

ST-S6500-32C: 32*100G Data Center Switch

The ST-S6500-32C switch is a new generation of high-performance, high-density data center Ethernet switch products developed by Sintai for cloud data centers and cloud computing networks. Supports 32*100G slots, 1+1 hot-swappable redundant power, 4+1 hot-swappable redundant fans with intelligent adjustable speed, spine-leaf network architecture design requirements.



Features

- **Build high-performance data center network**
 - Supports high-density 100G/40G to meet the requirements for high-performance data centers, the 100G ports are backward compatible with 40G.
- **Data center Overlay network**
 - Supports VxLAN. It can meet the requirements of data center Overlay network construction, and solve the problem that the number of VLANs in the traditional data center network is insufficient and the scale is difficult to expand.
 - Support EVPN* protocol, and the automatic discovery and authentication of VTEPs reduces the flooding of the VxLAN data plane and prevents the dependency of the VxLAN on the multicast of the underlying deployment. This simplifies the VxLAN deployment, improves the construction efficiency of the large layer-2 network, and better meets the deployment requirements of the large Layer-2 network in the data center.
- **M-LAG architecture**
 - Supports the M-LAG(Multi-chassis Link Aggregation Group)cross-device link aggregation technology. Two physical devices are virtualized into one device at the forwarding layer to achieve cross-device link aggregation. The control layer is independent from each other, which improves board-level reliability to device-level reliability.
- **Hardware-based traffic visualization**
 - Combined with the hardware capability provided by the chip itself, it can realize the end-to-end traffic visualization in the complex multi-path, multi-node network. Through protocols such as RSPAN and sFlow, the real-time network resource information of the switch can be sent to the operation and maintenance platform of the data center, and the operation and maintenance platform can analyze these real-time data, and realize the functions of network quality backtracking, fault troubleshooting, risk early warning, and architecture optimization.

➤ **Carrier-grade reliability protection**

- Multiple reliability protection at device level and link level. Adopt over current protection, over voltage protection and over heat protection technology. Built-in redundant power modules and fan modules. All power modules and fan modules can be hot-swappable without affecting the normal running of devices. The AC or DC power module can be flexibly configured according to the actual environment requirements.
- In addition, the machine supports fault detection and alarm of power supplies and fans. The fan speed can be automatically adjusted according to temperature changes to better adapt to the data center environment and achieve energy saving and emission reduction.
- Rich link reliability technologies, such as ERPS fast ring network protection mechanism, MRPP fast link switching mechanism. Supports the BFD fast forwarding detection mechanism. 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**

- The hardware supports IPv4/IPv6 dual-stack multi-layer line-speed switching, differentiates and processes IPv4 and IPv6 packets, and supports multiple Tunnel technologies (such as manual tunnel configuration, automatic tunnel, and ISATAP tunnel). It can provide flexible IPv6 inter-network communication solutions based on IPv6 network requirements and network status.

Rich IPv4 routing protocols, including static routes, RIP, OSPF, IS-IS, and BGP4. A variety of IPv6 routing protocols, including static routes, RIPng, OSPFv3, and BGP4+, can be flexibly selected to build a network whether upgrading an existing network to an IPv6 network or creating an IPv6 network.

➤ **Comprehensive security control strategy**

- Various internal mechanisms can effectively prevent and control virus transmission and hacker attacks, such as preventing DoS attacks and checking the validity of ARP packets on ports.
- Multiple hardware ACL policies are secure and reliable. Support inbound and outbound ACLs, and VLAN-based ACLs are delivered. Control illegal users to use the network and ensure legitimate users to use the network properly, such as multi-group binding, port security, time ACL, and bandwidth limiting based on data flow, to meet the requirements of enterprise networks and campus networks to strengthen control over visitors and limit communication between unauthorized users.

➤ **Excellent management ability**

- Supports diversified management interfaces, such as Console port, MGMT port, and USB port, SNMPv1/v2/v3, and universal network management platform. Supports the CLI command line, Web NMS, and TELNET to facilitate device management, and supports encryption modes such as SSH2.0 and SSL to make management more secure. Supports file upload and download management in TFTP mode.

➤ **Flexible duct orientation options**

- In order to better match the air duct design of the data center, the switch provides users with a more flexible air duct scheme. When the front and rear air ducts are implemented, users can also select different fan modules to realize different wind directions (power side air or port side air).

Hardware specification

Model	ST-S6500-32C
Interface	32*100GE QSFP28 Slots
Management port	1*MGMT Port, 1*Console Port, 1*USB Port, Meet the USB 2.0 standard
Transmission mode	Support store-forward mode and cut-through mode
Packet forward speed	2800Mpps
Switching capacity	6.4T
Dimension(L*W*H)	440mm(W) * 470mm(D) * 43mm(H) (1U height)
Full weight	Approx.11kg
Fan	Five hot-swappable fan modules for front and rear ventilation
Power supply	Dual module power supply
AC input	Rated voltage range: 100~240V Maximum voltage range: 90~264V Frequency: 50~60Hz Rated input current: 5~10A
DC input	Input voltage range: 180~310V Input current range: 5A
Power consumption	Static (Dual AC): 173W; Maximum (Dual AC): 512W
Operating temperature	0°C ~ 40 °C
Storage temperature	-40 °C ~ +70 °C
Operating humidity	10% ~ 90% non-condensing
Storage humidity	5% ~ 90% non-condensing

Software specification

VLAN	GVRP	
	PVLAN	
	Voice VLAN	
	VLAN Translation	
	Q-in-Q	
	Subnet-based VLANs	
	Protocol-based VLANs	
	MAC-based VLAN	
MAC address	Dynamic, static and black hole MAC address table entries	
	MAC address auto learning and aging	
	MAC address learning restrictions	
	Source MAC address filtering	
Multicast	IGMP Snooping v1/v2/v3	
	MLD Snooping v1/v2	
	PIM-DM, PIM-SM, PIM-SSM	
	Multicast VLAN	
	Multicast Traffic Suppression	
Qos function	Port-based rate limiting for incoming and outgoing messages	
	Stream-based rate limiting	
	Class Of Service	Based on port, source-destination MAC, source-destination IP
		802.1p
		CoS
		DSCP
		IP priority
		Source destination L4 Port
	Prioritisation Algorithm	WRR
		SP
Safety	Port Security	
	Port Isolation	
	IEEE802.1x AAA	
	ACLs	L2/L3/L4
		IPv4/v6 ACL
	User hierarchy	
	IP source protection (IP MAC port binding, IP -MAC-port-VLAN binding)	
	Dynamic ARP protection	

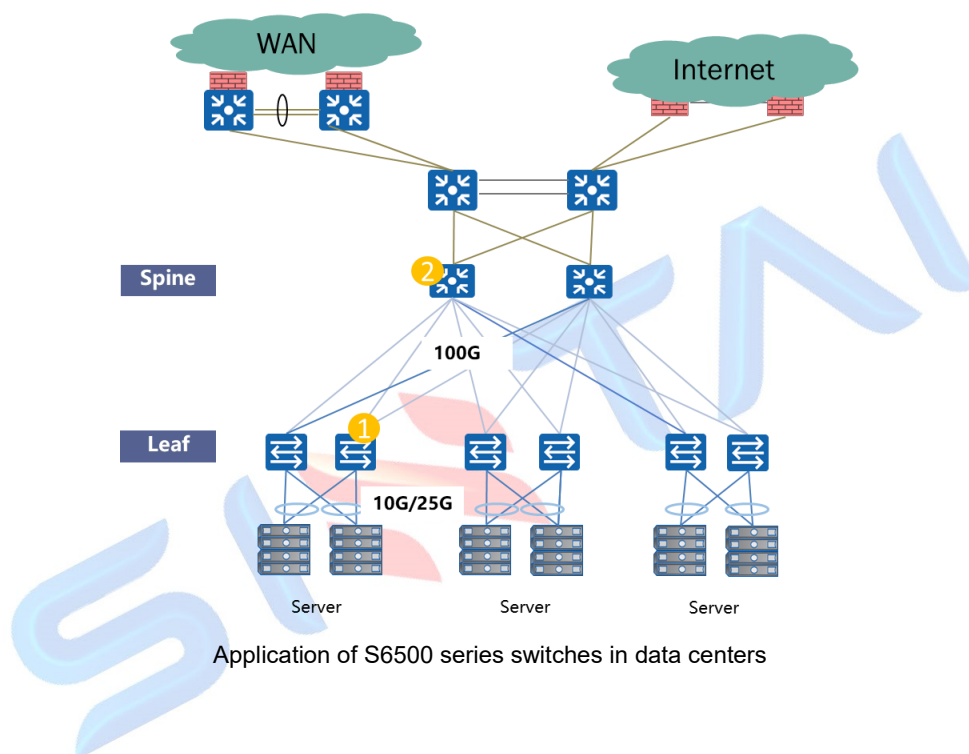
	Illegal packet detection
	Broadcast storm suppression
	RADIUS/TACACS+
	RADIUS authentication (RFC2138)
	DDoS Attack Prevention
	HTTPs and SSL
	SSH v1.5/v2.0
	DHCP Listening
	DHCP Relay
L3 protocol (IPv4)	Default Routing
	Static routes
	RIP V1/V2
	OSPF V2
	ISIS
	BGP4
	ECMP
	VRRP
IPv6 foundation	IPv6 ND
	IPv6 Web/SSL
	IPv6 NTP/SNTP
	IPv6 Telnet/SSH
	IPv6 Ping/Traceroute
	IPv6 FTP/TFTP
	IPv6 RADIUS/TACACS+
	IPv6 SNMP
IPv6 features	Static Routing
	Equivalent Routing
	OSPFv3
	RIPng
	BGP4+
	Manual tunnelling
	Automatic Tunneling
	IPv4 over IPv6 tunnelling
	ISATAP tunnelling
Data center features	VxLAN Bridging
	VxLAN Routing
	EVPN VxLAN

	M-LAG	
	RoCE v2, PFC、ECN	
MPLS	MPLS	
	VPLS	
	VPWS	
	LDP	
Visualisation	sFlow Sampling	
Reliability	STP, RSTP, MSTP	
	BPDU Guard	
	STP Root Guard	
	Loop Protection, Loop Detection	
	BFD Detection	
	Ethernet OAM	
	ULDP	
	Power supply 1+1 redundancy	
	Fan redundancy design	
	Hot-swappable power supply and fan modules	
Management and maintenance	SNMP (v1, v2c, v3)	
	RMON (1,2,3 & 9)	
	Firmware Upgrade	
	Configuration Export/Import	
	DHCP	Client
		Option 82
		Option 66
		Option 67
	Event/Error Logs	System Log
	Management Access Control	Serial Port
		Out-of-Band Management Port
		SNMP
		HTTP/HTTPS
		Telnet
	Port Mirror	
	LLDP (IEEE802.1AB), LLDP-MED	
	UDLD	
	DNS Client	
	Traceroute	
	Ping	

	DDMI
	NTP/ SNTP (RFC2030)
	Power, fan, and temperature alarms

Typical Networking

In the typical networking of data centers, the ST-S6500-48V8C switch is used as TOR switches to provide high-density 25G/10G server access. the ST-S6500-32C switch is used as spine node. In the spine-leaf network architecture, the spine nodes are interconnected with leaf nodes through 100G.



Application of S6500 series switches in data centers