



■ Overview

RS-ES-650-56XQS supports fixed 48*1/10/25G SFP28 optical interfaces, 8*40/100G QSFP28 optical interfaces, five modular fan slots, and dual modular power slots.

RS-ES-650-56XQS switch are Rubisec new generation 25GE data center RoCE switches designed for enterprise data center networks, providing high-throughput, high-density interfaces, larger buffer and lower latency. The RS-ES-650-56XQS switch adopts advanced hardware architecture with 48*25GE access ports and multiple 40/100GE uplinks. RS-ES-650-56XQS switch provide rich data center service features and management capability. RS-ES-650-56XQS switch realize large buffer of the interfaces, meeting the burst flow forwarding without packet loss, provide the M-LAG technology for virtualization scenarios, provide the modular power and fan design for high reliability. The key components adopt “overvoltage” designs to ensure that the product has the strong ability of continuous operation. can also be deployed as aggregation or core switches for enterprise campus LAN networks.

RS-ES-650-56XQS switch fully support the RoCEv2 standards, meeting the requirements for switch performance in high-performance data center scenarios. The RS-ES-650-56XQS supports a wide range of lossless Ethernet technologies, including PFC, ECN, ETS, DCBX, etc. This helps create an end-to-end, zero-jitter, low-latency, lossless Ethernet network that meets the demands of cloud computing, big data, artificial intelligence, and high-performance computing deployments in data centers.

RS-ES-650-56XQS switch can work with the industry’s mainstream virtualization platforms and acts a hardware gateway on an VxLAN overlay network. Virtual extensible LANs (VxLAN), a common network virtualization overlay protocol that expands the layer 2 network address space from 4,000 to 16 million. RS-ES-650-56XQS switch support BGP-EVPN, which is used as the overlay control plane and provides virtual connectivity between different layer 2/3 domains over an IP network.

Models	RS-ES-650-56XQS
Hardware Specification	
Physical Ports	Fixed 48*1/10/25G SFP28 optical interfaces, 8*40/100G QSFP28 optical interfaces, five modular fan slots, and dual modular power slots.
Management Interface	One Console port, one management Ethernet port, one USB interface
Switching Capacity	4Tbps
Flash	8G
Memory	4G (Default)
Interface Buffer Size	16M
Jumbo Frame	12K
Max. MAC Entry	448K
Max. ARP Entry	129K
Max. IPv4 Routing Entry	393K
Max. VRF Entry	8K
MSTP Instance	64
VRRP Group	255
Max. ECMP Path	128
IGMP Group	8K
VxLAN VTEP Instance	8K
EVPN Host Route Entry	64K
Redundant Design	Two Power Slots
Power Supply	Support power redundancy, 1+1 backup mode Input voltage (AC): 100V ~ 240V, 50Hz ~ 60Hz
Temperature	Work temperature: 0°C to 50°C Storage temperature: -40°C to 70°C
Humidity	Work humidity: 10% to 90%, no-condensing Storage humidity: 5% to 95%, no-condensing
Power Consumption	318W
Dimension(W×D×H)	442mm×420mm×44.2mm

Software Features		
Standard L2 Protocol	Interface	Port Type UNI/NNI, Port Speed, Port MTU, Port Loopback, Loopback interface, Tunnel interface, Null interface, VXLAN interface
	Ethernet Switching	LACP Link aggregation, LACP Port Priority, LACP Load Balance, LACP Rate Monitor, LACP Debug, Port isolation, QinQ, VLAN mapping, Super VLAN, PVLAN, Voice VLAN, STP, RSTP, MSTP, Loopback-detection, Error-disable, VIST/VISR+, GVRP, MLAG, VLAN isolation, up to 128 LACP Group, 8 port each group
Standard L3 Protocol	IP Protocol	ARP, DHCP, DHCPv6, DHCP Server, DHCPv6 Server, DHCPv6 Client, DHCP Relay, DHCPv6 Relay, DHCP Option82, DNS, GRE, IPv4, IP over IPv4, ISATAP, IPv4 over IPv6, IPv6 over IPv6
	Routing Protocol	Static route for IPv4&IPv6, RIPv1/v2, RIPv6, OSPFv2, OSPFv3, IS-IS, IS-ISv6, BGP, BGPv6, Policy Route, MP-BGP
Multicast	L2 MulticastW	IGMP Snooping, IGMP Snooping over VxLAN, multicast VLAN (MVR, MVP), MLD Snooping, Router-alert Option
	L3 Multicast	IGMPv1/v2/v3, MLDv1/v2, PIM-SM, PIM-DM, PIM-SSM, IPv6 PIM-SM, IPv6 PIM-SSM, MSDP, IGMP Group Filter, MLD Group Filter
QoS & ACL	QoS	802.1p, DSCP, Priority Mapping, SP, WRR, WDRR, SP+WRR, SP+WDRR, WRED, Flow classification, Traffic monitoring, Traffic shaping, Congestion management, Congestion avoidance, Flow-based mirroring, Diffserv, CoS, Rate limiting
	ACL	Standard IP ACL, extended IP ACL, standard MAC ACL, extended MAC ACL, extended Hybrid ACL, Standard IPv6 ACL, extended IPv6 ACL
Data Center Feature	Basic Feature	TRILL, VXLAN, BGP-EVPN, M-LAG, ESI Multi-Homing
	RoCEv2	ECN, PFC, ETS, DCBX, iNoF
MPLS L2/L3 VPN	L3 MPLS VPN	MPLS LDP, MPLS GR, M-VRF, MPLS L3VPN, MPLS OAM, IPv6 MPLS L3VPN, MPLS TE, MPLS QoS
	L2 VPLS VPN	VPWS, Martini/Kompella VPLS
Precision Time Protocol (PTP)	IEEE 1588v2	E2ETC, P2PTC
Virtualization	VST	H-VST, M-VST up to 8 unit
	MAD	MAD LACP, MAD BFD, MAD Fast-hello
Security & Network Reliability	Security	ARP Check, AARF, AARF ARP-Guard, CPU Protection, Port Security, IP Source Guard, IPv6 Source Guard, ND-Snooping, DHCP Snooping, DHCPv6 Snooping, Dynamic ARP Inspection (DAI), AARF, Host Guard, P2P MACSec, PPPoE+, 802.1x, Portal Authentication, Anti-attack detect drop flood log, URPF
	AAA	Authentication, Authorization, Accounting, Radius, TACACS+
	Network Reliability	HA, ULFD, ERPS, ULPP, Monitor Link, VRRP, VRRPv3, VBRP, BFD, CPU protection, Storm Control, Root/BPDU Guard
Management	Network Management	SNMP v1/v2/v3, MIB, RMONv2, SYSLOG, DNS, CLI, Telnet, SSHv2, HTTP/HTTPS/SSL, SFTP/FTP/TFTP, Debug, NTP
	Network Monitoring	SPAN, RSPAN, ERSPAN, VLAN SPAN, IPFIX, sFlow, LLDP, LLDP-MED, IP-SLA, CWMP, Telemetry, OpenFlow, Netconf, Restconf, BSM, MOD, Capture Packet

Model	Description
Order Information	
RS-ES-650-56XQS	48-Port 25G SFP28 interfaces, 8-Port 100G QSFP28 interfaces, 5 Fan Slots, Dual Power Slots
RS-PWR-F	V2 Version: AC input 100-240VAC/7A, 550W, output 12V_45A, current sharing, supporting hot-swap, Air rear in, front out.
RS-PWR-B	V2 Version: AC input 100-240VAC/7A, 550W, output 12V_45A, current sharing, supporting hot-swap, Air front in, rear out.
RS-FANB-65	RS-FANB-65, Modular Fan Slot, Hot-swappable, Air front in rear out
RS-FANF-65	RS-FANF-65, Modular Fan Slot, Hot-swappable, Air rear in front out

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