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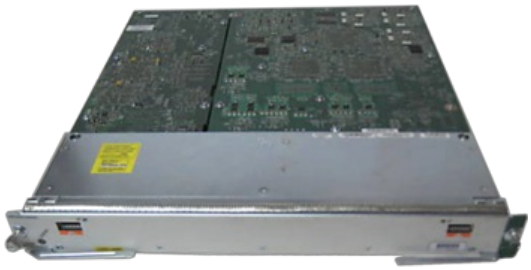

Модуль Cisco 7600-ES20-10G3CXL

7600-ES20-10G3CXL

Описание

Chassis compatibility	The 7603-S is fully supported.
Central forwarding engine compatibility	• Supervisor Engine 720-3B, 720-3BXL, Route Switch Processor 720 (RSP720) and later. • ES20 requires dual-channel switch fabric connectivity; therefore, the 7600-ES20 is not supported with the Supervisor 32 or in slots 1 through 8 of the 7613 chassis.
Distributed Forwarding Card (DFC)	• Choice of DFC-3C or DFC-3CXL • Line-rate distributed forwarding with services enabled, up to ~30 mpps per line card • DFC-3C • Designed for Carrier Ethernet-based infrastructures • Up to 256K hardware-based forwarding entries with DFC-3C • Up to 128K Netflow entries with DFC-3C • DFC-3CXL • Optimized for IP/MPLS PE mid-size and small service providers offering multiple IP services such as Layer 3 VPNs, IPv6, and triple- or quad-play services • Up to 1 million hardware-based forwarding entries with DFC-3CXL • Up to 256K Netflow entries with DFC-3CXL
Minimum software	
Packet memory	512 Megabytes for 200 ms of combined input and output buffering at 10 Gbps
Link encapsulations	Ethernet II and IEEE 802.1q encapsulations

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Hardware queues	• 16,000 queues dynamically shared between ingress and egress processing • Hierarchical QoS (H-QoS)
MAC addresses	• Up to 80,000 MAC Addresses per ES20 Line Card • 16 K VLAN IDs per line card (within Flexible QinQ configuration guidelines) • Hardware-based MAC learning at wire rate
Environmental conditions	Operating temperature: 32 to 104°F (0 to 40°C) Storage temperature: -40 to 167°F (-40 to 75°C) Relative humidity: 10 to 90 percent, noncondensing Operating altitude: -60 to 2000 m
MIBs	• Cisco Entity MIB (CISCO-ENTITY-MIB) • Cisco Entity Asset MIB • Cisco Entity Field-Replaceable Unit (FRU) Control MIB • Cisco Entity Alarm MIB • Interface IF MIB (RFC 2233) • Definitions of Managed Objects for Bridges (RFC 1493) • Evolution of Interfaces Group of MIB-II (RFC 1573) • Simple Network Management Protocol (SNMP) MIB II (RFC 1213) • Remote Monitoring (RMON) MIB (RFC 1757) • Switch Monitoring (SMON) MIB Operating temperature: 32 to 104°F (0 to 40°C) Storage temperature: -40 to 167°F (-40 to 75°C) Relative humidity: 10 to 90 percent, noncondensing Operating altitude: -60 to 2000 m
Network management	Supported with CiscoWorks, CiscoView and CiscoWorks Resource Manager Essentials (RME) • Integrated Solution Center (ISC) • Cisco Entity MIB (CISCO-ENTITY-MIB) • Cisco Entity Asset MIB • Cisco Entity Field-Replaceable Unit (FRU) Control MIB • Cisco Entity Alarm MIB • Interface IF MIB (RFC 2233) • Definitions of Managed Objects for Bridges (RFC 1493) • Evolution of Interfaces Group of MIB-II (RFC 1573) • SNMP MIB II (RFC 1213) • Remote Monitoring (RMON) MIB (RFC 1757)

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	• Remote Monitoring (RMON) MIB (RFC 1757) • Switch Monitoring (SMON) MIB • IEEE 802.1ag, Connectivity Fault Management	
Physical specifications	• Occupies one slot in a Cisco 7600 Series • Up to eight (8) ES20s in a Cisco 7609 or 7609-S 9-slot chassis • Requires Supervisor 720-3B, or 3BXL, RSP720 or later • Dimensions (H x W x D): 1.75 x 15.375 x 16 in. • Weight: 16 lbs. • Mean Time Between Failure (MTBF) 80,000 hours	
Power	340.2 W	
Indicators	Status: green (operational); orange (faulty)	
Regulatory compliance	CE Marking	
Safety	• UL 60950 • CSA C22.2 No. 60950 • EN60950 • TS001 • IEC 60950 • AS/NZS3260	
Electromagnetic compatibilty	• FCC Part 15 Class A • ICES-003 Class A • VCCI Class A • EN55022 Class A • CISPR22 Class A • AS/NZS3548 Class A • EN61000-3-2 • EN61000-3-3 • EN61000-3-1 • EN55024 • EN50082-1 • EN300 386 • FCC Part 15 Class A • ICES-003 Class A • VCCI Class A	• EN55022 Class A • CISPR22 Class A • AS/NZS CISPR 22 Class A • EN61000-3-2 • EN61000-3-3 • EN61000-6-1 • EN55024 • EN50082-1 • EN300 386 • UL 60950 • CSA C22.2 No. 60950 • EN60950 • TS001 • IEC 60950 • AS/NZS3260

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Telecommunications standards	• ITU-T G.691 • ITU-T G.707 • ITU-T G.783 Sections 9-10 • ITU-T G.784 • ITU-T G.803 • ITU-T G.813 • ITU-T G.825 • ITU-T G.826 • ITU-T G.841 • ITU-T G.957 Table 3 • ITU-T G.958FCC Part 15 Class A • ICES-003 Class A • VCCI Class A • EN55022 Class A • CISPR22 Class A • AS/NZS3548 Class A • EN61000-3-2	• EN61000-3-3 • EN61000-3-1 • EN55024 • EN50082-1 • EN300 386 • FCC Part 15 Class A • ICES-003 Class A • VCCI Class A • EN55022 Class A • CISPR22 Class A • AS/NZS CISPR 22 Class A • EN61000-3-2 • EN61000-3-3 • EN61000-6-1 • EN55024 • EN50082-1 • EN300 386

Carrier Ethernet and IP/MPLS network protocols	• IPv4 unicast and multicast • IPv6 unicast and multicast • Multiprotocol Label Switching (MPLS) Provider Edge (PE) L2 and L3 VPNs • Multiprotocol Label Switching Traffic Engineering (MPLS-TE) • Multiprotocol Label Switching (MPLS) Fast Reroute (FRR) • Diff-Serv aware MPLS TE • GRE and IP-in-IP tunneling • Ethernet Bridging and Ethernet Multipoint Bridging (E-MPB) • Ethernet switching • Ethernet over MPLS (EoMPLS) • Switch port: access and trunk • QinQ termination • Selective QinQ • Flexible QinQ • VLAN translation • Private VLAN • VPLS and H-VPLS

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	• VLAN and Spanning Tree Protocols • Per VLAN Spanning Tree (PVST) • Virtual Switch Tagging (VST) • Rapid Spanning Tree Protocol (RSTP) • Multiple Spanning Tree (MST) Protocol: IEEE 802.1s • VACL and VTP
QoS	• Modular QoS CLI (MQC) • Policing granularity down to ingress, egress, physical interfaces, and VLAN • Access control lists • Classification, marking, policing, and queuing • Diff-Serv Code Point (DSCP) • Complex re-marking of Ethernet and IP/MPLS headers
Congestion avoidance	Weighted Random Early Detection (WRED) based on IP Prec, DSCP, MPLS EXP
Queuing and shaping	• Enhanced Class-based Weighted Fair Queuing (CBWFQ) • Egress low-latency queuing (LLQ); Traffic inside LLQ may be shaped • Two levels of queuing hierarchy • Egress Shaping
Traffic classification and bandwidth policing	Classification based on: • Extended ACL • IP Precedence/IP DSCP • MPLS Experimental Bits (EXP) • VLAN • Input VLAN • Policer: Ingress single and dual-rate, three color
ACLs and security	• Up to 32,000 access list entries with no forwarding degradation • HW counters for ACL hits
Layer 2 and Layer 3 VPNs	• Layer 2 VPNs • EoMPLS with MAC learning • H-VPLS (MPLS Edge or IEEE 802.1ad Edge) • Flexible QinQ • Layer 3 VPNs • MPLS VPN (RFC 2547-bis) • Inter-AS and Carrier-Supporting-Carrier

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	• Multicast VPN
Protection and bundling	• MPLS Fast Reroute •

Спецификация.

Таблица памяти Cisco (Router Memory)

Таблица производительности (Router perfomance)

Производитель: Cisco

Общие

Тип устройства	Карты расширения
Поддерживаемый тип интерфейсов маршрутизатора	Интерфейсы 10GBase-X XFP
Линейка Cisco	7600