BDCOM S8500 Series
Carrier-Level Core Routing Switches

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Product Introduction

BDCOM S8500 Series Switches are new-generation T-bit carrier-level core routing switches invented by Shanghai Baud Data Communication Co., Ltd for next generation IP MANs and large campus networks. S8500 switches adopt the cutting-edge distributive multileveled switching matrix structure and run on the BDROS operating system of BDCOM copyright. On the basis of providing high-performance L2/L3/L4 line-speed switching services, they further integrate many network services, like IPv6, MPLS VPN, network security, traffic analysis and virtualization, and multiple reliability technologies, like unstoppable upgrade, unstoppable forwarding, grace rebooting and redundancy protection, hence they can ensure the longest unstoppable communication. The application of BDCOM advanced GreenTouch concept and the industry-leading Smart@CHIP chip on S8500 Series is contributive to in-depth energy saving, environment protection and effective decrease of the maintenance and operation cost. S8500 avails of a perfect solution to sustainable and green network development.

BDCOM S8500 Series Switches have four models: S8503, S8506, S8510 and S8516 and different port densities and performance requirements can be met for different scales of networks.

S8503

S8506

S8510

S8516

Properties

Advanced hardware structure design and industry-leading processing capability

- Totally meeting carrier-level equipment's high performance, high capacity, high density and high scalability due to its 10T-platform-oriented design, its industry-leading distributive multileveled switching matrix architecture, its high-performance ASIC chip, its multi-core processor, its up to 18T backplane capacity, and its up to 8.96T data switching capacity
- Providing high-density 10G service boards for the realization of inter-board L3 line-speed unblocked switching capability
- Supporting to be scalable up to 40GE and 100GE ports
- Having a single service board card support an up-to-512K MAC address table and a 512K L3 routing table.

Carrier-level reliability

- Acquiring high reliability through HPS (Hitless Protection System), redundancy design for key parts (e.g. the system control unit, the power supply system and the fan system), all hot-pluggable modules, and automatic seamless trouble switchover
- Supporting protocols, like STP, RSTP, MSTP and VRRP, ring network protection, active and standby upload link protection, and LACP link aggregation
- Supporting ISSU (In-Service Software Upgrade) and GR (Graceful Start), which ensures the uninterrupted forwarding even during system upgrade and MSU switchover
- Realizing trouble detection and service recovery in a millisecond level through the highly precise BFD's interaction with L2/L3 protocols
- Monitoring the network running status in real time through its perfect Ethernet OAM mechanism and its support of 802.3ah, 802.1ag and ITU-Y.1731
- Realizing carrier-level 50ms troubleshooting and 99.999% reliability of core equipment through highly reliable software/hardware design

Innovative VSS

- S8500 switches support BVSS (BDCOM Virtual Switch System), a technology that can virtualize multiple physical devices into a logical device, and obtain much better performance, reliability, flexibility and management than independent physical devices do.

- Doubled performance: the virtualization system can make full use of every link between physical devices, avoid STP in traditional networking model from blocking links and protect the existing link investment to perfection.
- High reliability: The advanced distributive processing technology and the efficient link aggregation beyond physical equipment realize the separation of logical control plane, service control plane and service data plane, provide continuous L3 routing forwarding to stop a single-point trouble from causing service interruption.
- Flexibility: The VSS board of S8500 can extend the distance of VSS to 80KM, flexible and convenient, which breaks distance limits of traditional cluster.
- Easy management: The whole virtualization system realizes the uniform management of single IP, simplifies the management of network devices and network topology, improves the network operation efficiency and reduces the operation and maintenance cost.

Varied service features

- Perfect L2/L3 multicast routing protocols meet the access requirements of IPTV/multi-terminal HD video monitoring and HD video conferencing.
- All-round L3 routing protocols and very big routing table volume meet the interconnecting requirements of all kinds of networks and help a lot in establishing huge campus networks, enterprise networks and industry-user networks.
- The versatile support of L2/L3 MPLS VPN can construct big-size MPLS VPNs, meeting the access requirements of VPN users and enterprise VPN users.
- Value-added services such as NAT and flow analysis are provided.

Versatile IPv6 Solution

- Support the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, DHCPv6, etc.
- Support Ping, Traceroute, Telnet, SSH, ACL and so like on the basis of IPv6, meeting IPv6 networks' equipment management requirements and service control requirements.
- Support IPv6 multicast characteristics like MLD and MLD Snooping, and IPv6 L3 routing protocols such as IPv6 static route, RIPng, OSPFv3 and BGP4+, providing users with the outstanding IPv6 L2/L3 solution.
- Support various IPv4-to-IPv6 transition technologies, including IPv6 manual tunnel, automatic tunnel, 6to4 tunnel and ISATAP tunnel, ensuring smooth IPv4-to-IPv6 transition.

Perfect Security Mechanisms

- Equipment-level security: The advanced hardware infrastructure design realizes the level-based packet schedule and packet protection, prevents DoS-/TCP-related SYN Flood, UDP Flood, Broadcast Storm or large traffic attacks, and supports level-based command line protection, endowing different levels of users with different management permissions.
- Perfect security authentication mechanisms: IEEE 802.1x, Radius and BDTacacs+
- Extensive service security mechanisms: Text/MD5 authentication of related routing protocols and the uRPF technology can control illegal services effectively; the hardware-level packet in-depth detection and filtration technology supports the in-depth detection of control packets and data packets, which effectively isolates illegal data packets and improves network security.

Innovative green design

- The adoption of leading GreenTouch idea limits the maximum power consumption of whole machine to 1000W, which is energy-saving and environmentally friendly.
- Smart power supply management system: The reasonable power supply structure realizes efficient power transfer, and its functions such as the unique power supply monitoring mechanism, slow startup and sequential power-on make operation state monitoring, intelligent adjustment and in-depth energy saving very easy.
- Intelligent fan management system: the smart fan design supports automatic speed regulation, independent partition control, reducing the rotation speed, lowering noise and extending the fan's life span effectively.
- The support of energy-efficient Ethernet and the compliance of IEEE802.3 cuts down energy consumption efficiently.

Products' Specifications

Item	S8503	S8506	S8510	S8516
Backplane bandwidth	3Tbps	6Tbps	12Tbps	18T
Exchange capacity	1.28Tbps	2.56Tbps	5.12Tbps	8.96T
Packet forwarding rate	360Mpps/960Mpps	720Mpps/1920Mpps	1440Mpps/3840Mpps	3360Mpps/6720Mpps

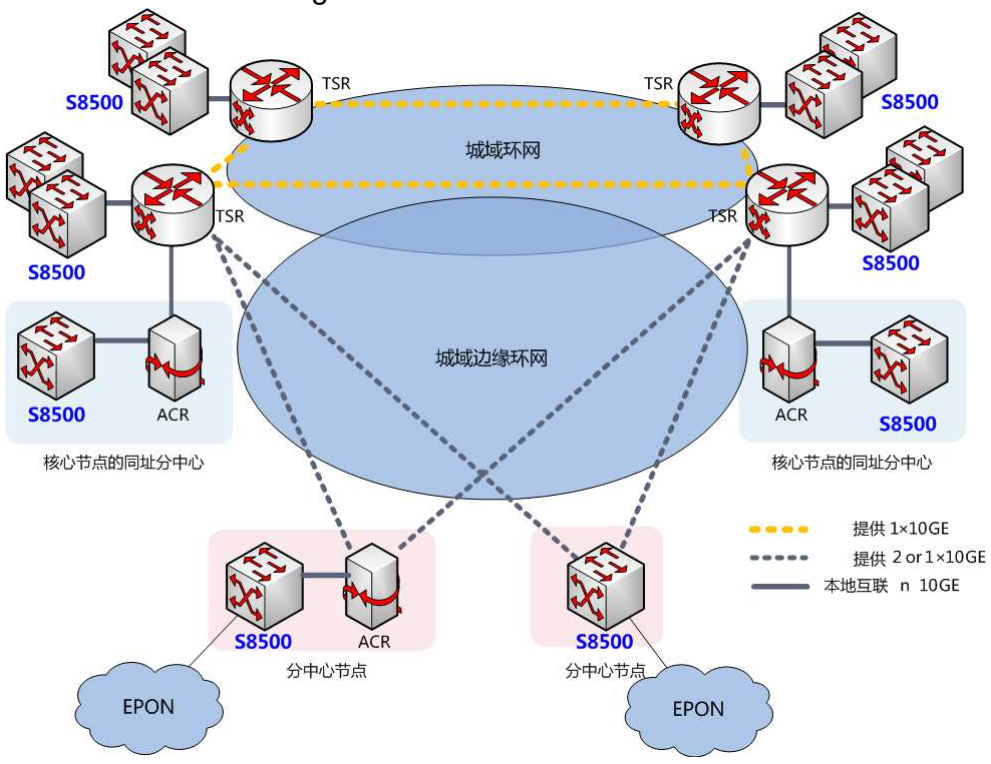
Number of slots	3	6	10	16
Service slot quantity	2	4	8	14
MAC exchange	Static configuration and dynamic MAC learning MAC browsing and removal Configurable aging time of the MAC address Limited number of learnable MAC addresses MAC filtration Black-hole MAC list			
VLAN	4K VLAN list GVRP 1:1 VLAN mapping and N:1 VLAN mapping Basic QinQ and flexible QinQ PVLAN			
STP	802.1D (STP), 802.1W (RSTP) and 802.1S (MSTP) BPDU protection, root protection, and loopback protection			
Multicast	IGMP v1/v2/v3 IGMP snooping GMP Fast Leave Multicast group strategy and multicast group quantity limitation Multicast flow copying over VLANs PIM-SM, PIM-DM			
IPv4	Static route, RIPv1/v2, OSPF, and BGP Policy routing Load balance via equivalent route Graceful Restart for OSPF and BGP BFD for OSPF and BGP			
IPv6	ICMPv6, DHCPv6, ACLv6, and IPv6 Telnet IPv6 neighbor discovery Path MTU discovery MLD and MLD snooping IPv6 static route, RIPng, OSPFv3 and BGP4+ Manual/ISATAP/6to4 tunnels			

MPLS VPN	LDP MCE P/PE function requirements of MPLS VPN MPLS TE MPLS OAM
QoS	Flow classification based on each field in the heads of L2/L3/L4 protocols CAR flow limit 802.1P/DSCP priority re-labeling SP, WRR, and “SP+WRR” Congestion avoidance mechanisms like Tail-Drop and WRED Flow monitoring and flow shaping
Security features	L2/L3/L4 ACL flow identification and filtration DDoS attack prevention, TCP’s SYN Flood attack prevention, UDP Flood attack prevention, etc Limitation of broadcast/multicast/unknown unicast packets Port isolation Port security, and “IP+MAC+port” binding DHCP snooping and DHCP option 82 IEEE 802.1x authentication Radius BDTacacs+ authentication uRPF Level-based command line protection
Reliability	Two-MSU redundancy (excluding S8503) “1+1” backup of power source Hot-swappable MSUs and service cards, and automatic service recovery Static/LACP link aggregation, and link aggregation over service cards Ring network protection such as EAPS VRRP Ethernet OAM 802.3ah/802.1ag/ITU-Y.1731 GR for OSPF and BGP BFD for OSPF and BGP ISSU uninterrupted system upgrade
Management and	Console, Telnet, SSH SNMP v1/v2/v3

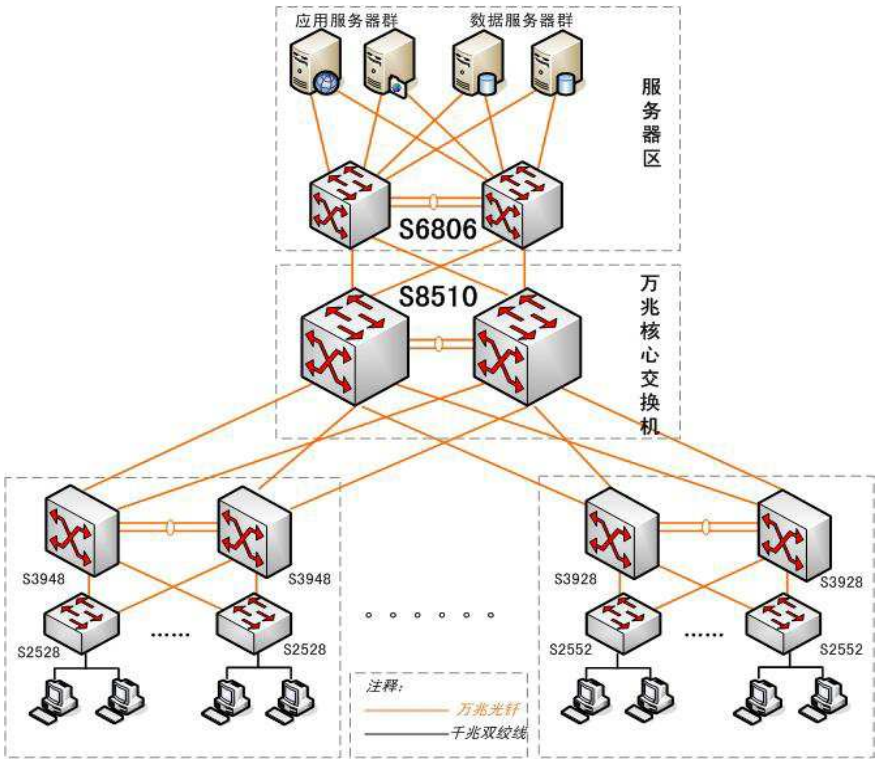
maintenance	TFTP-patterned file upload/download management RMON SFLOW or Netflow flow statistics and analysis			
Value-added services	NAT VSS			
Green and energy saving	IEEE 802.3az energy-efficient Ethernet			
Environment requirements	Working temperature and humidity: 0□-40□, 10%-90% non-condensing Storage temperature and humidity: -20□-70□, 5%-95% non-condensing			
Power Supply	AC：100V-240V，50Hz±10% DC：-48V			
Dimensions mm (W*H*D)	482×548×266 6U	482×548×399 9U	482×548×533 12U	482×548×800 18U
Entire weight (null configuration)	21.5kg	26kg	30.5kg	38kg

Solution

- Solution to TV broadcasting carrier's IP MAN



- Solution to large campus networks



Ordering Information

Item	Description
Chassis of S8500 series	
LS8503-Chassis-PLUS	Chassis of S8503 (including 1 fan tray, 2 power supply slots, 1 AC 600W power supply, 1 MSU slot and 2 service slots)
LS8503-Chassis-PLUS-DC	Chassis of S8503 (including 1 fan tray, 2 power supply slots, 1 DC 1000W power supply, 1 MSU slot and 2 service slots)
LS8506-Chassis-PLUS	Chassis of S8506 (including 1 fan tray, 2 power supply slots, 1 AC 600W power supply, 2 MSU slots and 4 service slots)
LS8506-Chassis-PLUS-DC	Chassis of S8506 (including 1 fan tray, 2 power supply slots, 1 DC 1000W power supply, 2 MSU slots and 4 service slots)
LS8510-Chassis-PLUS	Chassis of S8510 (including 1 fan tray, 2 power supply slots, 1 AC 1000W power supply, 2 MSU slots and 8 service slots)
LS8510-Chassis-PLUS-DC	Chassis of S8510 (including 1 fan tray, 2 power supply slots, 1 DC 1000W power supply, 2 MSU slots and 8 service slots)
LS8516-Chassis-PLUS	Chassis of S8516 (including 2 fan trays, 2 power supply slots, 1 AC 1000W power supply, 2 MSU slots and 14 service slots)

LS8516-Chassis-PLUS-DC	Chassis of S8516 (including 2 fan trays, 2 power supply slots, 1 DC 1000W power supply, 2 MSU slots and 14 service slots)
Power supply of S8500	
LS85-PWR-AC-600	600W AC power supply module of S8500 series (only available for S8503 and S8506)
LS85-PWR-AC-1000	1000W AC power supply module of S8500 series
LS85-PWR-DC-1000	1000W DC power supply module of S8500 series
MSU of S8500	
LS85-MSU-II	MSU II of S8500 series
LS85-MSU-III	MSU III of S8500 series
LS85-MSU-VI	MSU VI of S8500 series
Service boards of S8500 series	
GE boards	
LS85-12GE-TX/SFP	Combo board with 12 GE ports (RJ45, SFP)
LS85-12GE-TX/SFPE	Combo board with 12 GE ports (RJ45, SFP)
LS85-12GE-TX/SFP-MPLS-E	Combo board with 12 GE ports (RJ45, SFP)
LS85-24GE-TX	Service board with 24 GE TX ports (RJ45) and 4 bi-use GE optical ports (SFP)
LS85-24GE-TXE	Service board with 24 GE TX ports (RJ45) and 4 bi-use GE optical ports (SFP)
LS85-24GE-SFP	Service board with 24 GE optical ports (SFP) and 4 bi-use GE electrical ports (RJ45)
LS85-24GE-SFPE	Service board with 24 GE optical ports (SFP) and 4 bi-use GE electrical ports (RJ45)
LS85-48GE-TX-MPLS-L	Service board with 48 GE electrical ports (RJ45)
LS85-48GE-TX-MPLS	Service board with 48 GE electrical ports (RJ45)
LS85-48GE-TX-MPLS-E	Service board with 48 GE electrical ports (RJ45)
LS85-48GE-SFP-MPLS-L	Service board with 48 GE optical ports (SFP)
LS85-48GE-SFP-MPLS	Service board with 48 GE optical ports (SFP)
LS85-48GE-SFP-MPLS-E	Service board with 48 GE optical ports (SFP)
TE boards	
LS85-2TE-SFP+	Service board with 2 TE optical ports (SFP+)
LS85-2TE-SFP+-E	Service board with 2 TE optical ports (SFP+)

LS85-4TE-SFP+-MPLS-L	Service board with 4 TE optical ports (SFP+)
LS85-4TE-SFP+-MPLS	Service board with 4 TE optical ports (SFP+)
LS85-4TE-SFP+-MPLS-E	Service board with 4 TE optical ports (SFP+)
LS85-12TE-SFP+-MPLS	Service board with 12 TE optical ports (SFP+)
LS85-12TE-SFP+-MPLS-E	Service board with 12 TE optical ports (SFP+)
Value-added service boards	
LS85-MFMC-12GE-TX/SFP	Combo NAT board with 12 GE ports (RJ45, SFP)
LS85-VSS-4TE-SFP+	VSS board with 4 TE optical ports (SFP+)
Optical modules	
GE optical modules	
GSFP-TX-B	GE SFP-to-RJ45 module
GSFP-SX-D	GE SFP multi-mode (500m, 850nm, LC, DDM)
GSFP-LX-10-D	GE SFP single-mode (10Km, 1310nm, LC, DDM)
GSFP-LX-20-D	GE SFP single-mode (20Km, 1310nm, LC, DDM)
GSFP-LX-40-D	GE SFP single-mode (40Km, 1310nm, LC, DDM)
GSFP-ZX-80-D	GE SFP single-mode (80Km, 1550nm, LC, DDM)
GSFP-LX-SM1310-10-BIDI GSFP-LX-SM1550-10-BIDI	GE SFP single-mode, single-chip and two-way (10Km, TX1310/RX1550, LC, DDM) GE SFP single-mode, single-chip and two-way (10Km, TX1550/RX1310, LC, DDM)
GSFP-LX-SM1310-20-BIDI GSFP-LX-SM1550-20-BIDI	GE SFP single-mode, single-chip and two-way (20Km, TX1310/RX1550, LC, DDM) GE SFP single-mode, single-chip and two-way (20Km, TX1550/RX1310, LC, DDM)
GSFP-LX-SM1310-40-BIDI GSFP-LX-SM1550-40-BIDI-1310	GE SFP single-mode, single-chip and two-way (40Km, TX1310/RX1550, LC, DDM) GE SFP single-mode, single-chip and two-way (40Km, TX1550/RX1310, LC, DDM)
GSFP-LX-SM1490-80-BIDI GSFP-LX-SM1550-80-BIDI	GE SFP single-mode, single-chip and two-way (80Km, TX1490/RX1550, LC, DDM) GE SFP single-mode, single-chip and two-way (80Km, TX1550/RX1490, LC, DDM)
TE optical modules	

SFP+SX	TE SFP+ multi-mode (300m, 850nm, LC)
SFP+LX-10	TE SFP+ single-mode (10Km, 1310nm, LC, DDM)
SFP+LX-20	TE SFP+ single-mode (20Km, 1310nm, LC, DDM)
SFP+LX-40	TE SFP+ single-mode (40Km, 1550nm, LC, DDM)
SFP+LX-80	TE SFP+ single-mode (80Km, 1550nm, LC, DDM)

For More Information

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

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