IPV6 RADIUS Support |  | No |  |
| IPV6 TACACS+ Support |  | No |  |
| IPV6 Syslog Support |  | Yes |  |
| IPV6 SNTP Support |  | Yes |  |
| IPV6 SMTP Support |  | No |  |
| IPV6 TFTP Support |  | Yes |  |
| Remote IPV6 Ping |  | Yes |  |
| IPV6 sFlow |  | Yes |  |
|  | Client | Yes |  |
|  | Server | NO |  |
|  | Relay | NO |  |
| DHCP6 | Snooping | Yes |  |
| MVR6 |  | Yes |  |
| IP6 Souce Gurad |  | Yes |  |
| RA Guard |  | Yes |  |
| MLD Snooping |  | Yes |  |
| IPV6 Features |  | Yes |  |
| IPV6 QoS |  |  |  |
| IPV6 DSCP remapping Cos |  | Yes |  |
| Security Feature |  |  |  |
| IPV6 ACL |  | Yes |  |

**Installation and Configuration Notes:**

In general, the ES3528MV2 **Switch** will be shipped to you pre-configured with this version of firmware. If you would like to upgrade an existing ES3528MV2 **Switch,** please follow the TFTP download instructions that are included with your firmware image upgrade kit.

To download new firmware form a TFTP server, enter the IP address of the TFTP server, select “opcode” as the file type, then enter the source and destination file names. When the file has finished downloading, set the new file to start up the system, and then restart the switch. To start the new firmware, enter the “reload” command or reboot the system.

**CLI commands:**

Console#*copy tftp file*

TFTP server IP address: *192.168.1.23*

Choose file type:

1. config: 2. opcode: <1,2>: *2*

Source file name: *opcode.bix*

Destination file name: *opcode.bix*

\Write to flash programming.

Programming flash started.

Success.

Console#*config*

Console(config)#*boot system opcode:opcode.bix*

Console(config)#*exit*

Console#*reload*

**Firmware Changes and Enhancements:**

**The following Known Issues have been fixed in this release of firmware.**

**LOADER CODE modifications:**

**Loader V1.0.6.0**

|  |  |
| --- | --- |
| ECS3510-28T-00380 | Enhancement : change bootrom password |
| ECS3510-28T-00416 | inject the packets when bootup will cause discard issue |

**Loader V1.0.4.0**

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| .ECS3510-28T-00253 | Loader: backdoor passwd doesn't be encrypted |

**Loader V1.0.0.0**

|  |  |
| --- | --- |
| Loader | The 1st formal version |

**Runtime CODE modifications:**

**Runtime V1.5.1.4**

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| --- | --- |
| ES3510MA-FLF-38-00865 | ipv6 does not work with trunk port issue |

**Runtime V1.5.1.3**

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| --- | --- |
| ES3528MV2-FLF-EC-00548 | MVR:It display error msg in CLI and source port didn't receive all traffic when a port move from a domain MVR VLAN to another. |
| ES3528MV2-FLF-EC-00576 | IGMPSnooping:DUT can't forward unknow multicast data to mrouter port. |
| ES3528MV2-FLF-EC-00577 | IPSG: IPSG max-binding and static-mac didn't set via MIB because MIB file didn't have these node. |
| ES3528MV2-FLF-EC-00578 | IPSG: It display WEB\_GROUP task in CLI when binding filter source set static via web |
| ES3528MV2-FLF-EC-00579 | IPSG: It display incorrectly via WEB when setting IP address of static ACL binding. |
| ES3528MV2-FLF-EC-00582 | PortHistoryCounter: The Discard Input packets did not be counted. |
| ES3528MV2-FLF-EC-00584 | IPSG: On Web, select Binding Filter Source "All" or "Static" and click "Apply" button, DUT will occur crash.. |
| ES3528MV2-FLF-EC-00586 | IPSG: The static binding entry did not be deleted on Web. |
| ES3528MV2-FLF-EC-00587 | WEB:It didn't display any information for CPU utilization task via WEB |
| ES3528MV2-FLF-EC-00588 | CPUGuard: CPU guard shall be able to set via WEB |
| ES3528MV2-FLF-EC-00589 | IPSG: On Web, click the "Revert" button, the Static Binding List will add entries. |
| ES3528MV2-FLF-EC-00590 | IPSG: The Static Binding List of MAC table is over to maximum set. |
| ES3528MV2-FLF-EC-00591 | CPUGuard:It shall display log when enable CPU guard and disable CPU guard trap. |
| ES3528MV2-FLF-EC-00592 | CPUGuard:DUT didn't save to keep high watermark setting after rebooting. |

**Runtime V1.5.1.2**

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| --- | --- |
| ES3528MV2-FLF-EC-00545 | IPv6-RemotePing:The default value of the ping6 size shall be 32, not 0. |
| ES3528MV2-FLF-EC-00511 | TC Propagate Stop:DUT doesn't provide spanning-tree tc-prop-stop parameter on web. |
| ES3528MV2-FLF-EC-00564 | [Enhancement] Port security auto-save |
| ES3528MV2-FLF-EC-00574 | [Enhancement] After provision completed, auto upgrade shall be performed once |
| ES3528MV2-FLF-EC-00571 | CPUGuard:It didn't set CPU guard parameters via CLI. |
| ES3528MV2-FLF-EC-00551 | MIB:DUT shall support to set and display MAC-learning for VLAN by MIB |
| ES3528MV2-FLF-EC-00576 | IGMPSnooping:DUT can't forward unknow multicast data to mrouter port. |
| ES3528MV2-FLF-EC-00543 | Support DHCPSNP works with MAC NAT topology |
| ES3528MV2-FLF-EC-00562 | PortHistory: The packets of Discards did not be counted. |
| ES3528MV2-FLF-EC-00548 | MVR:It display error msg in CLI and source port didn't receive all traffic when a port move from a domain MVR VLAN to another |
| ES3528MV2-FLF-EC-00572 | Packet lost: It has packet lost issue on test equipment is amplifier with CobraNet technique . (Audio over Ethernet) |

**Runtime V1.5.0.0**

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| ES3528MV2-FLF-EC-00567 | DHCPDynamicProvision:DUT wll hang up after booting configuration file. |
| ES3528MV2-FLF-EC-00303 | CLI: IPv6 shall not has Capital V and become IPV6. (It is enhancement) |

**Runtime V1.4.9.2**

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| ECS3510-28T-00469 | [Enhancement]CPU guard |
| ECS3510-28T-00475 | Syslog: to support save logfile in TLV format. |
| ECS3510-28T-00368 | QinQ: the switch dosen't change priority when set "sw priority default " on the access port |
| ES3528MV2-FLF-EC-00554 | WEB/interface:the column of port list shall align with other columns, shall not overlap. | |
| ES3528MV2-FLF-EC-00553 | WEB/ATC:the column action of ATC shall align with other columns, shall not overlap. | |
| ES3528MV2-FLF-EC-00533 | ATC: The item describe display is not in one line. | |
| ES3528MV2-FLF-EC-00532 | ATC: The Auto Traffic Control Broadcast List panel display is not align. | |
| ES3528MV2-FLF-EC-00531 | Interface: The port list panel display is not align. | |
| ES3528MV2-FLF-EC-00535 | DHCP SNP: On Web, the "Lease Time (seconds)" in binding table position is not in a line. | |
| ES3528MV2-FLF-EC-00534 | DHCP SNP: On Chrome v35.0.1916.114 m, the "DHCP Snooping Information Option Sub-option Format" display is not in a line. | |
| ES3528MV2-FLF-EC-00537 | DHCP Relay: The text box of the Server IP Address position is wrong. | |
| ES3528MV2-FLF-EC-00546 | LoaderPasswd:It shall display "Password is changed successfully." when DUT succeed to change loader password. | |
| ES3528MV2-FLF-EC-00561 | CLI/MVR:DUT didn't remove it when using no mvr type source/receiver. | |
| ES3528MV2-FLF-EC-00547 | MVR:ONLY the source port of domain 1 could received traffic data when source port mode is "Always Forward". | |
| ES3528MV2-FLF-EC-00559 | ARP: The "Configure General" did not display anything on Web. | |

**Runtime V1.4.9.1**

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| ECS3510-28T-00432 | [New command] "switchport allowed vlan vlan-list" |
| ECS3510-28T-00422 | Enhancement: Create a switch to separate the IPSG binding table form DHCP snooping binding table. |
| ES3528MV2-FLF-EC-00530 | switch generate TC when discoonect the device from oper edge port | |
| ES3528MV2-FLF-EC-00337 | MLDSNP: Total entry counter shall not be increased when the group table is full and add static group. | |
| ES3528MV2-FLF-EC-00133 | corrections to spelling/grammar - Administration > SNMP (Show Statistics) | |
| ES3528MV2-FLF-EC-00084 | Security > Port Authentication (Configure Global) - corrections to spelling/grammar | |
| ES3528MV2-FLF-EC-00089 | show qos map phb-queue interface - corrections to spelling/grammar | |
| ES3528MV2-FLF-EC-00563 | [Enhancement] Customer requires a switch for dynamic provision. | |
| ES3528MV2-FLF-EC-00539 | MAC address can not aging out | |
| ES3528MV2-FLF-EC-00542 | PortHistory: After click "delete" button, the entry did not be deleted on Web. | |
| ES3528MV2-FLF-EC-00544 | Trunk: The packets did not forward between Trunks. | |

**Runtime V1.4.9.0**

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| ECS3510-28T-00418 | [enhacement] support DCHP Option 12 |
| ECS3510-28T-00417 | [enhancement] Support dhcp relay relay hops as like DLINK switch |
| ECS3510-28T-00423 | [enhacement] Change MVR Source Port Mode Dynamic as default |
| ECS3510-28T-00389 | [web enhancement] support switching pps and kbps | |
| ECS3510-28T-00424 | [enhancement] show snmp community string with \* during provisioning when the user press P |
| ECS3510-28T-00406 | Enhancement: MAC learning disable per VLAN |
| ECS3510-28T-00429 | Enhancement: Add squashfs compress function for runtime image |
| ECS3510-28T-00419 | [enhancement] WEB/SNMP staPortBpduGuard Status on Port |
| ECS3510-28T-00427 | Enhancement: add history counter |
| ECS3510-28T-00362 | ECS3510-28T network-access port-mac-filter works incorrectly with port security |
| ES3528MV2-FLF-EC-00502 | VLAN: PVID can be set on VLAN which a port does not join; a new command can set VLAN membership directly without add/remove. |
| ES3528MV2-FLF-EC-00526 | RMON oversize packets counter display problem |
| ES3528MV2-FLF-EC-00085 | Security > DoS Protection - corrections to spelling/grammar |
| ES3528MV2-FLF-EC-00283 | IP Ping : WEB UI information shall be modified |
| ES3528MV2-FLF-EC-00525 | [Enhancement] add MAC address of TC sender to log |
| ES3528MV2-FLF-EC-00527 | Enhancement Per process cpu usage monitoring |
| ES3528MV2-FLF-EC-00383 | error messages and hanging problem(egress ACL) |
| ES3528MV2-FLF-EC-00488 | ES3528MV2 WEB Port General Banner miss issue |
| ES3528MV2-FLF-EC-00256 | If a port within a port channel, “show dot1x” will got failed information about this port. |
| ES3528MV2-FLF-EC-00252 | have no way to set admin-key 4 for port-channel |
| ES3528MV2-FLF-EC-00498 | support clear log ram/flash on web interface |
| ES3528MV2-FLF-EC-00503 | lost management because of injecting IGMP packet. |
| ES3528MV2-FLF-EC-00505 | control packets priority adjustment |
| ES3528MV2-FLF-EC-00516 | Web: The power status description did not match. |
| ES3528MV2-FLF-EC-00522 | Enable DHCPSNP will drop DHCP packets with fragment flag = 1 |
| ES3528MV2-FLF-EC-00489 | IPv6 Source Guard:there's no IPv6 Source Guard page on help page. |
| ES3528MV2-FLF-EC-00288 | Telnet: Default silent time configure is not the same between Help page and Web UI. |
| ES3528MV2-FLF-EC-00286 | Help Page: Packet size of Ping is not clear. |
| ES3528MV2-FLF-EC-00485 | [Help page]IP Subnet: Information of VLAN ID range is incorrect on help page(VLAN > IP Subnet). |
| ES3528MV2-FLF-EC-00484 | Help Page: "DHCP Client" did not described on help page. |
| ES3528MV2-FLF-EC-00483 | Help:Several mvr help page information are not correct. |
| ES3528MV2-FLF-EC-00482 | Help:Several igmp snooping help page information are not correct. |
| ES3528MV2-FLF-EC-00481 | [Help page]VLAN: Information of VLAN ID range is incorrect on help page. |
| ES3528MV2-FLF-EC-00467 | [Help] DUT did not support "Static DHCP SNP" , so it shall be removed from Help page. |
| ES3528MV2-FLF-EC-00457 | IGMP Snooping:Forwarding Priority on help page range incorrect |
| ES3528MV2-FLF-EC-00476 | WEB Help [ ARP Inspection ]: There is No descripton about " Allow Zeros " |
| ES3528MV2-FLF-EC-00307 | WEB Help page : There is no description information about ATC function |
| ES3528MV2-FLF-EC-00314 | ERPS Help:It shall describe all information of ERPSv1 and ERPSv2 in help page. |
| ES3528MV2-FLF-EC-00326 | DHCP Snooping:On help page,the route of dhcp snooping is not correct. |
| ES3528MV2-FLF-EC-00333 | Diffserv:The range of CIR between web and help page is different. |
| ES3528MV2-FLF-EC-00336 | MACBaseAuth : Max MAC Count WEB UI Inofrmation Not match the Help Page |
| ES3528MV2-FLF-EC-00296 | IPv6AddrConfig:Default DAD attempts is not the same between UI and Help page. |
| ES3528MV2-FLF-EC-00342 | Snmpwalk cause CPU High |
| ES3528MV2-FLF-EC-00234 | CLI: the help message of TACACS service is incorrect |
| ES3528MV2-FLF-EC-00231 | WEB: The "Clear Counter " button shoud be in the "Show Hardware Counter" page. |
| ES3528MV2-FLF-EC-00227 | CLI: ACL counter can't enabled via the CLI. |
| ES3528MV2-FLF-EC-00238 | Web: ACL clear hardware counter and hardware counter page need to be modified |
| ES3528MV2-FLF-EC-00468 | CLI:During reboot, CLI will show "ES3528MV2-FLF-38". |
| ES3528MV2-FLF-EC-00500 | show system - system oid string has error |
| ES3528MV2-FLF-EC-00501 | System > General -> System Object ID -> missing first digit |
| ES3528MV2-FLF-EC-00528 | [web freezed] to apply IPSG static entry via web, it causes web freeze and cpu 100% |
| ES3528MV2-FLF-EC-00521 | edit error in config file manually and copy to startup-config will reset switch to factory default |
| ES3528MV2-FLF-EC-00514 | ES3528Mv2 with ARP/DHCP flooding about 500 pps, CPU will rise to 100% |
| ES3528MV2-FLF-EC-00272 | Cos: trust mode of Cos Description is incorrect. |
| ES3528MV2-FLF-EC-00441 | ATC should be able to enable both Brodcast and Multicast should be enabled at the same time |
| ES3528MV2-FLF-EC-00456 | ATC CLI upper and lower ingress rate range setting disagrees with WebUI settings |
| ES3528MV2-FLF-EC-00415 | change from kbps to pps for storm control |

**Runtime V1.4.2.7**

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| --- | --- | --- |
| ECS3510-28T-00369 | Create network-access port-mac-filter by SNMP | |
| ECS3510-28T-00412 | DHCP rely function have different behavior between ECS3510-28T and ES3528M |
| ES3528MV2-FLF-EC-00499 | queue mode WRR is always shown on web interface |
| ES3528MV2-FLF-EC-00497 | ES3528Mv2 MIB doesn't support "egress" ACL |
| ES3510MA-FLF-38-00766 | management interface sends dhcp request with wrong format for renew IP address |
| ES3510MA-FLF-38-00776 | diffServPortPolicyMapIndex can be written well but while reading always returns value “0” |
| ES3510MA-FLF-38-00779 | ES3510MA MVR by port SNMP bug |

**Runtime V1.4.2.6**

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| --- | --- |
| ES3510MA-FLF-38-00785 | ES3510MA v1.4.2.1\_sd IPv6 dhcp client can't obtian ip address after port move |
| ES3510MA-FLF-38-00783 | switch forward solicit packet with check sum error |
| ECS3510-28T-00386 | Enhancement: CPU protection to prevent management loss by heavy traffic attack |
| ECS3510-28T-00398 | When DHCP snooping enable, IPSG static binding doesn’t work. |
| ECS3510-28T-00402 | Dhcp snooping will drop DHCP ack packet which fragment flag = 1. |
| ECS3510-28T-00404 | When enable IP source guard, IPSG will block ARP packet. |

**Runtime V1.4.2.5; Loader 1.0.0.0 (Diag 1.0.0.2 )**

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| ES3528MV2-FLF-EC-00517 | doesn't display active copper links via Web-interface. |
| ES3528MV2-FLF-EC-00518 | OSPF/RIP/VRRP packets cannot go through while IGMP or MVR is enabled |
| ES3528MV2-FLF-EC-00507 | MVR display problem via Web page |
| ES3528MV2-FLF-EC-00519 | DHCP relay option 82 doesn't work |

**Runtime V1.4.2.1 ; Loader 1.0.0.0 (Diag 1.0.0.2 )**

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| --- | --- |
| ES3528MV2-FLF-EC-00512 | [Enhancemnet] support clear log ram/flash on web |

**Runtime V1.4.2.0 ; Loader 1.0.0.0 (Diag 1.0.0.2 )**

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| ES3528MV2-FLF-EC-00513 | [enhancemnet] add timezone with the same command like ES3528MO |
| ES3528MV2-FLF-EC-00515 | CLI command "Show interface transceiver" fails after the SFP has been inserted |
| ES3528MV2-FLF-EC-00493 | show mac-addres-table address "Cx-xx-xx-xx-xx-xx" will run command show mac-addres-table count |

**Runtime V1.4.0.1 ; Loader 1.0.0.0 (Diag 1.0.0.2 )**

**Need to build new version of loader for the fix of ES3528MV2-FLF-EC-00284 to work on the device.**

|  |  |
| --- | --- |
| ES3528MV2-FLF-EC-00287 | SSH:Remote IPv6 link-local addr of user information format is incorrect. |
| ES3528MV2-FLF-EC-00346 | Web: Vlan>MAC-Based Should be able to modify mac mask on web |
| ES3528MV2-FLF-EC-00464 | DHCP SNP: DHCP SNP limit rate did not supported on Web. |
| ES3528MV2-FLF-EC-00477 | WEB port pannel:The light for port1~24 were always dark even some port is link |
| ES3528MV2-FLF-EC-00494 | No definition(trap 209 and 211)on mib file |

**Runtime V1.4.0.0 ; Loader 1.0.0.0 (Diag 1.0.0.2 )**

**Need to build new version of loader for the fix of ES3528MV2-FLF-EC-00284 to work on the device.**

|  |  |
| --- | --- |
| ES3528MV2-FLF-EC-00284 | CLI: Product name display during reboot is incorrect. (It shall be ES3528MV2-FLF-EC, not ES3528MV2-FLF-38) |
| ES3528MV2-FLF-EC-00425 | LBD\_There is conflict between LBD and STP |
| ES3528MV2-FLF-EC-00448 | ACL(UDP packets with dest. port 68) does not work |
| ES3528MV2-FLF-EC-00450 | changing tag and untag mode may cause LBD work incorrectly. |
| ES3528MV2-FLF-EC-00455 | support vlan 4094 |
| ES3528MV2-FLF-EC-00453 | [Enhancement] new request for LLDP trap |
| ES3528MV2-FLF-EC-00451 | ATC : change the threshold from kpps to pps |
| ES3528MV2-FLF-EC-00445 | [enhacnement] support web priviledge |
| ES3528MV2-FLF-EC-00444 | [enhancement] Support Add to config via SNMP |
| ES3528MV2-FLF-EC-00443 | DHCP snooping option 82 checksum calculation problem (checusum error) |
| ES3528MV2-FLF-EC-00440 | [enhancement] support MAC learning can be configured |
| ES3528MV2-FLF-EC-00439 | [enhancement] support IGMPSNP FORWARD with PRIORITY |
| ES3528MV2-FLF-EC-00438 | [enhancement] support spanning topology change propagation stop |
| ES3528MV2-FLF-EC-00437 | [enhancement] support MAC VLAN with MASK & priority |
| ES3528MV2-FLF-EC-00436 | [enhancement] support port-security with saving of MAC-address after rebooting |
| ES3528MV2-FLF-EC-00435 | [enhancement] support support 0-15 privilege\_level assigned from RADIUS to login user |
| ES3528MV2-FLF-EC-00433 | [enhancement] support IPSG MAC mode & IPSG record for blocking traffic |
| ES3528MV2-FLF-EC-00432 | [enhancement] support VLAN ACL |
| ES3528MV2-FLF-EC-00431 | [enhancement] support adding command “ip arp inspection validate dst-mac src-mac ip allow zeros” |
| ES3528MV2-FLF-EC-00430 | [enhancement]support ip dhcp snooping limit rate as cisco |
| ES3528MV2-FLF-EC-00429 | [enhancement] support clock summer time |
| ES3528MV2-FLF-EC-00420 | show cable-diagnostics interface press others to exit but display next page |
| ES3528MV2-FLF-EC-00419 | no permit for using cable-diagnostics on WEB |
| ES3528MV2-FLF-EC-00416 | MSTP instances can not be read by SNMP |
| ES3528MV2-FLF-EC-00380 | MAC addresses that are learned by port security should be marked as “Learned-PSEC” |
| ES3528MV2-FLF-EC-00377 | Enhancement: adding command “ip arp inspection validate dst-mac src-mac ip allow zeros” like in Cisco |

**Runtime V1.3.2.0 ; Loader 1.0.0.0 (Diag 1.0.0.2 )**

**6/20 make the new master file of 1.3.2.0 with the same run-time, but new Diag which with the fix of ES4510MA-PD-FLF-EC-00035.**

**Runtime V1.3.2.2 ; Loader 1.0.0.0 (Diag 1.0.0.1 to disable loopback testing function in Diag)**

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| ES3528MV2-FLF-EC-00414 | [enhancement] add CLI command to change from kbps to pps for the function of storm control |
| ES3528MV2-FLF-EC-00413 | [enhancement] non-STP loopback detection refinement |

**Runtime V1.3.2.1 ; Loader 1.0.0.0 (Diag 1.0.0.1 to disable loopback testing function in Diag)**

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| ES3528MV2-FLF-EC-00408 | DHCPSnooping : Failed to add dynamic binding, drop log |

**Runtime V1.3.2.0 ; Loader 1.0.0.0 (Diag 1.0.0.1 to disable loopback testing function in Diag)**

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| ES3528MV2-FLF-EC-00407 | [enhancement] DDM alram function allow users to configure thresholds |
| ES3528MV2-FLF-EC-00375 | [enhancement] IGMP authentication |
| ES3528MV2-FLF-EC-00374 | [enhancement] need to be able to filter the PVST packets of Cisco |
| ES3528MV2-FLF-EC-00408 | DHCPSnooping : Failed to add dynamic binding, drop log |
| ES3528MV2-FLF-EC-00371 | mac-vlan can't work correclty with DHCP snooping |
| ES3528MV2-FLF-EC-00379 | multicast traffic can't passby after mac vlan enable |
| ES3528MV2-FLF-EC-00377 | Enhancement: adding command “ip arp inspection validate dst-mac src-mac ip allow zeros” like in Cisco |

**Runtime V1.0.2.7 ; Loader 1.0.0.0 (Diag 1.0.0.1 to disable loopback testing function in Diag)**

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| ES3528MV2-FLF-EC-00382 | Manual display ddm thresholds information, but we didn't support this function now. |

**Runtime V1.0.2.6 ; Loader 1.0.0.0 (Diag 1.0.0.1 to disable loopback testing function in Diag)**

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| ES3528MV2-FLF-EC-00348 | [ES3528M\_V1.4.16.1] Mistake in reading information over SNMP - local VLANs are missing |
| ES3528MV2-FLF-EC-00366 | Show IP igmp Snooping statistics query vlan cause Exception |
| ES3528MV2-FLF-EC-00367 | Query won't be forwarded on "no mvr proxy mode" |
| ES3528MV2-FLF-EC-00368 | Refine Sflow V5 |
| ES3528MV2-FLF-EC-00369 | switch can't forward packets over the size of 526 bytes |

**Runtime V1.0.2.5 ; Loader 1.0.0.0**

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| ES3528MV2-FLF-EC-00362 | Storm Control to have separate configuration for unknown unicast, multicast and broadcast |

**Runtime V1.0.2.4 ; Loader 1.0.0.0**

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| ES3528MV2-FLF-EC-00364 | dhcp snooping] drop dhcp packet that packet length is less than 300 bytes |
| ES3528MV2-FLF-EC-00361 | cable diagnostic behavior |
| ES3528MV2-FLF-EC-00360 | have no way to disable IP Source-guard on interface |
| ES3528MV2-FLF-EC-00359 | only 5 ip source-guard entries per port |
| ES3528MV2-FLF-EC-00365 | "ip source-guard mode acl max-binding <x>" can't be saved ater reboot |

**Runtime V1.0.2.3 ; Loader 1.0.0.0**

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| ES3528MV2-FLF-EC-00356 | [enhancement] add the DHCP snooping table binding table entry to 16 |
| ES3528MV2-FLF-EC-00355 | After config dhcp snooping for specific vlan, and then remove it, save config and reboot. CPU 100% |
| ES3528MV2-FLF-EC-00354 | mac-vlan setting can't be saved |
| ES3528MV2-FLF-EC-00353 | dhcpsnp trust port send untagged dhcp request/lease packet even if it's in trunk mode |
| ES3528MV2-FLF-EC-00351 | didn't configure arp inspection trust port, but ARP request from DHCP Snooping trust port still can be |
| ES3528MV2-FLF-EC-00350 | ES3528MV2 forwards all ARP packet sent from DHCP Snooping trusted port |
| ES3528MV2-FLF-EC-00332 | Diffserv:The Policy Map display on web is incorrect. |
| ES3528MV2-FLF-EC-00297 | Web: ACL TCAM Utilization doesn't have "%". It shall be added |

**Runtime V1.2.0.2 ; Loader 1.0.0.0**

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| ES3528MV2-FLF-EC-00347 | [Enhancement] sflow upgrade from version 4 to version 5 |

**Runtime V1.2.0.1 ; Loader 1.0.0.0**

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| ES3528MV2-FLF-EC-00340 | switch drops packet which with UDP source port 0 |

**Runtime V2.0.0.0 ; Loader 1.0.0.0**

**[Note : Phase II has added some enhancements]**

|  |  |
| --- | --- |
| ES3528MV2-FLF-EC-00271 | [Enhancement] Support NDSNP function |
| ES3528MV2-FLF-EC-00270 | [Enhancement] IPV6 Source Guard |
| ES3528MV2-FLF-EC-00268 | [Enhancement] Support G.8032v2 |
| ES3528MV2-FLF-EC-00264 | [enhancement] configure subnet mask friendly |
| ES3528MV2-FLF-EC-00263 | DHCPV6 -- option37 |
| ES3528MV2-FLF-EC-00262 | support DDM by SNMP |
| ES3528MV2-FLF-EC-00261 | enable MDLv2 Snooping, RFC4541 |
| ES3528MV2-FLF-EC-00244 | DHCP relay and snooping can't work at the same time |
| ES3528MV2-FLF-EC-00240 | MVR6: Muticast traffic of registered group which is input from receiver port should not be forwarded to source port |
| ES3528MV2-FLF-EC-00265 | receive dhcpv6 snooping causes error |
| ES3528MV2-FLF-EC-00344 | front port LED are not working |
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**Runtime V1.0.0.1; Loader 1.0.0.0**

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| --- | --- |
| ES3528MV2-FLF-EC-00243 | When device enable dhcp relay and dhcp packets from trunking port, we will face exception message. |
| ES3528MV2-FLF-EC-00255 | have no way to set admin-key 4 for port-channel. |
| ES3528MV2-FLF-EC-00257 | If a port within a port channel, “show dot1x” will got failed information about this port. |
| ES3528MV2-FLF-EC-00259 | no any trunk information of spanning-tree in web interface. |
| ES3528MV2-FLF-EC-00260 | Switch stuck when I attempted to inject dhcpv6 packet to switch with dhcpv6 snooping. |
| ES3528MV2-FLF-EC-00266 | need to clear the command setting by snmp(alias) |
| ES3528MV2-FLF-EC-00267 | High CPU utilization after enabling switchport ingress-filtering function. |
| ES3528MV2-FLF-EC-00181 | SNMP: All LED cannot work as run SNMP-walk. |

**Runtime V2.0.0.0; Loader 1.0.0.0**

|  |  |
| --- | --- |
| ES3528MV2-FLF-EC-00255 | have no way to set admin-key 4 for port-channel |
| ES3528MV2-FLF-EC-00243 | When device enable dhcp relay and dhcp packets from trunking port, we will face exception message. |
| ES3528MV2-FLF-EC-00271 | [Enhancement] Support NDSNP function |
| ES3528MV2-FLF-EC-00270 | [Enhancement] IPV6 Source Guard |
| ES3528MV2-FLF-EC-00268 | [Enhancement] Support G.8032v2 |
| ES3528MV2-FLF-EC-00263 | DHCPV6 -- option37 |
| ES3528MV2-FLF-EC-00261 | enable MDLv2 Snooping, RFC4541 |

**Known Bugs and Issues:**

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Any other problems than those listed above should be reported to our Technical Support Staff.

**Known RESTRICITIONS AND Limitations:**

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| 1. Vlan trunking can be supported on all ports. The manual is incorrect on “VLAN trunking can only be enabled on Gigabit Ethernet port or trunks” |
| 1. PHY chip limit: Cable Test on Power Saving is highly inaccurate. If you want to get accurate cable test, please turn off power saving mode first. |
| 1. PHY chip limit: GE port can do cable diagnostic in linkup, but FE & GE ports can only do cable diagnostic in linkdown without partner |
| 1. PHY chip limit: Power saving (green Ethernet) is work for GE port only. |
| 1. Web UI only support IE 7 and above version. |
| 1. After phase5, when you add one user level 15, you can remove admin user. But, we will create it again in next bootup. You should use “no user admin” to disable admin account if you don’t need admin account. |
| 1. In Phase 5, we add port history counter function. But, chip don’t support input/output discard packet counter. So, its values are always 0. |

**IEEE Standards Support:**

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| --- | --- |
| **Standard** | **Title** |
| IEEE 802.1D | Transparent Bridging Specifications (ISO/IEC 10038) |
| IEEE 802.1p | Traffic Class Expediting and Dynamic Multicast Filtering |
| IEEE 802.1Q | Virtual Bridged Local Area Networks |
| IEEE 802.1w | Rapid Spanning Tree |
| IEEE 802.2 | Local Area Networks, Logical Link Control (LLC) |
| IEEE 802.3 | CSMA/CD 9 (ISO/IEC 8802-3) |
| IEEE 802.3I | 10Base-T (ISO/IEC 8802-3, clause 14) |
| IEEE 802.3u | 100Base-TX (ISO/IEC 8802-3, clause 25) |
| IEEE 802.3x | Flow Control |
| IEEE 802.3z | 1000Base-SX, 1000Base-LX |
| IEEE 802.3ab | 1000Base-TX |
| IEEE 802.3ac | VLAN Tag |
| IEEE 802.3ad | Link Aggregation |
| IEEE 802.1X | Port-based Network Access Control |

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| **RFC No.** | Title | **Groups Supported** |
| 1907 | SNMPv2-MIB (MIB II) | - system group ( 1-9)  - snmp group (1-6, 8-22, 24-32) |
| 2011 | IP-MIB (MIB-II) | - ip group (1-20, 22-23) - icmp group (1-26) |
| 2012 | TCP-MIB (MIB-II) | - tcp group (1-15) (tcpConnTable only support read.) |
| 2013 | UDP-MIB (MIB-II) | - udp group (1-5) |
| IEEE  802.1X MIB | IEEE8021-PAE-MIB | - dot1xPaeSystem (1-2)  - dot1xPaeAuthenticator (1-3) (not support per-port timer setting) |
| 1493 | Bridge MIB | - dot1dBase group (1-4) - dot1dStp group (1-15) - dot1dTp group (1-4) - dot1dStatic group (1) |
| 2863 | Interfaces Evolution MIB (IF-MIB) | - interface group (1-2) (ifadminStatus not support set to 3(testing))  - ifXTable group (1) - ifStackTable group (1) (support read-only) |
| 2819 | RMON MIB | - statistics group (1) - history group (1-2) - alarm group (1) - event group (1-2) |
| 2618 | RADIUS MIB | - radiusAuthClientMIB (1) |
| 2665 | Etherlike MIB | - dot3StatsTable group (1-19) |
| 2737 | Entity MIB | - entityPhysical group (1-16) (support read-only) |
| 2674 | P-bridge | - dot1dExtBase group (1-4) - dot1dPriority group (1,3)  - dot1dGarp group (1) |
| 2674 | Q-bridge | - dot1qBase group (1-5) - dot1qTp group (1-2) - dot1qStatic group(1) - dot1qVlan (1-5) (9-10) |

**SNMP Trap Support:**

|  |  |
| --- | --- |
| **RFC No.** | **Title** |
| RFC 1215 | ColdStart (v1) warmStart (v1) linkDown (v1) linkUp (v1) authenticationFailure (v1) |
| Rfc 1907 | coldStart (v2c) warmStart (v2c) authenticationFailure (v2c) |
| Rfc 2863 | linkDown (v2c) linkUp (v2c) |
| RFC 1493 | newRoot (v1) topologyChange (v1) |
| Rfc 1757 | risingAlarm (v1)  fallingAlarm (v1) |
| RFC 2819 | risingAlarm (v2c) fallingAlarm (v2c) |