Product overview

RZ-S6454F-48V6X is a new generation of high-performance data center switche launched by UNIPOE for high-performance cloud computing, data center and high-end campus network. The advanced hardware infrastucture,it provides the highest switching performance and rich data center service features in the industry.

The product supports up to 1.86TBps switching capacity, further integrating VxLAN routing, VxLAN BRIDGING, and EVPN VxLAN on the basis of providing high-performance L2/L3/L4 wire speed switching services. Supporting multiple network services, such as BFD, DLDP, IPv6, network security, traffic analysis, and virtualization, combined with various data center high reliability technologies, such as uninterrupted upgrade, uninterrupted forwarding, graceful restart, and redundancy protection,etc., thus ensuring the longest time uninterrupted communication capability of the network.

Intelligent chip green energy saving technology significantly reduces energy consumption, low carbon and environmental protection, effectively reduces date center operating costs tand provides a perfect solution for the green and sustainable development of the network.

Product Features

Build a network of non-blocking data centers with powerful caching capabilities

RZ-S6454F-48V6X for next-generation data centers and cloud computing are wire-speed products, which are in line with the development trend of "east-west" data center traffic and are suitable for next-generation data centers with high traffic.It can meet the requirements of the Spine-Leaf full three-layer network infrastucture design.

RZ-S6454F-48V6X provides 48 x 25G ports and 6 x 100G Ports, all ports are capable of wire-speed forwarding. It also can provides Powerful caching capability and supports advanced cache scheduling mechanism to ensure effective utilization of the caching capacity of the device.

Data center virtualization

Supports VSU 2.0(Virtual Switch Unit) virtualization technology,virtualizing multiple physical devices into one logical device,unifying operation and management, reducing network nodes and improving network reliability. It can realize 50~200ms link failure fast switching to ensure uninterrupted transmission of critical services.

Supports cross-device link aggregation, facilitating access servers or switches for dual-active link uplink.

Overlay network for data centers

The RZ-S6454F-48V6X switch supports VxLAN and meets the requirements for Overlay network construction in data centers. It solves the problem that the traditional data center network is difficult to expand due to the insufficient number of vlans.

The basic network based on RZ-S6454F-48V6X switch can divide new subnets based on Overlay without changing the physical topology, without considering the limitation of physical network IP address and broadcast domain.

Layer 2 network expansion in the data center

By encapsulating Layer-2 packets into UDP tunnel packets, VxLAN constructe a logical layer-2 network based on L3. RZ-S6454F-48V6X supports EVPN and provides automatic VTEP discovery and authentication, which reduces the flooding on the VxLAN data plane and avoids the dependence of the VxLAN on the underlying multicast deployment, simplifies the VxLAN deployment, and improves the efficiency of building a large layer 2 network. It better meets the requirements for deploying large layer 2 networks in data centers.

RDMA Lossless Ethernet

It realizes lossless Ethernet low-delay forwarding based on RDMA (Remote Direct Memory Access), optimizes service forwarding performance, greatly reduces the cost of single bit of the whole network in operation, and improves the competitiveness of the product.

Hardware-based traffic visualization

In combination with the hardware capabilities provided by the chip, end-to-end traffic visualization can be implemented in a complex multi-path and multi-node network, and the forwarding path and delay of each session can be centrally monitored, greatly improving fault location efficiency.

Carrier-class reliability protection

RZ-S6454F-48V6X supports power redundancy, built-in redundant power modules, and modular fan components. All power modules and fan modules can be hot-pluggable to guarantee undisturbed switching operation. In addition, the switch support fault detection and automatic alarms for the power and fan modules, and can automatically adjust the fan speed based on temperature changes to better adapt to the data center environment. It also provides device-level and link-level reliability protection. Adopt over current protection, over voltage protection and over heat protection technology.

The switch further supports rich link reliability technologies, such as fast ring protection and fast link switching.

Perfect RESTART of GR and fast forwarding detection by BFD are supported. When multiple services and heavy traffic are carried on the network, the convergence time of the network is not affected, ensuring the normal development of services.

IPv4/IPv6 dual-stack protocol multi-layer switching

The hardware of RZ-S6454F-48V6X switch supports IPv4/IPv6 dual-stack multi-layer line speed switching, distinguishes and processes IPv4 and IPv6 packets, and supports various Tunnel technologies (including manual Tunnel, automatic Tunnel, and ISATAP Tunnel). It can be planned according to IPv6 network requirements and network status. Provides flexible IPv6 inter-network communication solutions.

Supports various IPv4 routing protocols, including static routes, RIP, OSPF, IS-IS, and BGP4, allowing users to flexibly select suitable routing protocols to form networks in different networks.

Supports a variety of IPv6 routing protocols, including static routes, RIPng, OSPFv3, and BGP4+. You can flexibly select an appropriate routing protocol to build a network, whether upgrading an existing network to an IPv6 network or creating an IPv6 network.

Flexible and comprehensive security policies

The RZ-S6454F-48V6X switch has a variety of internal mechanisms to effectively prevent and control virus transmission and hacker attacks, such as DoS attack prevention, anti-hacker IP scanning mechanism, port ARP packet validity check, various hardware ACL policies, keep the network green.

Supports hardware-based IPv6 ACLs to control the access of IPv6 users on the edge of the network, even if there are IPv6 users on the IPv4 network. The ACL allows both IPv4 and IPv6 users to coexist on the network and controls the access of IPv6 users, for example, restricting the access to sensitive network resources.

Industry-leading hardware CPU protection mechanism, which is an unique CPU protection policy (CPP technology) , distinguishes the data flows sent to the CPU and process adta according to queue

priorities. In addition, bandwidth limiting is implemented as required to fully protect the CPU from illegal traffic, malicious attacks, and resource consumption, ensuring CPU security and switch security. Hardware can flexibly bind a port or switch to user IP and MAC addresses, strictly limiting user access on the port or switch.

The siwtch support Telnet access control based on source IP addresses. The measure prevents unauthorized uswers or hackers from attacking or controlling devices and hereby enhances security of the device. Secure Shell (SSH) and SNMPv3 encrypt management information in Telnet and SNMP processes to ensure device information security and prevent hackers from attacking and controlling devices

Prevents the use of the network by unauthorized users and ensure the rational use of the network by legitimate users, such as multi-element binding, port security, time ACL, and bandwidth limiting based on data flow, to meet the requirements of enterprise networks and campus networks to strengthen the control of visitors and limit the communication of unauthorized users.

Advanced management

Supports rich management ports, such as Console, OBB, and USB ports, SNMPv1, V2, and V3, and supports a universal network management platform. Supports CLI, WEB-BASED NMS, TELNET, and cluster management, which simplify device management and provide various encryption modes such as SSH2.0 and SSL, ensuring network security.

The switch supports SPAN/RSPAN mirroring and multiple mirroring observing ports, offering users high visibility and transparency for easy maintenance. The switch also provide a wide range of network traffic reports to help users optimize network structure and adjust resources deployment accordingly.

Product Specifications

Model	RZ-S6454F-48V6X
Interface	48 个 25G SFP28 ports 6 个 100G QSFP28 ports
PoE Port	/
PoE Power on RJ45	/
PoE Power Budget	/
Power supply	400W
Managed Ports	1OOB port、1Console port 、1 USB port
Function switch	/
Reset Key	/
Standard	IEEE802.3ae (10GBase) 、IEEE802.3ak、IEEE802.3an 、IEEE802.3x、IEEE802.3ad(Link aggregation)、IEEE802.1p、IEEE802.1x、IEEE802.1Q、IEEE802.1D（STP）、IEEE802.1w（RSTP）、IEEE802.1s（MSTP）、IGMP Snooping 、MLD Snooping 、Jumbo Frame
Port Specification	/
Network media	/
Transfer Mode	Store-and-forward
Switching Capacity	1.86Tbps
Packet Forward Speed	1050Mpps
Packet Buffer	/
MAC Address Table	/
Jumbo frame	9014 Bytes
LED Indicator	PWR，SYS，LNK/ACT
Environment Detection	/
Fan Quantity	4
Power	AC：100V-240V，50Hz±10% Hotplug Powersupply （Option）
Operating Temperature&Humidi	0℃-40℃，10%-90% non-condensing

ty	
Storage Temperature&Humidity	-20℃-70℃；5%-95% non-condensing
Electrostatic standard	/
Green energy saving	/
Certificate	/
Dimensions(L*W*H)	445*388*44（mm）
N.W(kg)	8.9kg
Installation	Rack mounting
MTBF	100000H

Software Specification

VLAN	Support port based, protocol based and MAC based VLANs PVLAN、Super VLAN、Voice VLAN、VLAN Mapping、QinQ、、GVRP
L2 Protocol	IEEE802.3ae(10GBase), IEEE802.3ak, IEEE802.3an ，IEEE802.3x, IEEE802.3ad(Link aggregation), IEEE802.1p, IEEE802.1x, IEEE802.1Q, IEEE802.1D(STP), IEEE802.1w (RSTP), IEEE802.1s(MSTP), IGMP Snooping，MLD Snooping，Jumbo Frame
L3 Protocol (IPv4)	BGP4、OSPFv2、RIPv1、RIPv2、MBGP、LPM Routing、Policy-based Routing、Route-policy、ECMP、WCMP、VRRP、IGMP v1/v2/v3、DVMRP、PIM-SSM/SM/DM、MSDP、Any-RP
IPv6 Basic Protocol	ND(Neighbor discovery), ICMPv6, Path MTU Discovery, DNSv6, DHCPv6, ICMPv6, ICMPv6 ACLv6, TCP/UDP for IPv6, SNMP v6, Ping /Traceroute v6, Telnet/SSH v6, VRRP for IPv6
IPv6 Features	Static routes, equal-cost routes, and policy-based routes, OSPFv3, RIPng, BGP4+, MLDv1/v2, PIM-SMv6, Manual tunnel, automatic tunnel, IPv4 over IPv6 tunnel, ISATAP tunnel and so on.
Data Center Features	Support VxLAN routing and VxLAN bridging Support EVPN VxLAN
Visualization	Support sFLOW sample
QoS	Support 802.1p, DSCP, AND ToS EXP priority mapping, ACL traffic classification, priority marking Mark/Remark, SP, WRR, DRR, SP+WRR, SP+DRR, and WRED
High reliability design	Supports BFD detection, DLDP, DLDP protection, ERPS Ethernet protection, ULPP uplink detection, UDLD unidirectional link detection, power supply 1+1 redundancy backup, fan redundancy design, and all boards and power modules support hot swap
Safety features	Anti-ddos attacks, illegal packet detection, data encryption, anti-source IP spoofing, anti-IP scanning, RADIUS/TACACS, standard, extended, and VLAN-based IPv4/ V6 ACL packet filtering, broadcast packet suppression, DHCP Snooping, anti-gateway ARP spoofing, and ARP Check, supports hierarchical user management, IP Source Guard, and CPU protection.

Management style	SNMP V1 / V2 / V3, Telnet, Console, OOB, RMON, SSHv1/ V2, FTP/TFTP file download management, SUPPORTS NTP clock, Syslog, SPAN, RSPAN, ERSPAN, Telemetry, PING and Tracer T. Fan alarms, power alarms, and temperature alarms are supported.
Other Protocol	DHCP Client、DHCP Relay、DHCP Server、DNS Client、UDP relay、ARP Proxy、Syslog

Ordering information

Model	Product information
RZ-S6454F-48V6X	48V（SFP28）+6X（QSFP28），1 OOB port，1 Console port DateCenter Switch

40G 100G Optical Transceiver Module	Product information
OQM8500MD-K1	40G QSFP+ Multimode, 2-Wire & Duplex（1Km，TX850/RX850nm，MPO）
OQM8500MD-K01	40G QSFP+Multimode,2-Wire & Duplex（100m，TX850/RX850nm，MPO）
OQM1300MX-K10	40G QSFP+Singlemode，2-Wire & Duplex（10Km，TX1310/RX1310nm，LC,DDM）
OXM8500MD-K01	100G QSFP28 Multimode，2-Wire & Duplex（100m，TX850/RX850nm，MPO）
OXM1300MX-K10	100G QSFP28 SingleMode，2-Wire & Duplex（1Km，TX1310/RX1310nm，MPO）