Aggregation Ethernet switches MES3348 + MES3348F

Description:

MES3348(F) switches can be used in service provider network as the aggregation or transport switches. They have a high performance with interfaces operating at speeds of 10 Gbps or 1 Gbps. The features' set of MES3348(F) includes L3 functions, static routing, dynamic routing, 4 SFP+ 10 Gbps interfaces, stack up to 8 devices, redundant and hot swappable power supplies.

MES3348-AC

MES3348F-AC

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

Features:

- High performance
- Stacking up to 8 devices
- 4x10G ports in base configuration
- Hot-swappable redundant power supplies
- L3 functions
- Front-to-back cooling

Specifications:

	MES3348	MES3348F
Processor	2xMarvell 98DX3336-A1 (PonCat3)	
Network ports	48 x 10/100/1000Base-T (RJ-45) 4 x 10G Base-R/1000Base-X (SFP+/SFP)	48 x 1000Base-X/100BASE-FX (SFP) 4 x 10G Base-R/1000Base-X (SFP+/SFP)
Console port	RS-232/RJ-45	
Bandwidth	176 Gbps	
Throughput for 64 bytes	130.9 MPPS	
Buffer memory	24 Mb	
RAM (DDR3)	512 MB	
ROM (RAW NAND)	512 MB	
MAC table	16K	
VLAN table	4K	
Quality of Service (QoS)	8 egress queues per port	
L2 Multicast groups	4K	
TCAM	For routing: 13K, For the traffic processing: 3Kx24 B	

ARP table1	4K
Link Aggregation Groups (LAG)	16, up to 8 ports per LAG
Maximum size of ECMP groups	8
Jumbo frames size	10240 B
Stacking	8 devices

Physical parameters and parameters of environment

Power supply	AC power: 220V+-20%, 50 Hz DC power: -36..-72V Up to 2 hot-swappable power supplies	
Max. power consumption	45 W	55 W
Cooling	Front-to-Back, 4 fans	
Operating temperature	From -10° up to +45°C	
Operating humidity	≤ 80 %	
Storage temperature	From -40° to +70°C	
Form factor	19”, 1U	
Dimensions, mm	440 x 316 x 44 (W x D x H)	

Features and capabilities

Interfaces functions

- Head-of-line blocking (HOL) protection
- Back Pressure
- Auto MDI/MDIX
- Jumbo frames
- Flow control (IEEE 802.3X)
- Port mirroring

MAC table functions

- Independent learning mode per VLAN
- MAC Multicast Support
- Configurable aging time of MAC addresses
- Static MAC Entries
- MAC Flapping logging

VLAN functions

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

L2 Multicast functions

- Multicast profiles
- Static Multicast groups
- IGMP Snooping v1,2,3
- Port/host-based IGMP Snooping Fast Leave
- IGMP proxy-report
- IGMP autorization via RADIUS
- MLD Snooping v1,2
- IGMP Querier
- MVR

Service functions

- Virtual Cable Testing (VCT)
- Optical transceiver diagnostics
- 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 VLAN1
- DoS attack prevention
- Traffic segmentation
- Protection against non-authorized DHCP servers
- DHCP client filtering
- BPDU attack prevention
- NetBIOS/NetBEUI filtering
- PPPoE Intermediate Agent

ACL (Access Control List)

- L2-L3-L4 ACL
- 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

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[1]
- STP Root Guard
- STP Loop Guard
- BPDU Filtering
- STP BPDU Guard
- VLAN-based Loopback Detection (LBD)
- ERPS (G.8032v2)
- Private VLAN
- Layer 2 Protocol Tunneling

L3 functions

- Static IP routes
- Dynamic routing protocols RIPv2, OSPFv2, OSPFv3
- Address Resolution Protocol (ARP)
- VRRP
- PIM SIM, IGMP Proxy
- IP Unnumbered
- ECMP Load Balancing

Link Aggregation functions

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

IPv6 functions

- IPv6 Host
- Dual-stack

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

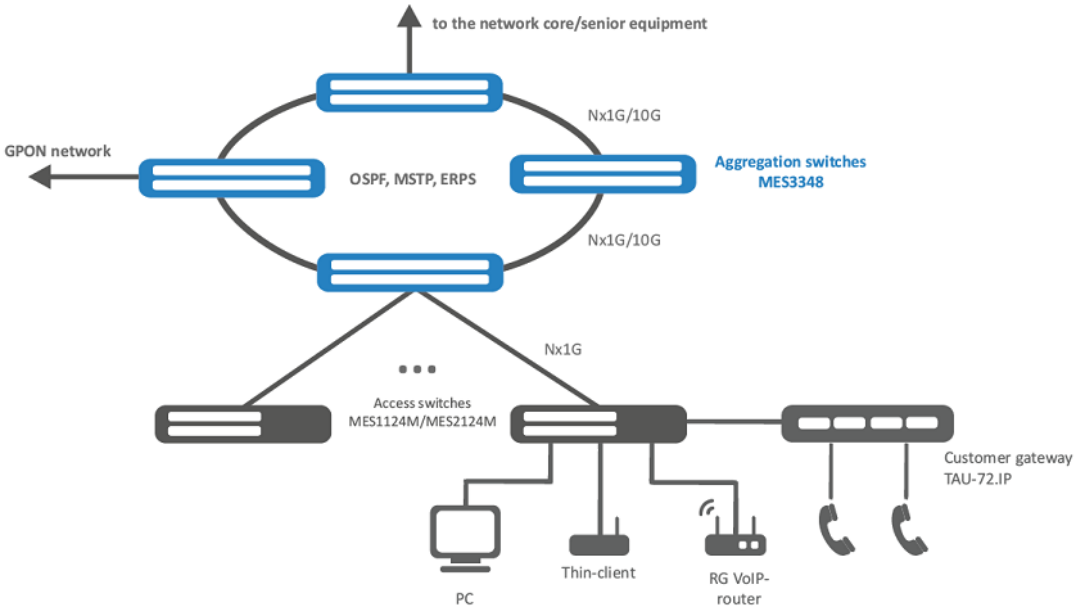
[1] Not supported in the current firmware version (4.0.9)

Quality of Service (QoS) and rate limiting

- QoS statistics
- Shaping, Policing)
- IEEE 802.1p Class of Service (CoS)
- Storm Control
- Bandwidth management
- Scheduling algorithms: Strict Priority/Weighted Round Robin (WRR)
- Three marking colors
- ACL-based CoS/DSCP assignment
- ACL-based VLAN assignment
- Setting the IEEE 802.1p priority for management VLAN
- DSCP to CoS/CoS to DSCP remarking
- 802.1p, DSCP mark assignment for IGMP

OAM/CFM

- IEEE 802.3ah Ethernet Link OAM
- Dying Gasp
- IEEE 802.1ag Connectivity Fault Management (CFM)1
- IEEE 802.3ah Unidirectional Link Detection



Main management functions

- Download and upload of configuration file via TFTP/SCP
- Redirecting the output of CLI commands to an arbitrary to an arbitrary file on ROM
- SNMP (Simple Network Management Protocol)
- Command Line Interface (CLI)
- Web interface
- Syslog
- SNTP (Simple Network Time Protocol)
- Traceroute
- LLDP (802.1ab) + LLDP MED
- Access control - 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
- Rate limit of traffic to CPU
- Password encryption
- Password recovery
- Ping (IPv4/IPv6 support)
- FTP server[1]
- DNS server

Monitoring functions

- Statistics on interfaces
- RMON/SMON
- CPU utilization monitoring per task and per traffic type
- Temperature monitoring
- TCAM utilization monitoring
- RAM utilization monitoring

MIB

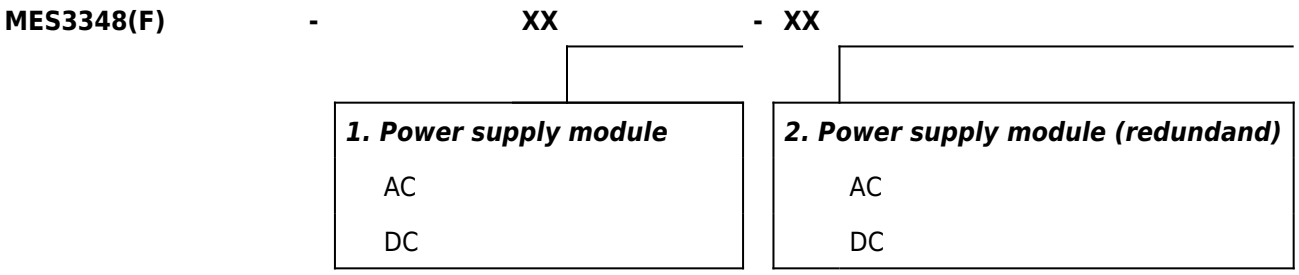
- RFC 1065, 1066, 1155, 1156, 2578 MIB Structure
- RFC 1212 Concise MIB Definitions
- RFC 1213 MIB II
- RFC 1215 MIB Traps Convention
- RFC 1493, 4188 Bridge MIB
- RFC 1157, 2571-2576 SNMP MIB
- RFC 1901-1908, 3418, 3636, 1442, 2578 SNMPv2 MIB
- RFC 271,1757, 2819 RMON MIB
- RFC 2465 IPv6 MIB
- RFC 2466 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

[1] Not supported in the current firmware version (4.0.9)

Ordering code:

MES3348-XX1-XX2	MES3348 Ethernet switch, 48 x 10/100/1000Base-T (RJ-45), 4 x 10G Base-R/1000Base-X (SFP+/SFP)
MES3348F-XX1-XX2	MES3348F Ethernet switch, 48 x 1000BASE-X/100BASE-FX (SFP) 4 x 10GBASE-R/1000BASE-X (SFP+/SFP)
PM160-220/12	AC Power supply module PM160-220/12, 220V AC, 160W
PM100-48/12	DC Power supply module PM100-48/12, 48V DC, 100W
EMS-MES-aggregation	EMS-MES-aggregation option of EMS system for managing and monitoring of OPTOKON network elements: 1 aggregation network element

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



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

Example of Orderig Code

MES3348-AC	The switch MES3348 with one power supply module PM160-220/12
MES3348F-DC	The switch MES3348F with one power supply module PM100-48/12
MES3348F-AC-AC	The switch MES3348F with two power supply modules PM160-220/12
MES3348-AC-DC	The switch MES3348 with first power supply module PM160-220/12 and second power supply module PM100-48/12