ELTEXALATAU

Integrated networking solutions

– **High performance**
– **Stacking up to 8 devices**
– **4x10G ports in base configuration**
– **Hot-swappable redundant power supplies**
– **Advanced L2 functions**
– **L3 functions**
– **Front-to-back cooling**

MES3348

MES3348F

MES3348 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 includes advanced L2 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.

Technical features

	MES3348	MES3348F
Common parameters		
Processor	Marvell 2x98DX3336-A1 (PonCat3) (2 pcs)	
Interfaces	48 x 10/100/1000BASE-T (RJ-45) 4 x 10GBASE-R/1000BASE-X (SFP+/SFP)	48 x 1000BASE-X/100BASE-FX (SFP) 4 x 10GBASE-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 egressqueuesperport	
L2 Multicast groups	4K	
TCAM	For routing: 13K; For traffic processing: 3Kx24B	
ARP table[1]	4K	
Link Aggregation Groups (LAG)	16, up to 8 ports per LAG	
Maximum size of ECMP groups	8	
Jumbo frames size	10240 bytes	
Stacking	8 devices	
Physical parameters and environment features		
Power supply	AC power: 220V+-20%, 50 Hz DC power: -36..-72V Up to 2 hot-swappable power supplies	

[1] *For each host in the ARP table, an entry is created in the routing table*

Technical features

	MES3348	MES3348F
Max. power consumption	45 W	55 W
Cooling	Front-to-Back, 2 fans	Front-to-Back, 4 fans
Operating temperature	From -10^{0}to +45 $\overset{0}{C}$	
Operating humidity	80% max	
Storage temperature	From -40^{0}to +70 $\overset{0}{C}$	
Form factor	19'', 1U	
Dimensions (WxDxH)	440x316x44 mm	
Weight	3.95 kg	4 kg

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
– 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 authorization 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
– PVSTP+
– 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 SM, PIM DM, IGMP Proxy
– IP Unnumbered
– ECMP Load Balancing

Link Aggregation functions
– Static LAG
– Dynamic LAG (LACP)
– LAG Balancing Algorithm

IPv6 functions
– IPv6 Host
– Dual-stack

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 VLAN[1]
– DoS attack prevention
– Traffic segmentation
– Protection against non-authorized DHCP servers
– DHCP clients filtering
– BPDU attacks prevention
– NetBIOS/NetBEUI filtering
– PPPoE Intermediate Agent

[1] *Not supported in the current firmware version 4.0.10.1*

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Features and capabilities

ACL (Access Control Lists)
– 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

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 mark 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 file on ROM
– SNMP
– Command Line Interface (CLI)
– Web interface
– Syslog
– SNTP (Simple Network Time Protocol)
– Traceroute
– LLDP (802.1ab) + LLDP MED
– Access control – privilege levels
– 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)
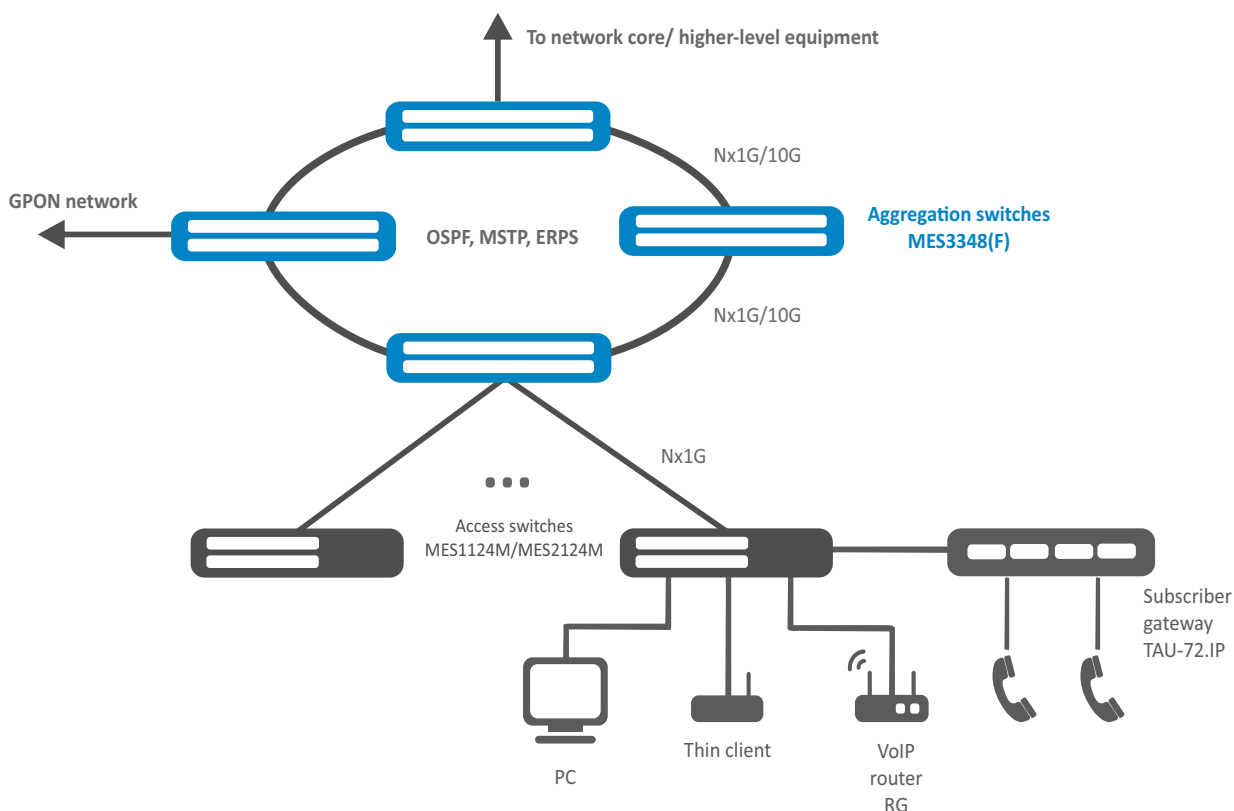– FTP server[1]
– DNS server

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

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[1] *Not supported in the current firmware version 4.0.10.1*

Integrated networking solutions

Use Case

To network core/ higher-level equipment

Nx1G/10G

GPON network

OSPF, MSTP, ERPS

Aggregation switches
MES3348(F)

Nx1G/10G

Nx1G

Access switches
MES1124M/MES2124M

Subscriber
gateway
TAU-72.IP

PC

Thin client

VoIP
router
RG

Name	Description	Image
MES3348	MES3348 Ethernet switch, 48 x 10/100/1000BASE-T (RJ-45) 4 x 10GBASE-R/1000BASE-X (SFP+/SFP)	
MES3348F	MES3348F Ethernet switch, 48 x 1000BASE-X/100BASE-FX (SFP) 4 x 10GBASE-R/1000BASE-X (SFP+/SFP)	
Related products		
PM100-48/12	PM100-48/12 power module, 48V DC, 100W	
PM160-220/12	PM160-220/12 power module, 220V AC, 160W	

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About EltexAlatau

EltexAlatau company is one of the first communication equipment manufacturers in Kazakhstan established in 2012. The main focus of the enterprise is a set of solutions and the opportunity of their seamless connection to the customer's infrastructure.