ST-S6500-48V8C: 48*25G+8*100G Data Center Switch

Product Catalog

The ST-S6500-48V8C 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. It supports 48*25G slots and 8*100G slots, 1+1 hot-swappable redundant power, 4+1 hot-swappable redundant fans with flexible adjustment of fan speed, spine-leaf network architecture design requirements.



Features

Build high-performance data center network

Supports 25G slots to meet the demand for high-density access to 25G servers in high-performance data centers.
 The 25G slots can support 1G, 10G and 25G module, the 100G slots are backward compatible with 40G modules.

> 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 Product Catalog

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

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Model	ST-S6500-48V8C		
Interface	48*25G SFP28 Slots 8*100G QSFP28 Slots		
Management port	1 MGMT Port, 1 Console Port, 1 USB Port, USB 2.0 compliant		
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)		
Full weight	About 10kg		
Fan	5 hot-swappable fan modules, front and rear or rear front 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: 3.5~7.2A		
DC input	Input voltage range: 180~310V Input current range: 3.5A		
Power consumption	Static (Dual AC): 141W; Maximum (Dual AC): 441W		
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

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	MAC-based VLAN			
	Dynamic, static and black hole MAC address table entries			
MAC address	MAC address auto learning and aging			
	MAC address learning restrictions			
	Source MAC address filtering			
	IGMP Snooping v1/v2/v3			
	MLD Snooping v1/v2			
Multicast	PIM-DM, PIM-SM, PIM-SSM			
	Multicast VLAN			
	Multicast Traffic Suppression			
	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		
Qos function		DSCP		
		IP priority		
		Source destination L4 Port		
	Prioritisation Algorithm	WRR		
		SP		
		DSCP & CoS mapping		
		Congestion avoidance mechanisms such as WRED, tail drop, etc.		
	Port Security			
	Port Isolation			
	IEEE802.1x AAA			
	ACLS			
	l leer hierarchy	IFV4/V0 ACL		
	IP source protection (IP MAC port binding, IP -MAC-port-VALN binding)			
Safety				
	HTTPs and SSL			
	SSH V1.5/V2.0			
	DHCP Listening			

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	DHCP Relay
	Default Routing
	Static routes
	RIP V1/V2
	OSPF V2
L3 protocol (IPv4)	ISIS
	BGP4
	ECMP
	VRRP
	IPv6 ND
	IPv6 Web/SSL
	IPv6 NTP/SNTP
Duc foundation	IPv6 Telnet/SSH
Pv6 foundation	IPv6 Ping/Traceroute
	IPv6 FTP/TFTP
	IPv6 RADIUS/TACACS+
	IPv6 SNMP
	Static Routing
	Equivalent Routing
	OSPFv3
	RIPng
IPv6 features	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

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	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				
	SNMP (v1, v2c, v3)				
	RMON (1,2,3 & 9)				
	Firmware Upgrade				
	Configuration Export/Impo	ort			
	DHCP	Client			
		Option 82			
		Option 66			
		Option 67			
	Event/Error Logs	System Log			
	Management Access	Serial Port			
Management and	Control	Out-of-Band Management Port			
maintenance		SNMP			
		HTTP/HTTPS			
		Telnet			
	Port Mirror				
	LLDP (IEEE802.1AB), LLDP-MED				
	UDLD				
	DNS Client				
	Traceroute				
	Ping				
	DDMI				
	NTP/ SNTP (RFC2030)				
	Power, fan, and temperat	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

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