- **High performance (up to 6.4 Tbps)**
- **Non-blocking architecture**
- **L3 switches**
- **Stacking up to 8 devices**
- **Power supply redundancy**
- **Front-to-Back/Back-to-Front cooling**

MES5600-24 switches are high performance devices with 400GBASE-R8, 100GBASE-R4 and 10GBASE-R interfaces that can be used as Leaf, Spine, Top-of-Rack or End-of-Row switches for data centers.

The non-blocking architecture guarantees lossless packet forwarding at wire speed with minimum and predictable delays for all types of traffic.

Fault tolerance of the devices is ensured by redundant power supplies (1+1) and the use of replaceable fans.

The redundant and hot-swappable fans and AC/DC power supplies along with advanced hardware monitoring functions provide high reliability and uninterrupted services.

The devices support EVPN/VXLAN technology to create networks with simple, high-performance and scalable data center architecture.

Technical features

Interfaces	
10/100/1000BASE-T (OOB)	1
10GBASE-R (SFP+)	2
40GBASE-R4 (QSFP+)/100GBASE-R4 (QSFP28)	24
40GBASE-R4 (QSFP+)/100GBASE-R4 (QSFP28)/400GBASE-R8 (QSFP56-DD)	8
USB 2.0	1
Console port RS-232 (RJ-45)	1
Performance	
Bandwidth	11.24 Tbps
Throughput for 64 bytes[1]	4944 MPPS
Buffer memory	48 MB
RAM (DDR4)	8 GB
ROM (embedded uSSD)	8 GB
MAC table	131072[2]/262144[3]
ARP table[4]	65469[2]/98237[3]
VLAN table	4094
L2 Multicast group	2046
SQinQ rules	1320 (ingress), 1320 (egress)

[1] Values are given for one-way transmission.
[2] Maximum value in mid-l3-mid-l2 mode.
[3] Maximum value in min-l3-max-l2 mode.
[4] For each host in the ARP table, an entry is created in the switching table. The number of the ARP entries with installed EVPN license is 63421 in mid-l3-mid-l2 mode, 96189 in min-l3-max-l2 mode.

Technical features (continued)

Performance	
MAC ACL rules	5089
IPv4/IPv6 ACL rules	5089/2544
L3 IPv4 Unicast routes[1]	294884[2]/16336[3]
L3 IPv6 Unicast routes[1]	73688[2]/4056[3]
L3 IPv4 Multicast routes[1]	24566[2]/8100[3]
L3 IPv6 Multicast routes[1]	20158[2]/2027[3]
VRRP routers	127
Maximum size of ECMP groups	1024
ECMP routes	64
VRF	251 (including default VRF)
L3 interfaces	2050
Maximum number of VXLAN	4093
Link Aggregation Groups (LAG)	128, up to 32 ports in one LAG
Quality of Service (QoS)	8 egress queues per port
Jumbo frames	10240 bytes
Stacking	up to 8 devices

Features and capabilities

Interface features
– Head-of-line blocking (HOL) protection
– Back pressure
– Auto MDI/MDIX
– Jumbo frames
– Flow Control IEEE 802.3X
– Port Mirroring
– Stacking

MAC table features
– Independent learning per VLAN
– MAC Multicast Support
– Configurable aging time of MAC addresses
– Static MAC Entries
– MAC Flapping logging

VLAN features
– Voice VLAN
– IEEE 802.1Q
– Q-in-Q
– Selective Q-in-Q
– GVRP
– Subnet-based VLAN

L2 Multicast functions
– Multicast profiles
– Static Multicast groups
– IGMP Snooping v1,2,3
– Port/host-based IGMP Snooping Fast Leave
– PIM Snooping
– IGMP authorization via RADIUS
– MLD Snooping v1,2
– IGMP Querier

L2 functions
– STP (Spanning Tree Protocol, IEEE 802.1d)
– RSTP (Rapid Spanning Tree Protocol, IEEE 802.1w)
– MSTP (Multiple Spanning Tree Protocol, IEEE 802.1s)
– Spanning Tree Fast Link option
– STP Root Guard
– BPDU Filtering
– STP BPDU Guard
– Loopback Detection (LBD)
– ERPS (G.8032v2)
– Flex-link
– PVSTP+
– RPVSTP+

L3 functions
– Static routing
– Dynamic routing protocols RIPv2, OSPFv2, OSPFv3, IS-IS, BGP[4] (IPv4 Unicast, IPv4 Multicast)
– Address Resolution Protocol (ARP)
– Policy-Based Routing (IPv4)
– VRRP

[1] IPv4/IPv6 Unicast/Multicast routes share hardware resources.
[2] Maximum value in mid-l3-mid-l2 mode.
[3] Maximum value in min-l3-max-l2 mode.
[4] BGP support is provided under the license.

Features and capabilities (continued)

– Multicast dynamic routing protocols PIM SM, PIM DM, IGMP Proxy, MSDP
– BFD (for BGP, OSPF, IS-IS)
– IP Unnumbered
– GRE protocol
– VRF lite

VPN/VXLAN[1]

– Support for L2VPN services
– Support for L3VPN services (symmetric IRB)
– Ingress replication
– Multicast replication
– EVPN multihoming
– Anycast gateway
– ARP suppression
– IPv4 gateway address (for type 5 routes)
– MAC mobility

Link Aggregation functions

– Link Aggregation Groups (LAG)
– LACP
– LAG Balancing Algorithm
– Multi-Switch Link Aggregation Group (MLAG)

IPv6 support

– IPv6 Host
– Dual-stack IPv6, IPv4

Service functions

– Optical transceiver diagnostics

Security functions

– DHCP Snooping
– DHCP Option 82
– IP Source Guard
– Dynamic ARP Inspection
– sFlow
– MAC-based authentication, MAC address limitation, static MAC entries
– Port-based authentication IEEE 802.1x
– Guest VLAN
– DoS attack prevention
– Traffic segmentation
– DHCP clients filtering
– BPDU attack prevention
– NetBIOS/NetBEUI filtering

Access Control Lists (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
  – IP type
  – TCP/UDP port number

Quality of Service (QoS) and rate limiting

– QoS statistics
– Shaping, Policing
– IEEE 802.1p Class of Service (CoS)
– Broadcast Storm Control
– Bandwidth management
– Strict Priority/Weighted Round Robin (WRR) scheduling algorithms
– 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

– 802.3ah Ethernet Link OAM
– 802.3ah Unidirectional Link Detection

Management functions

– Configuration file download and upload via TFTP/SCP
– SNMP
– Command Line Interface (CLI)
– Web interface
– Syslog
– Simple Network Time Protocol (SNTP)
– (NTP) Network Time Protocol, NTP server, NTP peer-to-peer
– Traceroute
– LLDP (802.1ab) + LLDP MED
– LLDP (IEEE 802.1ab)
– TACACS+
– Access control – privilege levels for users
– Management ACL
– Management interface blocking
– Local authentication
– IP addresses filtering for SNMP
– RADIUS/TACACS+ (Terminal Access Controller Access Control System) client
– SSH server
– Telnet server
– SSL
– Macrocommands
– CLI command logging
– System log
– DHCP autoprovision
– DHCP Relay (Option 82)
– DHCP Option 12
– DHCP server
– Debugging commands
– Rate limit of traffic to CPU

[1] EVPN technology support is provided under the license.

Features and capabilities (continued)

– Password encryption
– Password recovery
– Ping (IPv4/IPv6)

Monitoring functions

– Interface statistics
– Remote monitoring RMON
– Task and traffic type-based CPU utilization monitoring
– Temperature monitoring
– TCAM 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 1271, 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 IEEE 802.3 MAU MIB
– RFC 2674, 4363 IEEE 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 to support Multi-Part messages
– RFC 793 TCP
– RFC 2474, 3260 Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 headers
– RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)
– RFC 2571-2574 SNMP
– RFC 826 ARP
– IEC 61850

Physical parameters

Physical specifications and environmental parameters	
Power supply	100–240 V, 50–60 Hz power supply options: • 1 AC power supply; • 2 hot-swappable AC power supplies
Input current	3–5 A
Maximum power consumption	900 W
Heat dissipation	900 W
Dying Gasp support	no
Operating temperature	from 0 to +45 °C
Storage temperature	from -50 to +70 °C
Operating humidity	no more than 80 % (without condensing)
Cooling	Front-to-Back, 6 dual fans
Dimensions (W × H × D)	440 × 44 × 530 mm
Weight	12.22 kg

Ordering information

Name	Description
MES5600-24	Ethernet switch MES5600-24, 1×10/100/1000BASE-T (OOB), 24×40GBASE-R4 (QSFP+)/100GBASE-R4 (QSFP28), 8×40GBASE-R4 (QSFP+)/100GBASE-R4 (QSFP28)/400GBASE-R8 (QSFP56-DD), 2×10GBASE-R (SFP+), 1×USB, L3
Cooling[1]	
3 × FAN-4W-2X2-01	3 dual fans FAN-4W-2X2-01 with Front-to-Back cooling
Related software	
ECCM-MES5600-24	ECCM-MES5600-24 option of Eltex ECCM management system for Eltex network elements management and monitoring: 1 network element MES5600-24

[1] By default, the fans are not installed. To include the fans in order and choose its type contact Sales Department.

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About Eltex

Eltex Enterprise is a leading Russian developer and manufacturer of communication equipment with 30 years of history. Complete solutions and their seamless integrability into the Customer's infrastructure are the priority growth areas of the company.