



SWM-8400

CARRIER-LEVEL CORE SWITCHES



40GE

Campus Network Cores
Switches

ADVANCED HARDWARE ARCHITECTURE

99.999%

Carrier-level Reliability

VARIED SERVICE

Characteristics
Versatile IPv6 Solution
Complete Security
Mechanism

Description

CXR **SWM-8400** Series, a new generation T-bit carrier-level core switch oriented for carrier's IP MANs and campus networks. Developed on the leading architecture of distributive multi-stage switching matrix and BDROS software platform CXR with its own independent intellectual property rights, **SWM-8400** Series provides high-performance L2/L3/L4 wire speed switching capacity by integrating services such as IPv6, network security, flow analysis, virtualization, with high reliable techniques including continuous forwarding, graceful restarting and loop network protection, the work efficiency of **SWM-8400** Series and its maximum running time are guaranteed.

SWM-8400 Series supports the "GreenTouch" architecture and "Smart@CHIP", significantly reducing equipment energy consumption, effectively cutting down operation and maintenance costs, and providing a perfect solution for the green and sustainable development of the network.

CXR **SWM-8400** Series consists of three models: **SWM-8403**, **SWM-8406** and **SWM-8510**, which can meet the port density and performance requirements of different network scales.

Characteristics

Advanced Hardware Architecture Design & Leading Processing Capacity

With the leading architecture of distributive multi-stage switching matrix, the ASIC switch chip and the multi-core processor, SWM-8400 Series meets the carrier-level core equipment requirements of high performance, high capacity, high density and expansion. SWM-8400 Series supports high-intensity 40GE service boards and realizes the wire-speed switching of 3 layers without blocking.

Carrier-level High Reliability

SWM-8400 Series adopts HPS (Hitless Protection System). The key components of SWM-8400 Series such as the main control unit, power system and the fan system support redundancy design. All system modules support hot-swap and seamless switching without manual intervention.

SWM-8400 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.

SWM-8400 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.

SWM-8400 Series supports BFD and realizes fault detection and service recovery in seconds through linking with layer-2 or layer-3 protocol.

High Reliability (99.999%): MTTR of SWM-8400 Series is 50ms, meeting the requirement of the carrier-level service.

Innovative VSS Technique

SWM-8400 Series supports BVSS (CXR 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, SWM-8400 Series provides with non-stop layer-3 routing forwarding and avoids single points of failure.

Flexibility: With the function of SWM-8400 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 IPv6 Solutions

SWM-8400 Series comprehensively supports IPv6 Neighbor Discovery, ICMPv6, Path MTU Discovery and DHCPv6.

SWM-8400 Series supports IPv6-based Ping, Traceroute, Telnet, SSH, ACL, meeting the need of IPv6 network equipment management and service control.

SWM-8400 Series supports IPv6 multicast characteristics including MLD, MLD Snooping and IPv6 layer-3 routing protocols including IPv6 static routing, RIPng, OSPFv3 and BGP4+.

Characteristics (suite)

Comprehensive Service

SWM-8400 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.

SWM-8400 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.

Comprehensive Security Mechanisms

SWM-8400 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: SWM-8400 Series complies with IEEE 802.1x, Radius, BDTacacs+.

Enhanced Service Security Mechanism: SWM-8400 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

SWM-8400 Series supports the “GreenTouch” architecture. Its power consumption is no more than 1000W.

Smart Power Management System: SWM-8400 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: SWM-8400 Series is designed with the intelligent fan and supports switching between front-back mode and back-front mode and fan automatic speed regulation.

SWM-8400 Series supports Efficient Ethernet and complies with International standard IEEE 802.3az.

SWM-8400 Series

Note: The standard configuration does not include the power supply.



Model lists



SWM-8403

Carrier-level Core Switch

- 1 fan module,
- 3 power slots, exclude the power supply,
- 1 MCU slot,
- 1 MCU/business slot,
- 1 business slot



SWM-8406

Carrier-level Core Switch

- 1 fan module,
- 3 power slots, exclude the power supply,
- 2 MCU slots,
- 4 business slots

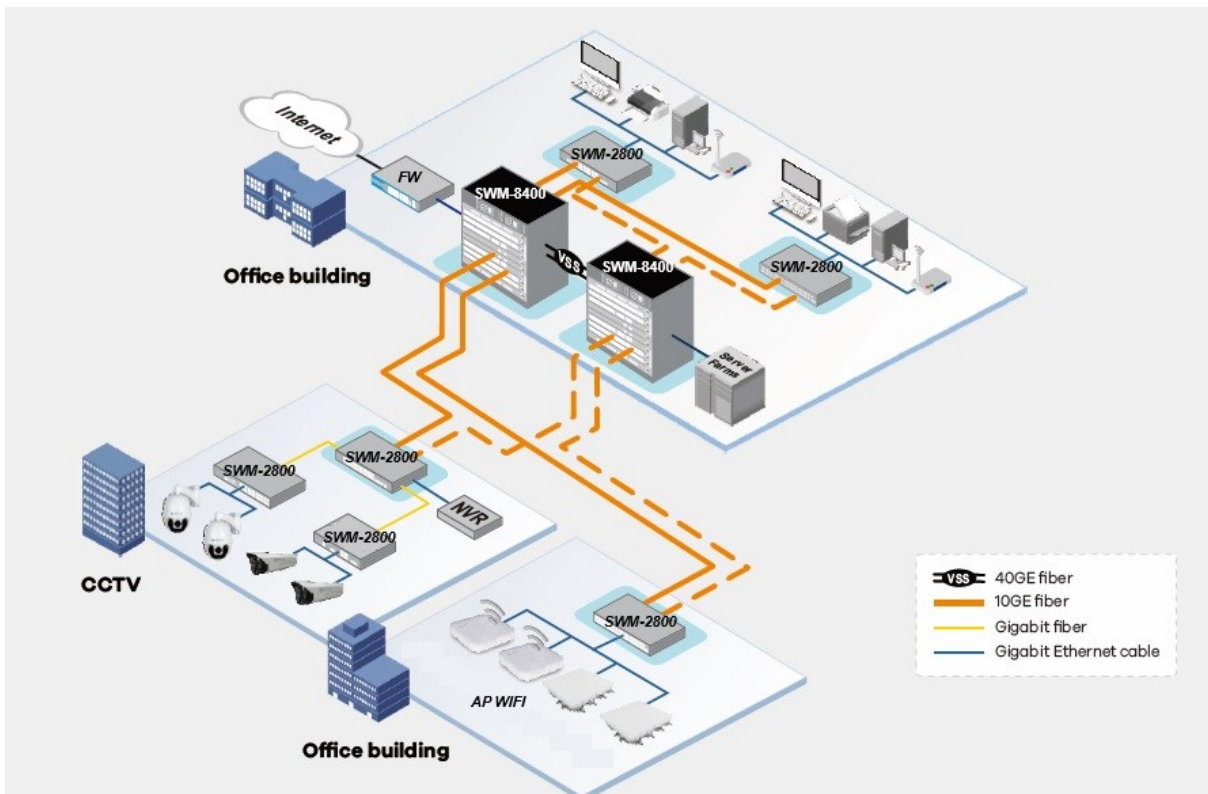


SWM-8410

Carrier-level Core Switch

- 1 fan module,
- 3 power slots, exclude the power supply,
- 2 MCU slots,
- 8 business slots

Application



Features

MAC Switching

- 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

Reliability

- Dual Master Control Redundancy
- Power N+M backup
- Master control, service card hot swap and service automatic recovery
- Static/LACP link aggregation and cross service card link aggregation
- Ring network protection including EAPS
- VRRP
- GR for OSPF and BGP
- BFD for OSPF and BGP
- ISSU

STP

- 802.1D (STP), 802.1W (RSTP), 802.1S (MSTP)
- BPDU protection, root protection and ring protection

Multicast

- IGMP v1/v2/v3
- IGMP Snooping
- IGMP Fast Leave
- Multicast group policy and multicast number limit
- MVR
- PIM-SM and PIM-DM

IPv4

- Static routing, RIP v1/v2, OSPF and BGP
- Policy routing
- Load balance through equal-cost routing
- Graceful Restart of OSPF and BGP
- BFD for OSPF and BGP

IPv6

- ICMPv6, DHCPv6, ACLv6, IPv6 Telnet
- IPv6 Neighbor Discovery
- Path MTU Discovery
- MLD and MLD Snooping
- IPv6 static routing, RIPng, OSPFv3 and BGP4+
- Manual tunnel, ISATAP tunnel and 6-to-4 tunnel

Features (suite)

Management and Maintenance

- Console, Telnet and SSH
- SNMP v1/v2/v3
- Upload and download of TFTP files
- Remote Network Monitoring (RMON)
- Statistics analysis of sFLOW, Netflow

MPLS VPN

- Multi-VRF

QoS

- Traffic classification of each field of L2/L3/L4 protocol headers
- CAR traffic control
- 802.1P/DSCP priority remark
- Multiple queuing algorithms such as SP, WRR or SP+WRR
- Tail-Drop, WRED
- Traffic supervision and traffic shaping
- Ingress and Egress ACL, and matching L2, L3, L4 and IP quintuples for copying, forwarding and discarding
- Hash algorithms and load balancing

Security features

- Identification and filtering of L2/L3/L4 based ACL
- Defend against DoS or TCP attacks
- Suppression of broadcast, multicast and unknown unicast packet
- Port isolation
- Port security, IP + MAC + port binding
- DHCP Snooping, DHCP Option 82
- IEEE 802.1x authentication
- Radius and BDTacacs+ authentication
- uRPF
- Command line authority control based on user levels

Value-added services

- VSS

Energy saving

- IEEE 802.3az green Efficient Ethernet











Environment

- Operating temperature/humidity: 0°C-40°C ; 10%-90% non-condensing
- Storage temperature/ humidity: -20°C-70°C ; 5%-95% non-condensing

Specifications

Items	SWM-8403	SWM-8406	SWM-8410
Interface			
Switching Capacity	736Gbps/1.47Tbps	1.28/2.56Tbps	2.56/5.12Tbps
Forwarding rate	552/1024 Mpps	810/1920 Mpps	1920/3840 Mpps
Total Number of slots	3	6	10
MCU slots	1+1	2	2
Business slots	3	4	8
Performance/Storage			
Energy saving	IEEE 802.3az green Efficient Ethernet	IEEE 802.3az green Efficient Ethernet	IEEE 802.3az green Efficient Ethernet
Operating temperature	0°C ~ 40°C	0°C ~ 40°C	0°C ~ 40°C
Operating humidity	10-90% non-condensing AC:100V-240V, 50Hz±10%	10-90% non-condensing AC:100V-240V, 50Hz±10%	10-90% non-condensing AC:100V-240V, 50Hz±10%
Power supply	DC: -48V	DC: -48V	DC: -48V
Power consumption (W)	<350W	<550W	<1300W
Dimensions mm (W*D*H)	482*377*178 (4U)	482*370*397 (9U)	482*370*530 (12U)
Weight KG (empty)	10.5	21	25.5

Ordering informations

Items	Picture	Description
SWM-8403 Chassis		
SWM-8403		Integrated Chassis of SWM-8403 switch (1 fan tray, 3 power slots, no standard power supply, 1 MCU slot, 1 MCU/service slot and 1 service slot)
SWM-8403 Power Supplies		
SWM8403-AC		SWM-8403 AC power module 350W
SWM8403-DC		SWM-8403 DC power module 350W
SWM-8403 MCU Boards		
SWM8403-CPU-SFP		Console Board of SWM-8403 with 24 gigabit SFP ports and 8 10GE SFP+ ports
SWM8403-CPU-RJ		Console Board of SWM-8403 with 24 gigabit RJ45 ports and 8 10GE SFP+ ports
SWM-8400 Chassis		
SWM-8406		Integrated Chassis of SWM-8406 switch (1 fan tray, 3 power slots, no standard power supply, 2 MCU slots, 4 service slots)
SWM-8410		Integrated Chassis of SWM-8510 switch (1 fan tray, 3 power slots, no standard power supply, 2 MCU slots, 8 service slots)
SWM-8400 Power Supplies		
SWM8400-AC		550W AC power module (Full load of 6 line cards)
SWM8400-DC		550W DC power module (Full load of 6 line cards)
SWM-8400 MCU Boards		
SWM8400-CPU		SWM-8400type-I/II MCU board

Ordering informations (suite)

Service Board of SWM-8400 series		
Gigabit Service Boards		
SWM8400-24GS24T		Service board with 24 gigabit SFP ports and 24 gigabit RJ45 ports
SWM8400-48GT		Service board with 48 gigabit RJ45 ports
SWM8400-48GS		Service board with 48 gigabit SFP ports
Gigabit and 10GE Hybrid Service Boards		
SWM8400-24GS8TS		Service board with 24 gigabit SFP ports and 8 10GE SFP+ ports
SWM8400-24GT8TS		Service board with 24 gigabit RJ45 ports and 8 10GE SFP+ ports
10GE Service Boards		
SWM8400-16TS		Service board with 16 10GE SFP+ ports
SWM8400-4QS		Service board with 4 40GE QSFP ports



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