



BDCOM S8500 Series Carrier-class Core Switches

BDCOM S8500 Series

Product Overview

BDCOM S8500 Series, a new generation T-bit carrier-class core switch oriented for carrier's IP MANs and campus networks. Developed on the leading architecture of distributive multi-stage switching matrix and BDROS - a software platform BDCOM with its own independent intellectual property rights, S8500 Series provides high-performance L2/L3/L4 wire speed switching capacity by integrating services such as IPv6, MPLS VPN, network security, flow analysis, virtualization, with high reliable techniques including continuous forwarding, graceful restarting and loop network protection, the work efficiency of S8500 Series and its maximum running time are guaranteed. S8500 Series supports the "GreenTouch" architecture and "Smart@CHIP".

S8500 Series has three models: S8503, S8506 and S8510.



S8503



S8506



S8510

Product Characteristics

- **Advanced Hardware Architecture Design & Industry Leading Processing Capacity**
- With the leading architecture of distributive multi-stage switching matrix, the ASIC switch chip and the multi-core processor, the backplane of S8500 Series is up to 12T and the data switching capacity is up to 5.12T.
- S8500 Series supports high-intensity 10GE service boards and realizes the wire-speed switching of 3 layers without blocking.
- S8500 Series supports 40GE ports and 100GE ports.
- A single service board of S8500 Series supports up to 512K MAC address entries and 512K layer-3 routing tables.

➤ **Carrier-class High Reliability**

- S8500 Series adopts HPS (Hitless Protection System). The key components of S8500 Series such as the power system and the fan system support redundancy design. All system modules support hot-swap and seamless switching without need of manual intervention.
- S8500 Series supports redundancy protection mechanism such as STP/RSTP/MSTP protocol, VRRP protocol, ring network protection, dual uplink active/standby link protection and LACP link aggregation.
- S8500 Series supports ISSU (In-Service Software Upgrade) and GR (Graceful Restart) for OSPF/BGP, guaranteeing the user data non-stop forwarding when the system is upgrading.
- S8500 Series supports BFD and realizes fault detection and service recovery in seconds through linking with layer-2 or layer-3 protocol.
- S8500 Series has perfect Ethernet OAM, 802.3ah, 802.1ag and ITU-Y.1731, which can real-time monitor the network operating state and rapidly detect and locate the malfunction.
- High Reliability (99.999%): MTTR of S8500 Series is 50ms, meeting the requirement of the carrier-level service.

➤ **Innovative VSS Technique**

- S8500 Series supports BVSS (BDCOM Virtual Switch System), which can virtualize multiple physical devices into one in logic. The virtualized system is superior to the independent physical device in performance, reliability, flexibility and management.
- Doubled Performance: The virtualized system makes the best use of each link in the device and avoids the blocking of STP to the link.
- High-reliability: Based on the advanced distributed processing technique and the efficient function of cross-physical device link aggregation, S8500 Series provides with non-stop layer-3 routing forwarding and avoids single points of failure.
- Flexibility: With the function of S8500 virtual cluster service cards, the distance of virtual cluster system can expand to 80KM, breaking the geographic restriction of traditional cluster technique.
- Easy Management: The whole virtual system realizes single IP unified management and simplifies the management of network device and network topology.

➤ **Comprehensive Service**

- S8500 Series supports complete layer-2 and layer-3 multicast routing protocol and meets the access requirement of IPTV, multi-terminal high-definition video monitoring and high-definition video meeting.

- S8500 Series supports complete layer-3 routing protocol and a super-large routing table capacity, which make super-large data center network, campus network, enterprise network and industry private networks available.
- S8500 Series supports complete MPLS VPN of layer-2 and layer-3, which meets the requirement of industry private VPN users and enterprise network VPN users.
- S8500 Series also provides with value-added services including POE and traffic analysis.
- **Comprehensive IPv6 Solutions**
 - S8500 Series comprehensively supports IPv6 Neighbor Discovery, ICMPv6, Path MTU Discovery and DHCPv6.
 - S8500 Series supports IPv6 based Ping, Traceroute, Telnet, SSH, ACL, meeting the need of IPv6 network equipment management and service control.
 - S8500 Series supports IPv6 multicast characteristics including MLD, MLD Snooping and IPv6 layer-3 routing protocols including IPv6 static routing, RIPng, OSPFv3 and BGP4+.
 - S8500 Series supports IPv4-to-IPv6 technologies including IPv6 manual/automatic tunnel, auto tunnel, IPv6-to-IPv4 tunnel, and ISATAP tunnel.
- **Comprehensive Security Mechanisms**
 - S8500 Series adopts advanced hardware architecture design, realizing the hierarchical scheduling and protection of the packet. It provides multiple security measures to defend against DOS or TCP attacks; and supports command line authority control based on user levels.
 - Comprehensive Security Certification: S8500 Series complies with IEEE 802.1x, Radius, BDTacacs+.
 - Enhanced Service Security Mechanism: S8500 Series supports the plain text or MD5 authentication of relevant routing protocol; uRRF; DPI (Deep Packet Inspection) and (Deep Packet Filtration); DPI for control packets and data packets.
- **Innovative Green Environmental Design**
 - S8500 Series supports the “GreenTouch” architecture. Its power consumption is no more than 1000W.
 - Smart Power Management System: S8500 Series adopts advanced power system architecture design which can realize the function of efficient power switching, private power monitoring, soft start, real-time monitoring, intelligent adjustment and energy-saving.

- Smart Fan Management System: S8500 Series is designed with the intelligent fan and supports switching between front-back mode and back-front mode and fan automatic speed regulation.
- S8500 Series supports Efficient Ethernet and complies with International standard IEEE 802.3az.

Product Specifications

Item	S8503	S8506	S8510
Backplane	3Tbps	6Tbps	12Tbps
Switching capacity	1.28Tbps	2.56Tbps	5.12Tbps
Packet forwarding rate	360Mpps/960Mpps	720Mpps/1920Mpps	1440Mpps/3840Mpps
Number of slots	3	6	10
Number of service slots	2	4	8
MAC Switching Capacity	Static configuration and dynamically learning of MAC address Check and clear MAC address Configuring of MAC address aging time Limit on MAC address learning number MAC address filtering function Black-hole MAC items		
VLAN	4K VLAN entries GVRP 1:1 and N:1 VLAN Mapping Basic QinQ and selective QinQ Private VLAN		
STP	802.1D (STP), 802.1W (RSTP), 802.1S (MSTP) BPDU protection, root protection and ring protection		
Multicast	IGMP v1/v2/v3 IGMP Snooping		

	<p>IGMP Fast Leave</p> <p>Multicast group policy and multicast number limit</p> <p>Multicast traffic cross VLAN duplication</p> <p>PIM-SM and PIM-DM</p>
IPv4	<p>Static routing, RIP v1/v2, OSPF and BGP</p> <p>Policy routing</p> <p>Load balance through equal-cost routing</p> <p>Graceful Restart of OSPF and BGP</p> <p>BFD for OSPF and BGP</p>
IPv6	<p>ICMPv6, DHCPv6, ACLv6, IPv6 Telnet</p> <p>IPv6 Neighbor Discovery</p> <p>Path MTU Discovery</p> <p>MLD and MLD Snooping</p> <p>IPv6 static routing, RIPng, OSPFv3 and BGP4+</p> <p>Manual tunnel, ISATAP tunnel and 6-to-4 tunnel</p>
MPLS VPN	<p>LDP protocol</p> <p>MCE</p> <p>P/PE of MPLS VPN</p> <p>MPLS Traffic Engineering (TE)</p> <p>MPLS Operations, Administration, and Maintenance (OAM)</p>
QoS	<p>Traffic classification of each field of L2/L3/L4 protocol headers</p> <p>CAR traffic control</p> <p>802.1P/DSCP priority remark</p> <p>Multiple queuing algorithms such as SP, WRR or SP+WRR</p> <p>Tail-Drop, WRED</p> <p>Traffic supervision and traffic shaping</p>
Security features	<p>Identification and filtering of L2/L3/L4 based ACL</p> <p>Defend against DOS or TCP attacks</p> <p>Suppression of broadcast, multicast and unknown unicast packet</p>

	<p>Port isolation</p> <p>Port security, IP+MAC+port binding</p> <p>DHCP Snooping, DHCP Option 82</p> <p>IEEE 802.1x authentication</p> <p>Radius and BDTacacs+ authentication</p> <p>uRPF</p> <p>Command line authority control based on user levels</p>
Reliability	<p>Dual Master Control Redundancy (except S8503)</p> <p>Power 1+1 backup</p> <p>Master control, service card hot swap and service automatic recovery</p> <p>Static/LACP link aggregation and cross service card link aggregation</p> <p>Ring network protection including EAPS</p> <p>VRRP</p> <p>Ethernet OAM 802.3ah/802.1ag/ITU-Y.1731</p> <p>GR for OSPF and BGP</p> <p>BFD for OSPF and BGP</p> <p>ISSU</p>
Management and maintenance	<p>Console, Telnet and SSH</p> <p>SNMP v1/v2/v3</p> <p>Upload and download of TFTP files</p> <p>Remote Network Monitoring (RMON)</p> <p>Statistics analysis of sFLOW, Netflow</p>
Value-added services	<p>Network Address Translation (NAT)</p> <p>VSS</p>
Energy saving	<p>IEEE 802.3az green Efficient Ethernet</p>
Environment	<p>Operating temperature/humidity: 0 °C -40 °C ; 10%-90% non-condensing</p> <p>Storage temperature/ humidity: -20 °C -70 °C ; 5%-95% non-condensing</p>

Power supply	AC: 100V-240V, 50Hz±10%		
	DC: -48V		
Dimensions mm (WxDxH)	482x548x266 6U	482x548x399 9U	482x548x533 12U
Weight (empty chassis)	21.5kg	26kg	30.5kg

Ordering Information

Item	Description
S8500 Series Chassis	
LS8503	Integrated Chassis of S8503 switch (1 fan tray, 2 power slots, no standard power supply, 1 SFU slot, 2 service slots)
LS8506	Integrated Chassis of S8506 switch (1 fan tray, 2 power slots, no standard power supply, 2 SFU slots, 4 service slots)
LS8510	Integrated Chassis of S8510 switch (1 fan tray, 2 power slots, no standard power supply, 2 SFU slots, 8 service slots)
S8500 Series Power Supplies	
LS85-PWR-AC-600	S8500 Series 600W AC power module (only applicable to S8503 and S8506)
LS85-PWR-AC-1000	S8500 Series 1000W AC power module
LS85-PWR-DC-1000	S8500 Series 1000W DC power module
Console Board of S8500 Series	
LS85-MSU-III-B	Console Board III of S8500 Series
LS85-MSU-VI	Console Board VI of S8500 Series
Service Board of S8500 Series	
Gigabit Service Boards	

LS85-12GE-TX/SFP-V3	Service board with 12 GE combo SFP/RJ45 ports
LS85-12GE-TX/SFPE-V3	Service board with 12 GE combo SFP/RJ45 ports
LS85-24GE-TX-V3	Service board with 24 gigabit RJ45 ports and 4 combo gigabit SFP ports
LS85-24GE-TXE-V3	Service board with 24 gigabit RJ45 ports and 4 combo gigabit SFP ports
LS85-24GE-SFP-V3	Service board with 24 gigabit SFP ports and 4 combo gigabit SFP/RJ45 ports
LS85-24GE-SFPE-V3	Service board with 24 gigabit SFP ports and 4 combo gigabit SFP/RJ45 ports
LS85-48GE-TX-MPLS-L-V3	Service board with 48 gigabit RJ45 ports
LS85-48GE-TX-MPLS-E-V3	Service board with 48 gigabit RJ45 ports
LS85-48GE-SFP-MPLS-L-V3	Service board with 48 gigabit SFP ports
LS85-48GE-SFP-MPLS-E-V3	Service board with 48 gigabit SFP ports
10G Service Cards	
LS85-2TE-SFP+-V3	Service board with 2 10GE SFP+ ports
LS85-2TE-SFP+-E-V3	Service board with 2 10GE SFP+ ports
LS85-4TE-SFP+-MPLS-L-V3	Service board with 4 10GE SFP+ ports
LS85-4TE-SFP+-MPLS-E-V3	Service board with 4 10GE SFP+ ports
LS85-12TE-SFP+-MPLS	Service board with 12 10GE SFP+ ports
LS85-12TE-SFP+-MPLS-E	Service board with 12 10GE SFP+ ports
Value-added Services	
LS85-MFMC-12GE-TX/SFP	Service board with 12 combo NAT SFP/RJ45 ports
LS85-VSS-4TE-SFP+	Virtualized service board with 4 10GE SFP+ ports
Optical Modules	
Gigabit Optical Modules	
GSFP-TX-B	Gigabit SFP to RJ45 module
GSFP-SX-D	Gigabit SFP multi-mode (500m, 850nm, LC, DDM)
GSFP-LX-10-D	Gigabit SFP single mode (10Km, 1310nm, LC, DDM)

GSFP-LX-20-D	Gigabit SFP single mode (20Km, 1310nm, LC, DDM)
GSFP-LX-40-D	Gigabit SFP single mode (40Km, 1310nm, LC, DDM)
GSFP-ZX-80-D	Gigabit SFP single mode (80Km, 1550nm, LC, DDM)
GSFP-ZX-120-D	Gigabit SFP single mode (120Km, 1550nm, LC, DDM)
GSFP-LX-SM1310-10-BIDI	Gigabit SFP single mode, single-core bidirectional (10Km, TX1310/RX1550, LC, DDM)
GSFP-LX-SM1550-10-BIDI	Gigabit SFP single mode, single-core bidirectional (10Km, TX1550/RX1310, LC, DDM)
GSFP-LX-SM1310-20-BIDI	Gigabit SFP single mode, single-core bidirectional (20Km, TX1310/RX1550, LC, DDM)
GSFP-LX-SM1550-20-BIDI	Gigabit SFP single mode, single-core bidirectional (20Km, TX1550/RX1310, LC, DDM)
GSFP-LX-SM1310-40-BIDI	Gigabit SFP single mode, single-core bidirectional (40Km, TX1310/RX1550, LC, DDM)
GSFP-LX-SM1550-40-BIDI-1310	Gigabit SFP single mode, single-core bidirectional (40Km, TX1550/RX1310, LC, DDM)
GSFP-LX-SM1490-80-BIDI	Gigabit SFP single mode, single-core bidirectional (80Km, TX1490/RX1550, LC, DDM)
GSFP-LX-SM1550-80-BIDI	Gigabit SFP single mode, single-core bidirectional (80Km, TX1550/RX1490, LC, DDM)
GSFP-LX-SM1490-120	Gigabit SFP single mode, single-core bidirectional (120Km, TX1490/RX1550, LC, DDM)
GSFP-LX-SM1550-120	Gigabit SFP single mode, single-core bidirectional (120Km, TX1550/RX1490, LC, DDM)
10GE Optical Modules	
SFP+SX	10GE SFP+ multi-mode (300m, 850nm, LC)
SFP+LX-10	10GE SFP+ single mode (10Km, 1310nm, LC, DDM)
SFP+LX-20	10GE SFP+ single mode (20Km, 1310nm, LC, DDM)
SFP+LX-40	10GE SFP+ single mode (40Km, 1550nm, LC, DDM)

SFP+LX-80	10GE SFP+ single mode (80Km, 1550nm, LC, DDM)
SFP+LX-SM-1270-10	10GE SFP+ single mode, single-core bidirectional (10Km, TX1270/RX1330, LC, DDM)
SFP+LX-SM-1330-10	10GE SFP+ single mode, single-core bidirectional (10Km, TX1330/RX1270, LC, DDM)
SFP+LX-SM-1270-20	10GE SFP+ single mode, single-core bidirectional (20Km, TX1270/RX1330, LC, DDM)
SFP+LX-SM-1330-20	10GE SFP+ single mode, single-core bidirectional (20Km, TX1330/RX1270, LC, DDM)
SFP+LX-SM-1270-40	10GE SFP+ single mode, single-core bidirectional (40Km, TX1270/RX1330, LC, DDM)
SFP+LX-SM-1330-40	10GE SFP+ single mode, single-core bidirectional (40Km, TX1330/RX1270, LC, DDM)

For More Information

For more information about the **BDCOM S8500 Series**, please contact your local BDCOM account representative.

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