

Quidway® S3300 Series Switches





Product Overview

The Quidway S3300 series switches (hereinafter referred to as the S3300s) are new generation Layer 3 Ethernet switches developed by Huawei to carry various services on the Ethernet, which provide powerful Ethernet functions for carriers and enterprise customers. Based on the new generation high-performance hardware and Huawei Versatile Routing Platform (VRP) software, the S3300 provides the enhanced selective QinQ function and capability to replicate multicast packets between VLANs at the line speed, and supports carrier-class reliability technologies such as Smart Link (applicable to tree networks) and RRPP (applicable to ring networks), as well as the Ethernet OAM function. The S3300 can be used as access devices in buildings or applied to the access layer and aggregation layer of campus networks. The S3300 is easy to install. It supports automatic configuration and plug-and-play, which dramatically reduces costs of network deployment.

The S3300 is case-shaped with a height of 1 U. The S3300 series are classified into SI (standard) and EI (enhanced) models, including S3328TP-SI, S3328TP-EI, S3328TP-EI-24S, S3328TP-PWR-EI, S3352P-SI, S3352P-EI, S3352P-EI-24S, S3352P-EI-48S, and S3352P-PWR-EI. The SI models support Layer 2 functions and basic Layer 3 functions; the EI models support complex routing protocols and abundant services and features.

Produce Model and Appearance

The S3300 series consist of the following models:



S3328TP-SI/EI: It provides twenty-four 10/100Base-TX ports, two 1000Base-X SFP ports, two 1000M combo ports (10/100/1000Base-T or 100/1000Base-X). It has two models: one uses DC power modules and the other uses AC power modules.



S3328TP-PWR-EI: It provides twenty-four 10/100Base-TX ports, two 1000Base-X SFP ports, two 1000M combo ports (10/100/1000Base-T or 100/1000Base-X). It uses AC power modules and supports the PoE function.



S3328TP-EI-24S: It provides twenty-four 10/100Base-FX ports, two 1000Base-X SFP ports, two 1000M combo ports (10/100/1000Base-T or 100/1000Base-X). It has two models: one uses DC power modules and the other uses AC power modules.

S3352P-SI/EI



S3352P-SI/EI: It provides forty-eight 10/100Base-TX ports, two 100/1000Base-X SFP ports, and two 1000Base-X SFP ports. It has two models: one uses DC power modules and the other uses AC power modules.

S3352P-PWR-EI



S3352P-PWR-EI: It provides forty-eight 10/100Base-TX ports, two 100/1000Base-X SFP ports, and two 1000Base-X SFP ports. It uses AC power modules and supports the PoE function.

S3352P-EI-24S



S3352P-EI-24S: It provides twenty-four 10/100Base-TX ports, twenty-four 100Base-FX SFP ports, two 100/1000Base-X SFP ports, and two 1000Base-X SFP ports. It has two models: one uses DC power modules and the other uses AC power modules.

S3352P-EI-48S



S3352P-EI-48S: It provides forty-eight 100Base-FX SFP ports, two 100/1000Base-X SFP ports, and two 1000Base-X SFP ports. It has two models: one uses DC power modules and the other uses AC power modules.



Powerful Service Support

- The S3300 provides the enhanced selective QinQ function to add outer VLAN tags to packets, without occupying ACL resources. The S3300 can map the CoS value in the inner VLAN tag of a packet to the outer VLAN tag or change the CoS value in the outer VLAN tag. In addition, the S3300 can flexibly mark the QoS classes of different services to carry various services.
- The S3300 supports 1 K multicast groups and supports IGMP snooping, IGMP filter, fast leave, and IGMP proxy. The S3300 supports line-speed replication of multicast packets between VLANs, multicast load balancing among member interfaces of a trunk, and controllable multicast, meeting requirements for IPTV services and other multicast services.
- The S3300 provides the Multi-VPN-Instance CE (MCE) function to isolate users of different VLANs on a device, which ensures data security and reduces investments of customers.

Abundant QoS Policies and Security Mechanisms

- The S3300 implements complex traffic classification based on information such as the quintuple, IP preference, ToS, DSCP, IP protocol type, ICMP type, TCP source port, VLAN ID, Ethernet protocol type, and CoS. It supports the flow-based two-rate and three-color CAR. Each interface supports eight priority queues and multiple queue scheduling algorithms such as WRR, DRR, SP, WRR+SP, and DRR+SP, which effectively ensures the quality of voice, video, and data services.
- The S3300 provides multiple security measures to protect information security. It can defend against Denial of Service (DoS) attacks, attacks to networks, and attacks to users. DoS attacks include SYN Flood attacks, Land attacks, Smurf attacks, and ICMP Flood attacks. Attacks to networks refer to STP BPDU/root attacks. Attacks to users include bogus DHCP server attacks, man-in-the-middle attacks, IP/MAC spoofing attacks, DHCP request flood attacks, and DoS attacks by changing the CHADDR field of packets.
- The S3300 listens to the MAC addresses or IP addresses, address lease, VLAN IDs, and interfaces by establishing and maintaining a DHCP snooping binding table. In this way, IP addresses and access interfaces of DHCP users



can be tracked. The S3300 directly discards invalid packets that do not match binding entries, such as ARP spoofing packets and packets with tampered IP addresses, to prevent man-in-the-middle attacks to campus networks that hackers initiate by using ARP packets. The trusted interface can also be configured to ensure validity of the DHCP server.

- The S3300 supports strict learning of ARP entries to prevent ARP spoofing attackers from exhausting ARP entries so that users can access the Internet normally. It also supports IP source check to prevent DoS attacks caused by MAC address spoofing, IP address spoofing, and MAC/IP spoofing.
- The S3300 supports centralized MAC address authentication, 802.1x authentication, and NAC function. User information such as the user name, IP address, MAC address, VLAN, access interface, and flag indicating whether anti-virus software is installed on the client can be bound statically or dynamically, and policies (VLAN, QoS, and ACL) can be delivered dynamically.
- The S3300 can limit the number of MAC addresses learned on an interface to prevent attackers from exhausting MAC address entries by using bogus source MAC address. In this way, MAC addresses of normal users can be learned and flooding is prevented.

PoE Function

- The S3300 can use PoE power modules with different power levels to provide the Power over Ethernet (PoE) function. Powered devices (PDs) such as IP Phone, WLAN AP, Security, and Bluetooth AP can be connected to the S3300 through ethernet cable. The S3300 provides -48V DC power for the connected PDs. As the power sourcing equipment (PSE), the S3300 complies with IEEE 802.3af and 802.3at (PoE+) and is compatible with PDs that do not comply with 802.3af or 802.3at. Each port provides a maximum power of 30 W, complying with IEEE 802.3at. The PoE+ function increases the maximum power of each port and implements intelligent power management in high-power applications, which helps you use PDs conveniently. In addition, the S3300 can work in power-saving mode. The S3300 PWR series support improved PoE solutions and you can determine whether a PoE port provides power and the time a PoE port provides power.

Good Extensibility and High Reliability Protection Mechanism

- The S3300 supports intelligent stacking (iStack). Multiple S3300s start to construct a virtual chassis-shaped structure immediately after stacking cables are connected. Stack members are classified into master, slave, and backup switches. The backup switch reduces the duration of service interruption when the master switch fails. The S3300 supports intelligent upgrade. Therefore, the software version of a new switch does not need to be changed when it is added to a stack. The stacking technology enables you to connect multiple switches through cables to expand the system capacity and manage switches in a stack by using a single IP address, which greatly reduces costs of system expansion, operation, and maintenance. Compared with traditional networking technologies, the iStack stacking technology has advantages in extensibility, reliability, and system architecture.
- Besides traditional STP, RSTP, and MSTP, the S3300 supports enhanced Ethernet reliability technologies such as Smart Link and RRPP, which implements millisecond-level protective link switchover and ensures network reliability. Smart Link and RRPP both support multi-instance to implement load balancing among links, further improving bandwidth usage.
- The S3300 supports enhanced trunk (E-Trunk). With this function, a CE can be dual-homed to two PEs through an E-Trunk. E-Trunk greatly enhances link reliability between devices and implements link aggregation and load balancing between devices. Reliability of access devices is thus improved.
- The S3300 supports BFD and provides millisecond-level detection for protocols such as OSPF, IS-IS, VRRP, and PIM to improve network reliability. Conforming to IEEE 802.3ah and 802.1ag, the S3300 supports point-to-point Ethernet fault management. It can detect faults in the last mile of a direct link on the user side. Ethernet OAM improves network management and maintenance capabilities on Ethernet and guarantees a stable network. The reliability design of the S3300 is highly expansible and compatible. The S3300 can work with devices on the incumbent network, which protects investments of customers and enables customer to deploy new services.

Considerate Maintenance-free Design and Manageability

- The S3300 adopts a maintenance-free design and supports batch remote upgrade. Adopting a unique lightning protection design, the S3300 reduces lightning damages by 88% and its lightning damage rate is only 1/8 of counterpart products in the industry. The S3300 provides multiple maintenance and management modes for you to monitor various data. In addition, it supports Ethernet OAM (IEEE 802.3ah and 802.1ag), HGMPv2, SNMP, NTP, SSH V2.0, HWTACACS+, RMON, port-based traffic statistics, and NQA.
- The S3300 supports GVRP, which dynamically assigns, registers, and propagates VLAN attributes to reduce the network administrator's workload and ensure correct configuration of VLANs. The GVRP technology implements dynamic configuration of VLANs. On a complicated network, GVRP can simplify VLAN configuration and reduce network communication faults caused by incorrect configuration of VLANs.
- The S3300 supports MUX VLAN. The MUX VLAN function is used to isolate Layer 2 traffic between interfaces on a VLAN. Subordinate VLANs can communicate with the MUX VLAN but cannot communicate with each other. MUX VLAN is usually applied to enterprise intranets. With this function, a user interface can communicate with a server interface but cannot communicate with other user interfaces. MUX VLAN prevents communication between network devices connected to some interfaces or interface group but allows these devices to communicate with the default gateway.
- Upgrade and service delivery can be completed at one time, which simplifies management and performance in the future.

Unique Fan-free and Noise-free Design

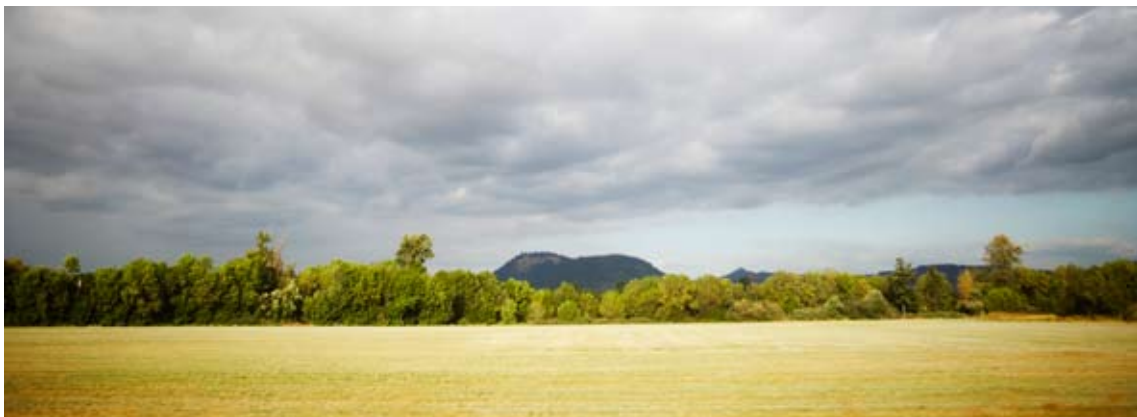
- The 24-port model of the S3300 adopts a fan-free design, which dramatically reduces the power consumption and noises of the equipment. In addition, this design reduces mechanical faults and protects the equipment against damages caused by condensed water and dusts.
- The S3300 adopts new generation integrated chips and power-saving circuit design to ensure even heat dissipation. It also supports idle port sleep to further reduce power consumption.
- Radiation of the S3300 is low and complies with radiation standards of electric appliances, so the S3300 has no harm to the human body and is more environment friendly.

Powerful Lightning Protection Capability

- The S3300 adopts a Huawei patented lightning technology to prevent lightning induced over voltage. All ports have a lightning protection capability of IEC61000-4-5 10/700us 6 KV. Compared with conventional lightning protection technologies, the Huawei patented lightning technology greatly reduces the possibility of lightning damage on the equipment even in atrocious environments or even in scenarios where grounding cannot be implemented.

Abundant IPv6 Features

- The S3300 hardware supports the IPv6/IPv6 dual stack, IPv6 over IPv4 tunnels (including manual tunnels, 6to4 tunnels, and ISATAP tunnels), and Layer 3 line-speed forwarding. Therefore, the S3300 can be deployed on IPv4 networks, IPv6 networks, and networks that run both IPv4 and IPv6. This makes networking flexible and enables a network to migrate from IPv4 to IPv6.
- The S3300 supports abundant IPv6 routing protocols including RIPng and OSPFv3. It uses the IPv6 Neighbor Discovery Protocol (NDP) to manage packets exchanged between neighbors. It also provides the Path MTU Discovery (PMTU) mechanism to select a proper MTU on the path from the source to the destination, thus optimizing network resources and obtaining the maximum throughput.



Product Specifications

Item	S3300-SI		S3300-EI							
	S3328TP-SI	S3352P-SI	S3328TP-EI	S3328TP-PWR-EI	S3328TP-EI-24S	S3352P-EI	S3352P-EI-24S	S3352P-EI-48S	S3352P-PWR-EI	
Port	100M port	24*10/100Base-TX	48*10/100Base-TX	24*10/100Base-TX	24*10/100Base-TX	24*100Base-FX	48*10/100Base-TX	24*10/100Base-TX, 24*100Base-FX	48*100Base-FX,	48*10/100Base-TX
	1000M port	2*1000Base-X, 2*(10/100/1000Base-T or 100/1000Base-X)	2*100/1000Base-X, 2*1000Base-X	2*1000Base-X, 2*(10/100/1000Base-T or 100/1000Base-X)	2*1000Base-X, 2*(10/100/1000Base-T or 100/1000Base-X)	2*1000Base-X, 2*(10/100/1000Base-T or 100/1000Base-X)	2*100/1000Base-X, 2*1000Base-X	2*100/1000Base-X, 2*1000Base-X	2*100/1000Base-X, 2*1000Base-X	2*100/1000Base-X, 2*1000Base-X
Forwarding performance	9.6Mpps	13.2Mpps	9.6Mpps	9.6Mpps	9.6Mpps	13.2Mpps	13.2Mpps	13.2Mpps	13.2Mpps	
Port switching capacity	12.8Gbps	17.6Gbps	12.8Gbps	12.8Gbps	12.8Gbps	17.6Gbps	17.6Gbps	17.6Gbps	17.6Gbps	
Backplane switching capacity	64G									
MAC address table	<p>Complies with IEEE 802.1d.</p> <p>Supports 16 K MAC addresses.</p> <p>Supports dynamic learning and aging of MAC addresses.</p> <p>Supports static, dynamic, and blackhole MAC address entries.</p> <p>Filters packets based on source MAC addresses.</p>									
VLAN	<p>Supports 4 K VLANs.</p> <p>Supports guest VLANs, voice VLANs, and super VLANs.</p> <p>Supports VLAN allocation based on MAC addresses, protocols, and IP subnets.</p> <p>Supports QinQ.</p> <p>Supports selective QinQ.</p> <p>Supports 1:1 VLAN mapping.</p> <p>Supports N:1 VLAN mapping.</p>									
Reliability	<p>Supports RRRP (ring topology, intersecting rings, and multi-instance) and protective switchover within 50 ms.</p> <p>Supports the Smart Link tree topology and Smart Link multi-instance and provides millisecond-level protective switchover.</p> <p>Supports STP, RSTP, and MSTP.</p> <p>Supports BPDU protection, root protection, and loop protection.</p>									
	N/A			Support BFD for OSPF, BFD for IS-IS, BFD for VRRP, and BFD for PIM.						

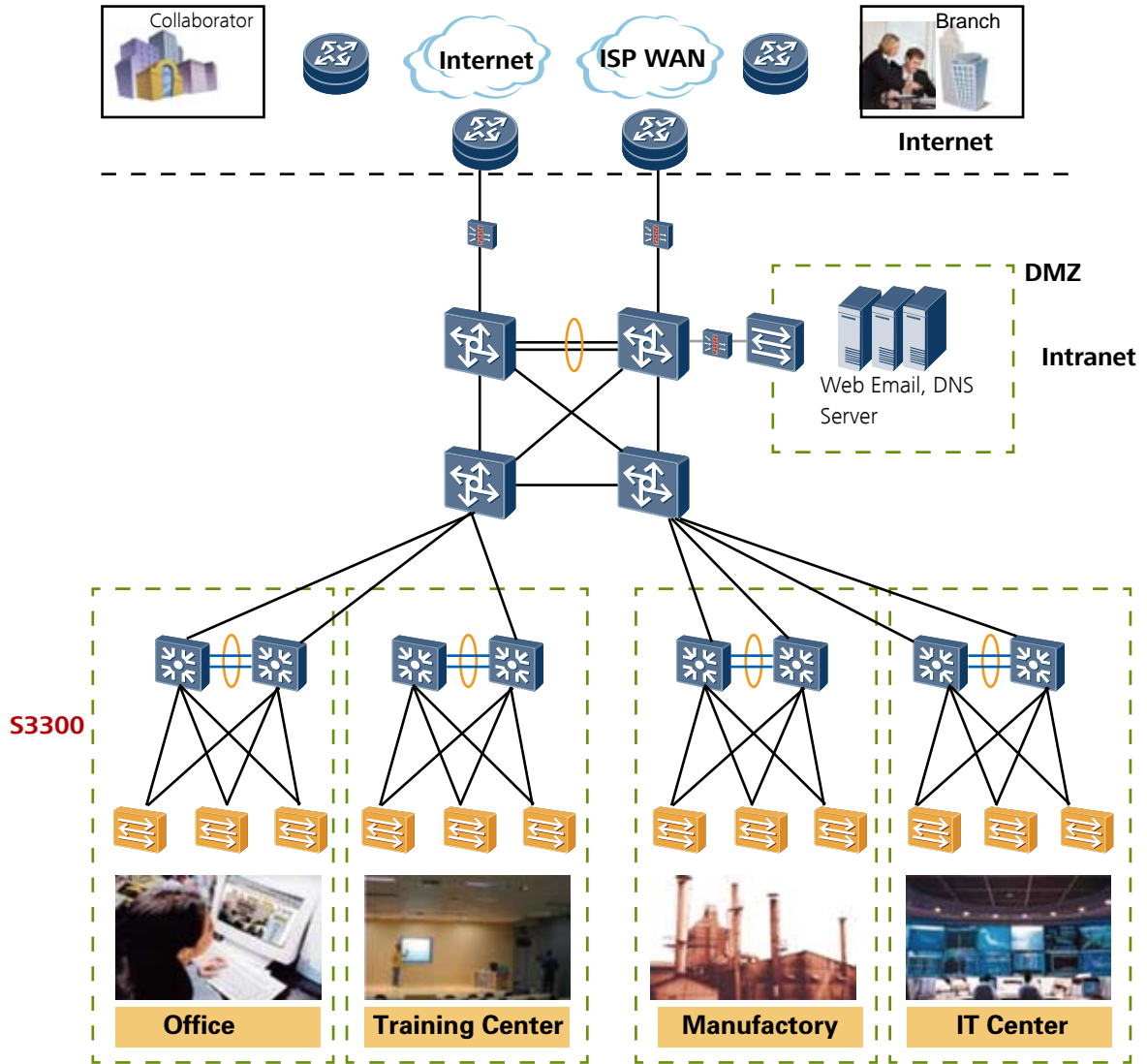
Item	S3300-SI		S3300-EI						
	S3328TP-SI	S3352P-SI	S3328TP-EI	S3328TP-PWR-EI	S3328TP-EI-24S	S3352P-EI	S3352P-EI-24S	S3352P-EI-48S	S3352P-PWR-EI
IP routing	Supports static route, RIP-1, RIP-2, and ECMP.								
	N/A		Supports OSPF, IS-IS, and BGP.						
IPv6 features	<p>Supports Neighbor Discovery (ND).</p> <p>Supports PMTU.</p> <p>Supports IPv6 Ping, IPv6 Tracert, and IP v6 Telnet.</p> <p>Supports manually configured tunnels.</p> <p>Supports 6to4 tunnels.</p> <p>Supports ISATAP tunnels.</p> <p>Supports ACLs based on the source IPv6 address, destination IPv6 address, Layer 4 ports, or protocol type.</p> <p>Supports MLD v1/v2 snooping.</p>								
Multicast	<p>Supports 1 K multicast groups.</p> <p>Supports IGMPv1/v2/v3 snooping and IGMP fast leave.</p> <p>Supports multicast VLAN and multicast replication between VLANs.</p> <p>Supports multicast load balancing among member interfaces of a trunk.</p> <p>Supports controllable multicast.</p> <p>Supports port-based multicast traffic statistics.</p>								
	N/A		Supports IGMP v1/v2/v3, PIM-SM, and PIM-DM.						
QoS/ACL	<p>Supports rate limit on packets sent and received by an interface.</p> <p>Supports packet redirection.</p> <p>Supports interface-based traffic policing and two-rate and three-color CAR.</p> <p>Supports eight queues on each interface.</p> <p>Supports WRR, DRR, SP, WRR+SP, and DRR+SP queue scheduling algorithms.</p> <p>Supports re-marking of the 802.1p priority and DSCP priority.</p> <p>Supports packet filtering on Layer 2 to Layer 4, filtering out invalid frames based on the source MAC address, destination MAC address, source IP address, destination IP address, port number, protocol, and VLAN ID.</p> <p>Support queue-based rate limiting and traffic shaping on interfaces.</p>								
Security	<p>Supports hierarchical user management and password protection.</p> <p>Supports DoS attack defense and ARP attack defense.</p> <p>Supports the binding of the IP address, MAC address, interface, and VLAN.</p> <p>Supports interface isolation, interface security, and sticky MAC.</p> <p>Supports blackhole MAC addresses.</p> <p>Supports the limit on the number of learned MAC addresses.</p> <p>Supports IEEE 802.1x authentication and the limit on the number of users on an interface.</p> <p>Supports multiple authentication methods including AAA authentication, RADIUS authentication, HWTACACS+ authentication, and NAC.</p> <p>Supports SSH v2.0.</p> <p>Supports CPU protection.</p>								
Lightning protection	All service interfaces have a lightning protection capability of 6 KV, and additional lightning protection devices are added to increase the lightning protection capability to 15 KV.								

Item	S3300-SI		S3300-EI						
	S3328TP-SI	S3352P-SI	S3328TP-EI	S3328TP-PWR-EI	S3328TP-EI-24S	S3352P-EI	S3352P-EI-24S	S3352P-EI-48S	S3352P-PWR-EI
Management and Maintenance	Supports iStack Supports MAC Forced Forwarding (MFF). Supports remote configuration and maintenance through Telnet. Supports Auto-Config. Supports the virtual cable test. Supports Ethernet OAM (IEEE 802.3ah and 802.1ag). Supports port mirroring and RSPAN (remote port mirroring). Supports SNMPv1/v2/v3 and RMON. Supports MUX VLAN and GVRP. Supports the iManager NMS system and Web management. Supports Auto-Config and HGMP. Supports SSHv2. Supports system logs and multi-level alarms.								
Working Environment	Working temperature: 0 C–50 C (long term); -5 C–55 C (short term); relative humidity: 10%–90% (non-condensing)								
Power supply	AC: Rated voltage: 100 V–240 V AC; 50/60 Hz Maximum voltage: 90 V to 264 V AC; 50/60 Hz DC: Rated voltage: –48 V to –60 V DC Maximum voltage: –36 to –72 V DC Note: POE Hosts do not support DC power modules.								
Dimensions (width x depth x height)	S3328TP-EI/SI, S3328TP-EI-24S, S3352P-EI/SI: 442 × 220 × 43.6 S3328TP-PWR-EI, S3352P-EI-48S, S3352P-EI-24S, S3352P-PWR-EI: 442 × 420 × 43.6								
Weight	S3328TP-EI/SI: < 2.5Kg , S3328TP-EI-24S: < 2.6Kg , S3352P-EI/SI: <3Kg; S3352P-EI-24S/48S: < 4.8Kg S3328TP-PWR-EI: <4.03Kg (without power modules); S3352P-PWR-EI: <4.31Kg (without power modules)								
Power consumption	S3328TP-EI/SI >8.5W S3328TP-EI-24S >18.5W S3352P-EI/SI >20W S3352P-EI-24S >30W S3352P-EI-48S >30W S3328TP-PWR-EI: 165W, PoE power 124W S3352P-PWR-EI: 170W, PoE power 124W								

Application scenario

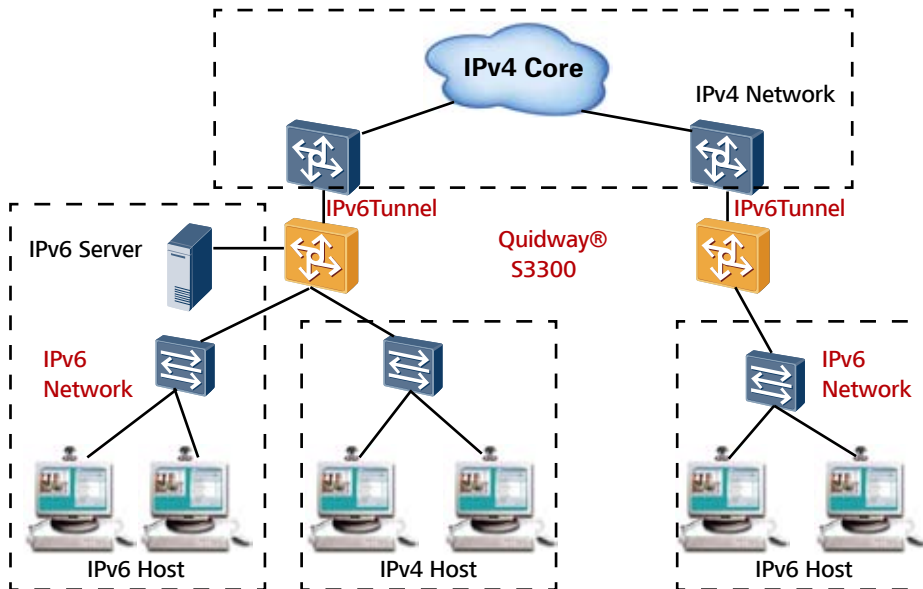
Application in the access layer of large enterprise/campus network

The S3300 can function as an access device of large-scale enterprise networks.



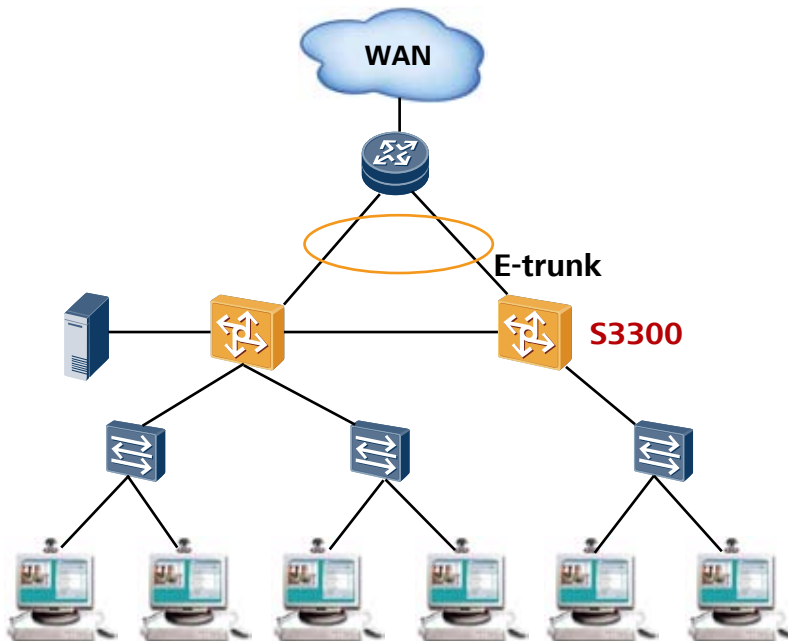
Application of IPv4/IPv6 Dual-Stack

The S3300 supports IPv4/IPv6 dual stack and tunnel protocols. In the initial phase of IPv6, IPv4 and IPv6 are used on most networks. Based on dual stack and rich tunnel protocols supported by the S3300, the S3300 can be used to build networks flexibly. The investments of customers are thus saved to a maximum extent.



Application in Small Enterprise

Middle- and small-scale enterprises can use S3300s as core switches and implement mutual access among departments and users across network segments by using routing functions of the S3300s. You can use the stacking technology to add multiple S3300s to a stack so that device performance is improved and interfaces are extended. In addition, you can use E-Trunk to increase bandwidth and improve reliability.



Product List

1. List of S3300 series Ethernet switches and optical modules

Product Description
S3328TP-SI (input voltage: 220 V AC or -48 V DC)
S3328TP-EI (input voltage: 220 V AC or -48 V DC)
S3328TP-EI-24S (input voltage: 220 V AC or -48 V DC)
S3352P-SI (input voltage: 220 V AC or -48 V DC)
S3352P-EI (input voltage: 220 V AC or -48 V DC)
S3352P-EI-48S (input voltage: 220 V AC or -48 V DC)
S3352P-EI-24S (input voltage: 220 V AC or -48 V DC)
S3328TP-PWR-EI (supports two hot-swappable AC power modules, with the input voltage being 220 V, supports PoE)
S3352P-PWR-EI (supports two hot-swappable AC power modules, with the input voltage being 220 V, supports PoE)
GE SFP optical module
Electrical Transceiver,SFP,Electrical Interface Module (100m,RJ45)
Optical Transceiver,ESFP,GE,Multi-mode Module(850nm,0.5km,LC)
Optical Transceiver,SFP,GE,Single Mode Module, (1310nm,10km,LC)
Optical Transceiver,eSFP,GE,Single-mode Module(1310nm,40km,LC)
Optical Transceiver,eSFP,GE,Single-mode Module(1550nm,40km,LC)
Optical Transceiver,eSFP,GE,Single-mode Module(1550nm,80km,LC)
Optical Transceiver,ESFP,GE,Single-mode Module(1550nm,100km,LC)





FE/STM-1 SFP optical module
Optical Transceiver,SFP,100M/155M,Multi-mode Module(1310nm,2km,LC)
Optical Transceiver,eSFP,100M/155M,Single-mode Module(1310nm,15km,LC)
Optical Transceiver,eSFP,FE,Single-mode Module(1310nm,40km,LC)
Optical Transceiver,eSFP,FE,Single-mode Module(1550nm,80km,LC)
BIDI-SFP SFP optical module
Optical Transceiver,SFP,GE,BIDI Single-mode Module(TX1490/RX1310,10km,LC)
Optical Transceiver,SFP,GE,BIDI Single-mode Module(TX1310/RX1490,10km,LC)
Optical Transceiver,SFP,FE,BIDI Single-mode Module(TX1310/RX1550,15km,LC)
Optical Transceiver,SFP,FE,BIDI Single-mode Module(TX1550/RX1310,15km,LC)
CWDM-SFP optical module
Optical Transceiver-eSFP-1571nm-100M~2.67Gbps, 0dBm-5dBm--28dBm-LC-80km
Optical Transceiver-eSFP-1591nm-100M~2.67Gbps-0dBm-5dBm--28dBm-LC-80km
Optical Transceiver-eSFP-1551nm-100M~2.67Gbps-0dBm-5dBm--28dBm-LC-80km
Optical Transceiver-eSFP-1511nm-100M~2.67Gbps-0dBm-5dBm--28dBm-LC-80km
Optical Transceiver-eSFP-1611nm-100M~2.67Gbps-0dBm-5dBm--28dBm-LC-80km
Optical Transceiver-eSFP-1491nm-100M~2.67Gbps-0dBm-5dBm--28dBm-LC-80km
Optical Transceiver-eSFP-1531nm-100M~2.67Gbps-0dBm-5dBm--28dBm-LC-80km
Optical Transceiver-eSFP-1471nm-100M~2.67Gbps-0dBm-5dBm--28dBm-LC-80km

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