

# Ethernet switch MES3348

## Description

**MES3348** switches can be used in service provider network as the aggregation or transport switches, as well as in data centers as Top-of-Rack switches. They have a high performance with interfaces operating at speeds of 10 Gbps or 1 Gbps.

The features' set of **MES3348** includes L3 functions, static routing, dynamic routing, 4 SFP+ 10 Gbps interfaces, stack up to 8 devices, redundant and hot swappable power supplies .

Ethernet Ring Protection Switching (ERPS) protocol provides fast convergence (less than 200 ms) of the network, that guaranties uninterrupted service.

**MES3348** has redundant and hot swappable power supplies. If one supply malfunctions, the other supply can take over the entire system load. Redundancy is enabled automatically.

- **High performance**
- **Stacking support**
- **4x10G ports in base configuration**
- **Power redundancy, hot swappable**
- **L3 functions\***
- **Front-to-back fan system**



\* Firmware version 4.0.7 contains L3 functionality (RIP, OSPF, PIM-SM)

## Technical features

Packet Processor	2xMarvell 98DX3336-A1 (PonCat3)
Network ports	48 x 10/100/1000Base-T (RJ-45) 4 x 10G Base-R/1000Base-X (SFP+/SFP)
Console port	RS-232/RJ-45
Bandwidth	176 Gbps
Buffer memory	12 Mbit
MAC table	16K
VLANs	4K
Quality of Service (QoS)	8 priority queues
L2 Multicast groups	4K
TCAM	For the traffic processing: 3Kx24 B
Jumbo frames size	10240 B
Stacking	Up to 8 units
Physical parameters and parameters of environment	
Power supply	220 V AC, 50 Hz
Max. power consumption	≤ 45 W
Fan system	Front-to-Back, 2 fans
Operating temperature	from -20 up to +50°C
Operating humidity	≤ 80 %
Storage temperature	from -40 up to +70°C
Form factor	19", 1U
Dimensions, mm	440 x 44 x 316 (WxHxD)

## Features and capabilities

### Interfaces functions

- HOL blocking protection
- Back Pressure
- Auto MDI/MDIX
- Jumbo frames
- IEEE 802.3X flow control
- Port mirroring

### MAC table functions

- Independent mode of learning for each VLAN
- MAC Multicast Support
- Automatic MAC addresses aging
- Static MAC Entries

### VLAN functions

- Voice VLAN
- IEEE 802.1Q
- Q-in-Q
- Selective Q-in-Q
- GVRP

### L2 Multicast functions

- Multicast profiles
- Multicast static groups
- IGMP Snooping v1,2,3
- Port/host based IGMP Snooping Fast Leave
- IGMP authorization support via RADIUS
- MLD Snooping v1,2
- IGMP Querier
- MVR

### L2 functions

- STP (Spanning Tree Protocol, IEEE 802.1d)
- RSTP (Rapid Spanning Tree Protocol, IEEE 802.1w)
- MSTP (Multiple Spanning Tree Protocol, IEEE802.1s)
- STP Multiprocess
- Spanning Tree Fast Link option
- EAPS<sup>1</sup>
- STP Root Guard
- BPDU Filtering
- STP BPDU Guard
- Loopback Detection (LBD)
  - ERPS (G.8032v2)

### L3 functions

- Static IP routes
- Dynamic routing protocols: RIPv2, OSPFv2, OSPFv3
- Address Resolution Protocol (ARP)
- VRRP
- Multicast routing protocols: PIM SM, IGMP Proxy
- RIP, OSPF, PIM-SM

### Link Aggregation functions

- Static LAG
- Dynamic LAG (LACP)
- LAG Balancing Algorithms

### IPv6 functions

- IPv6 Host
- IPv4, IPv6 shared usage

### Service functions

- Virtual Cable Testing (VCT)
- Optical transceiver diagnostic
- Green Ethernet

### Security functions

- DHCP Snooping
- DHCP option 82
- IP Source Guard
- Dynamic ARP Inspection
- sFlow
- MAC-based authentication, Port Security, static MAC entries
- Port-based authentication IEEE 802.1x
- Guest VLAN
- DoS attack prevention
- Traffic segmentation
- Protection against non-authorized DHCP servers
- DHCP client filtering
- BPDU attack prevention
- NetBIOS/NetBEUI filtering
- PPPoE Intermediate Agent

### ACL

- L2-L3-L4 ACL (Access Control List)
- Time-Based ACL
- IPv6 ACL
- ACL based on:
  - Physical port number
  - IEEE 802.1p
  - VLAN ID
  - Ethertype
  - DSCP
  - Protocol type
  - TCP/UDP port number
  - User Defined Bytes<sup>1</sup>

### Quality of service (QoS) and rate limiting

- QoS statistics
- Port rate limiting (shaping, policing)
- 8 priority queues
- IEEE 802.1p CoS
- Storm Control
- Bandwidth management
- Scheduling algorithms: Strict Priority/Weighted Round Robin (WRR)
- Three marking colors
- ACL-based CoS/DSCP assignment

### OAM/CFM

- IEEE 802.3ah Ethernet Link OAM
- Dying Gasp
- IEEE 802.1ag Connectivity Fault Management (CFM)
- IEEE 802.3ah Unidirectional Link Detection

### Additional features

- Minimum forwarding rate (for packets with 64 bytes length ) 101,2 Mpps
- Configurable MTU up to 9198 bytes
- Data traffic control
- Maximum noise level : 48 dB

### Management functions

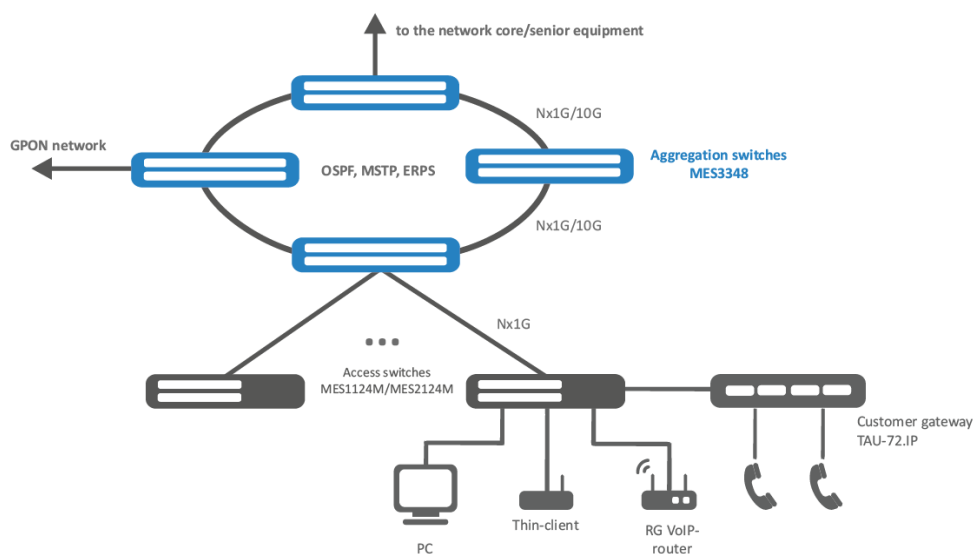
- Configuration file download and upload via TFTP/SCP
- SNMP (Simple Network Management Protocol)
- Command line interface (CLI)
- Web interface
- Syslog
- SNTP (Simple Network Time Protocol)
- Traceroute
- LLDP (802.1ab) including LLDP MED support
- Configuration of user privilege level
- Management interface blocking
- Local authentication
- IP addresses filtering for SNMP
- RADIUS and TACACS+ (Terminal Access Controller Access Control System) clients
- SSH server
- SSL
- Macrocommands
- CLI commands logging
- System log
- DHCP autoprovision
- DHCP Relay (IPv4 support)
- DHCP Option 12
- DHCP Relay Option 82
- PPPoE Circuit ID tag
- Flash File System
- Debugging commands
- Traffic to CPU rate limiting
- Password encryption
- Password recovery
- Ping (IPv4/IPv6)
- FTP server<sup>1</sup>

### Monitoring functions




- Interface statistics
- RMON/SMON
- CPU utilization monitoring per task
- Temperature monitoring
- TCAM utilization monitoring

### MIB

- RFC 1065, 1066, 1155, 1156, 2578 MIB Structure
- RFC 1212 Concise MIB Definitions
- RFC 1213 MIB II
- RFC 1215 MIB Traps Convention
- RFC 1493, 4188 Bridge MIB
- RFC 1157, 2571-2576 SNMP MIB
- RFC 1901-1908, 3418, 3636, 1442, 2578 SNMPv2 MIB
- RFC 271,1757, 2819 RMON MIB
- RFC 2465 IPv6 MIB
- RFC 2466 ICMPv6 MIB
- RFC 2737 Entity MIB
- RFC 4293 IPv6 SNMP Mgmt Interface MIB
- Private MIB
- RFC 3289 DIFFSERV MIB
- RFC 2021 RMONv2 MIB
- RFC 1398, 1643, 1650, 2358, 2665, 3635 Ether-like MIB
- RFC 2668 802.3 MAU MIB
- RFC 2674, 4363 802.1p MIB
- RFC 2233, 2863 IF MIB
- RFC 2618 RADIUS Authentication Client MIB
- RFC 4022 MIB for TCP
- RFC 4113 MIB for UDP
- RFC 3298 MIB for Diffserv
- RFC 2620 RADIUS Accounting Client MIB
- RFC 2925 Ping & Traceroute MIB
- RFC 768 UDP
- RFC 791 IP
- RFC 792 ICMPv4
- RFC 2463, 4443 ICMPv6
- RFC 4884 Extended ICMP for Multi-Part messages support
- RFC 793 TCP
- RFC 2474, 3260 DS field definition in IPv4 and IPv6 headers
- RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)
- RFC 2571, 2572, 2573, 2574 SNMP
- RFC 826 ARP

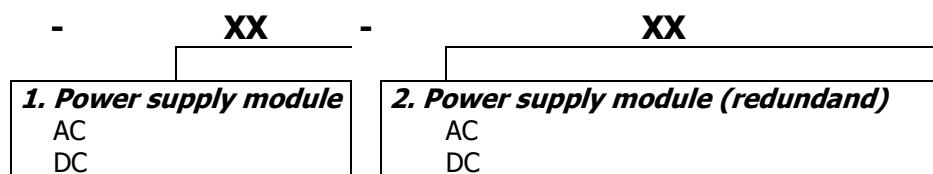


## Ordering Code

Part number	Configuration	Picture
<b>MES3348-XX<sup>1</sup>-XX<sup>2</sup></b>	Ethernet switch MES3348, 48x10/100/1000Base-T (RJ-45), 4x10G Base-R/1000Base-X (SFP+/SFP)	
<b>PM160-220/12</b>	<b>AC</b> Power supply module PM160-220/12, 220V AC, 160W	
<b>PM100-48/12</b>	<b>DC</b> Power supply module PM100-48/12, 48V DC, 75W	
<b>EMS-MES-3000</b>	EMS management system option EMS-MES-3000 for management of switches equipment per 1 switch	

Note 1-2: The switch is equipped with defined power supply module

**MES3348**



Note: The switch must be equipped at least with one power supply module

## Example of Orderig Code

<b>MES3348-AC</b>	The switch MES3348 with one power supply module PM160-220/12
<b>MES3348-DC</b>	The switch MES3348 with one power supply module PM100-48/12
<b>MES3348-AC-AC</b>	The switch MES3348 with two power supply modules PM160-220/12
<b>MES3348-AC-DC</b>	The switch MES3348 with first power supply module PM160-220/12 and second power supply module PM75-48/12