6-slot Layer 3 IPv6/IPv4 Routing Chassis Switch

Outstanding Flexibility and High Performance

PLANET CS-6306R Core Layer Routing Switch is specially designed for large network applications such as enterprises, campuses, communities, ISPs and data center networks where **flexible configuration**, **large capacity**, **high density**, **high reliability** and **advanced traffic management** are required.

The CS-6306R is the High-density Chassis Ethernet Switch built with 6 module slots and redundant power supply. It provides great porting flexibility for network deployment by offering various combinable management modules and switch modules. For instance, one management module can be collaborated with four switch modules, or two management modules work to mutually perform system backup. Within the 9U height, single chassis, the maximum configuration can be:

- **192 10/100/1000BASE-T Copper Slots**
- **192 100/1000BASE-SX/LX SFP Fiber Slots**
- **64 10G SFP+ Fiber Slots**
- **16 40G QSFP+ Fiber Slots**

Positioned as the core layer switch, the CS-6306R serves ideally for large-sized networks and IP metropolitan networks by supplying advanced intelligent and secure features and giving high performance and flexibility.

Hardware and Performance

- 6 open module slots design:
    - Up to 2 Management Modules
    - Up to 4 Switch Modules
- Hot-swappable switching modules
- 1 RJ45 serial console interface on Management Module for switch basic management and setup

Redundant Power System

- 3 power slots
- 100~240V AC and 36-72V DC power redundancy
    - 1 default AC power supply
    - 2 additional open slots for optional power supply
- Active-active redundant power failure protection
- Backup of catastrophic power failure on one supply

IP Routing Features

- IPv4 Routing protocol supports RIP v1/v2, OSPFv2 and BGP4
- IPv6 Routing protocol supports RIPng, OSPFv3 and BGP4+
- Routing interface provides VLAN routing mode
- Policy-based Routing (PBR) for IPv4
- VRRP protocol for redundant routing deployment
- Supports route redistribution

Multicast Routing Features

- Supports Multicast Routing Protocols:
    - PIM-DM (Protocol Independent Multicast - Dense Mode)
    - PIM-SM (Protocol Independent Multicast - Sparse Mode)
    - PIM-SSM (Protocol Independent Multicast - Source-Specific Multicast Mode)
- Supports IGMP v1/v2/v3

Layer 2 Features

- Supports VLAN
    - IEEE 802.1Q tag-based VLAN
    - Provider Bridging (VLAN Q-in-Q, IEEE 802.1ad) supported
    - GVRP for dynamic VLAN management
    - Private VLAN
- Supports Link Aggregation
    - 802.3ad Link Aggregation Control Protocol (LACP)
    - Cisco ether-channel (static trunk)
- Supports Spanning Tree Protocol

Scalable 10-Gigabit and 40-Gigabit Performance

The CS-6306R delivers Gigabit, **10-Gigabit** and **40-Gigabit** Ethernet connectivity in a highly-flexible and resilient modular platform. With high switching capacity, the CS-6306R Chassis Switch supports wire-speed L2/L3 forwarding and high routing performance for IPv4 and IPv6 protocols. The scalable and flexible modular architecture supports up to **3Tbps** forwarding performance in a single system. The CS-6306R is ideal for the core layer of campuses, enterprise networks and the aggregation layer of IP metropolitan networks and wide area networks.

Rich Multi-Layer Networking Protocols

The CS-6306R comes with the complete Layer 3 managed function with comprehensive protocols and applications to facilitate the rapid service deployment and management for both the traditional L2 and L3 networks. With support for advanced features, including **RIP**, **RIPng**, **OSPFv2**, **OSPFv3**, **BGP**, **BGP4+** etc., this chassis switch is ideal for the traditional or fully virtualized data center.

Strong Multicast

The CS-6306R supports abundant multicast features. In Layer 2, it features IPv4 IGMPv1/v2/v3 snooping and IPv6 MLD v1/v2 snooping. With Multicast VLAN Register (MVR), multicast receiver/sender control and illegal multicast source detect functions. In Layer 3 multicast protocols, it features **PIM-DM**, **PIM-SM** and **PIM-SSM** which make the CS-6306R great for any robust networking.

Full IPv6 Support

The CS-6306R Chassis Switch supports IPv4-to-IPv6 technologies including **IPv4 manual/automatic tunnel**, IPv6-to-IPv4 tunnel, and Intra-Site Automatic Tunnel Addressing Protocol (**ISATAP**) tunnel. It comprehensively supports IPv6 Neighbor Discovery, DHCPv6, Path MTU Discovery, IPv6-based Telnet, SSH and ACL, meeting the need of IPv6 network device management and service control.

High Reliability

The key components of the CS-6306R such as management module, power system and the fan system support redundancy design. All system modules support hot-swap and seamless switching without manual intervention.

It supports In-service Software Upgrade (**ISSU**) and Graceful Restart (**GR**) for OSPF/BGP routing protocol, guaranteeing the user data non-stop forwarding when the system is upgrading. It supports Bidirectional Forwarding Detection (**BFD**) that realizes fault detection and service recovery in seconds through linking with Layer 2 or Layer 3 protocol.

Redundant Ring, Fast Recovery for Critical Network Applications

The CS-6306R supports redundancy protection mechanism and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates Layer 3 Virtual Router Redundancy Protocol (VRRP) protocol, Layer 2 Spanning Tree Protocol **IEEE 802.1s MSTP** (Multiple Spanning Tree Protocol)

- – STP, IEEE 802.1D (Classic Spanning Tree Protocol)
- – RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)
- – MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port (many to 1)
- Loop protection to avoid broadcast loops
- Link Layer Discovery Protocol (LLDP)
- Ethernet OAM 802.3ah/802.1ag/ITU-Y.1731

Quality of Service

- Ingress shaper and egress rate limit per port bandwidth control
- 8 priority queues on all switch ports
  - – IEEE 802.1p CoS/DSCP/Precedence
  - – VLAN ID
  - – Policy-based ingress and egress QoS

Multicast

- Supports IPv4 IGMP snooping v1, v2 and v3
- Supports IPv6 MLD snooping v1 and v2
- Querier mode support
- MVR (Multicast VLAN Registration)

Security

- Authentication
  - – IEEE 802.1x port-based network access authentication
  - – Built-in RADIUS client to cooperate with the RADIUS servers
  - – RADIUS/TACACS+ users access authentication
- Access Control List
  - – IP-based Access Control List (ACL)
  - – MAC-based Access Control List (ACL)
  - – Time-based ACL
- DHCP Snooping to filter distrusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP Source Guard prevents IP spoofing attacks

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - – Console and Telnet Command Line Interface
  - – HTTP web switch management
  - – SNMP v1 and v2c switch management

technology into customer's network to enhance system reliability and uptime. In a certain simple Ring network, the recovery time could be less than 50ms to quickly bring the network back to normal operation.

Centralized Hardware Stacking Management

Several CS-6306R Chassis Ethernet Switches can be used to build a virtually logical facility. The CS-6306R gives the enterprises, service providers and telecoms flexible control over port density, uplinks and switch stack performance. The CS-6306R can connect as a ring for redundancy and ensures that data integrity is retained even if one switch in the stack fails. You can even hot-swap switches without disrupting the network, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands.

Powerful Security from Layer 2 to Layer 4

The CS-6306R offers comprehensive Layer 2 to Layer 4 Access Control List (ACL) for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. Its protection mechanism also comprises 802.1x port-based and MAC-based user and device authentication. With the private VLAN function, communication between edge ports can be prevented to ensure user privacy.

Advanced IP Network Protection

The CS-6306R also provides **DHCP Snooping**, **IP Source Guard** and **Dynamic ARP Inspection** functions to prevent from IP snooping attack and discard ARP packets with invalid MAC address. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

Enhanced Quality of Service

The CS-6306R Switch fully supports DiffServ module, so users can specify a queue bandwidth on each port. WRR/SP/SWRR scheduling is also provided. The CS-6306R supports the port security to enable trusted CoS, DSCP, IP precedence and port priority. Users can modify packets' DSCP and COS values so that the traffic can be classified by port, VLAN, DSCP, IP precedence and ACL table. User can also modify packets' DSCP and IP precedence values to specify different bandwidths for voice, data and video to customize different qualities of service.

Efficient and Secure Management

For efficient management, the CS-6306R is equipped with console, Web and SNMP management interfaces.

- With the built-in **Web-based** management interface, the CS-6306R offers an easy-to-use, platform-independent management and configuration facility.
- For **text-based** management, it can be accessed via Telnet and the console port. For reducing product learning time, the CS-6306R offers Cisco-like command via Telnet or console port and customer doesn't need to learn new command from these switches

- SSHv2, SSLv3, TLSv1.2 and SNMP v3 secure access
- SNMP Management
  - Four RMON groups (history, statistics, alarms, and events)
  - SNMP trap for interface Link Up and Link Down notification
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP
  - Reset button for system reboot
  - Dual images
- DHCP Functions:
  - DHCP Relay
  - DHCP Option 82
  - DHCP Server
- User Privilege levels control
- Network Time Protocol (NTP) and SNTP
- Network Diagnostic
  - SFP-DDM (Digital Diagnostic Monitor)
  - ICMP remote IP ping
- Syslog remote alarm
- System Log

Stacking Management

- Virtualized multiple CS-6306R switches integrated into one logical device
- Single IP address stack management, supporting up to 2 hardware units stacked together
- Stacking architecture supports redundancy Ring mode

■ For standard-based monitor and management software, it offers SNMPv3 connection which encrypts the packet content at each session for secure remote management.

Moreover, the CS-6306R offers secure remote management by supporting SSHv2, TLSv1.2 and SSLv3 connection which encrypts the packet content at each session.

Extractive Power Supply Design to Increase Flexibility

The CS-6306R is equipped with one extractive 100~240V AC power supply unit, so it is easy to replace the power for users. Besides, the CS-6306R reserves another two backup power slots on the front panel and users can add the second AC or DC power to the redundant power supply installation. The AC power or DC power is optional. The redundant power system is specifically designed to handle the demands of high-tech facilities requiring the highest power integrity.

Support Three AC or DC Redundant Power Supply Slots

3 x Redundant Power Supplies

CS6-PWR550-AC
CS6-PWR550-DC

CS-6306R

Applications

Carrier Class Backbone Switch for Campuses and Communities

For large area network communications designed for the enterprises, campuses and communities, PLANET CS-6306R Chassis Switch is the best choice for an affordable and scalable network deployment. It offers a high-capacity chassis platform with high quality and reliability in 10/100/1000BASE-T, 1000BASE-SX/LX, 10GBASE-SR/LR and 40GBASE-SR4/LR4 scalable solutions that integrate easily into any large network.

The CS-6306R can provide a maximum of up to either **192** high-density Gigabit Ethernet ports, **192** SFP ports, **64** 10G SFP+ ports or **16** 40G QSFP+ ports which are available for remote uplink connectivity in a single system and provide the uplink to the edge network through 1Gbps to 40Gbps optical transceiver modules. The CS-6306R offers a comprehensive set of modules for complex network and gives network manager the flexibility to expand large area network when needed.
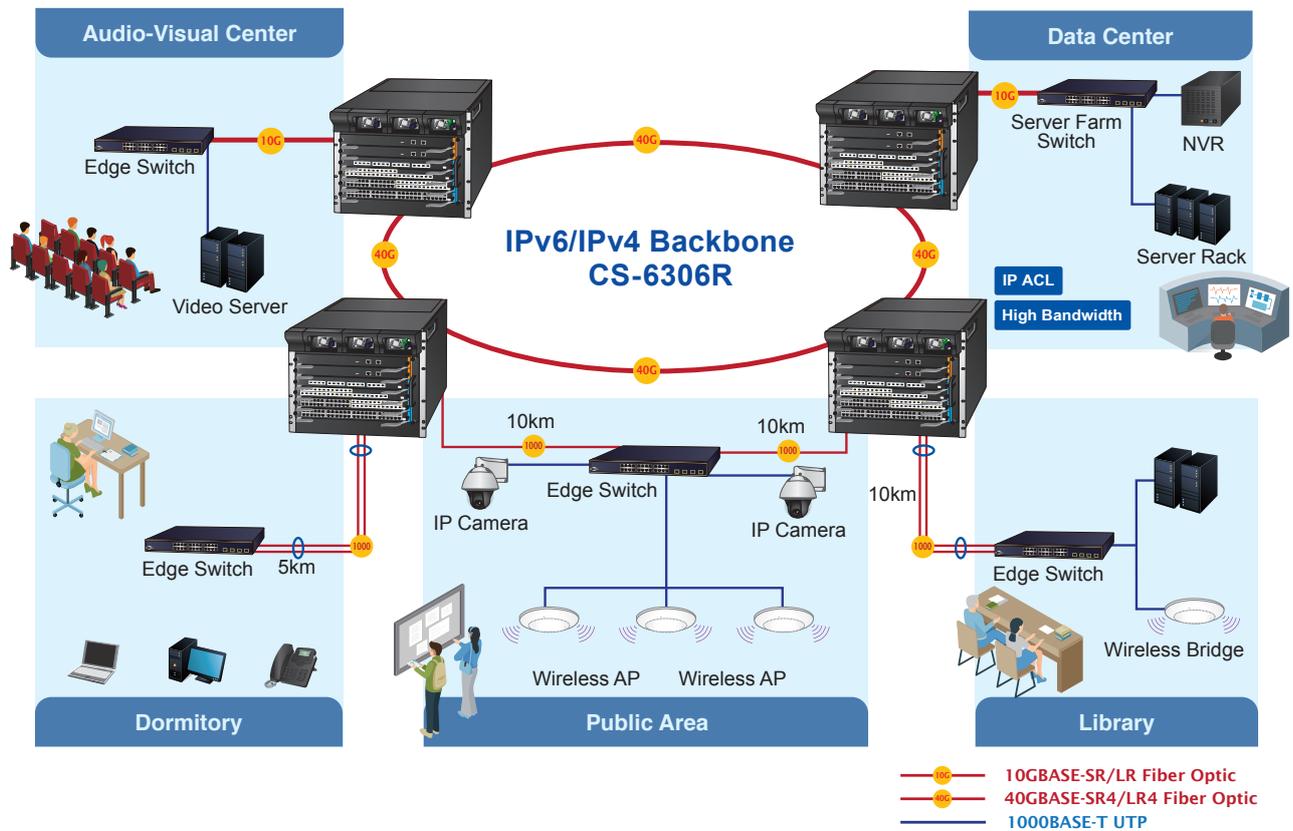
Reliable, High-performance and High-density Enterprise Backbone Switch

10/40-Gigabit Ethernet supported equipment has become the fundamental unit of enterprises and network servers. PLANET CS-6306R is the cost-effective, high-density and high-bandwidth chassis switch, which meets today's market requirements. Its dedicated chassis architecture feature makes all modules in the platform operate together as one much larger switch providing multiple high-performance 10/40-Gigabit Ethernet network for backbone of enterprises, campuses or telecoms.

The redundant management modules and three power supplies provide the CS-6306R with nonstop network service ability. Moreover, all modules are hot-swappable. They can be added or exchanged without interrupting the operation of the whole system. The CS-6306R Chassis Switch is ideal for being a server farm switch connecting to servers and perfectly suitable for those networking environments requiring constant access to critical business applications.
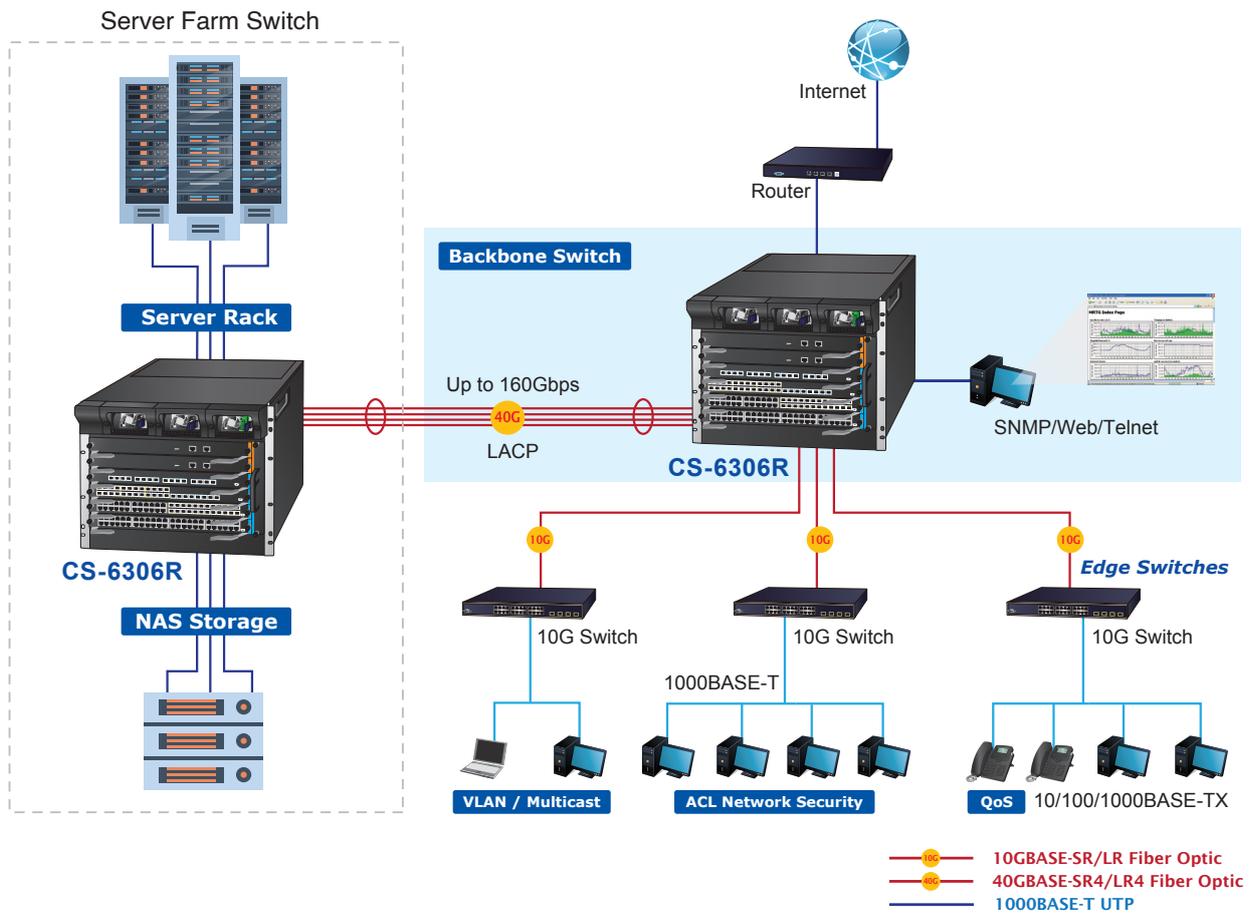
Specifications

Product	CS-6306R
Hardware Specifications	
Total Number of Slots	6
Max. Management Module	2 (slots 5 and 6) Supports dual master control redundancy and automatic recovery
Max. Switch Module	4 (slots 1 to 4)
Number of Power Supply Bays	3
Number of Fan Trays	1, hot-pluggable
Dimensions (W x D x H)	443.5 x 370 x 397 mm 482 x 370 x 397 mm (with rack-mount kit) 9U high
Weight	21.6kg (empty) 24.8kg (Chassis with 1 AC power module and 1 management module)
Power Requirement	AC: Input 100-240V~, 7A max. 50~60 Hz DC: Input 36-72V ⎓, 20A max.
Power Consumption	320W
Management Module	
Management Port	One 10/100/1000BASE-TX RJ45 port
Console	One RJ45-to-RS232 serial port (9600, 8, N, 1)
USB	1 x USB2.0 Type A for USB Storage device use.
Button	Reset button: System reboot only Host-swap button: Force swap master and slave management modules Host LED lit up to show the host swap procedure is completed
Available Switch Modules	
CS6-S24S8X	24-Port 1000BASE-X SFP + 8-Port 10GBASE-X SFP+ Backward compatible with 100BASE-FX SFP transceivers
CS6-S24T8X	24-Port 10/100/1000BASE-T + 8-Port 10GBASE-X SFP+ SFP+ slot is backward compatible with 1000BASE-X SFP transceivers
CS6-S48T	48-Port 10/100/1000BASE-T
CS6-S48S	48-Port 1000BASE-X SFP Backward compatible with 100BASE-FX SFP transceivers
CS6-S24T24S	24-Port 10/100/1000BASE-T + 24-Port 1000BASE-X SFP
CS6-S16X	16-Port 10GBASE-X SFP+ Backward compatible with 1000BASE-X SFP transceivers
CS6-S4Q	4-Port 40GBASE-X QSFP+ Supports 40GBASE-SR4/LR4 QSFP+ transceivers and 40G QSFP+ to 4x10G SFP+ breakout cable
Total Port Capacity	
Max. 10/100/1000BASE-T	192
Max. 1000BASE-X SFP Ports	192
Max. 10G SFP+ Ports	64
Max. 40G QSFP+ Ports	16
Switching Performance	
Switch Processing Scheme	Store-and-Forward
Switch Back plan	3Tbps
Switch Capacity	2.56Tbps
Switch Throughput	810Mpps@64bytes
MAC Address Table	32K
ARP Table	16K
VLAN Table	4K VLAN entries
ACL Table	Ingress Filter: 2560 Egress Filter: 1024
Shared Data Buffer	32MB
Layer 3 Interface	Max. 256 VLAN interfaces for IPv4 Max. 256 VLAN interfaces for IPv6
Routing Table	IPv4 Protocol: 16K IPv6 Protocol: 8K
Multicast Table	8K (IPv4/IPv6 shared)
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	9216Bytes
FLASH	64Mbytes
RAM	1Gbytes

IPv4 Layer 3 Functions	
IP Routing Protocol	RIP v1/v2 OSPFv2 BGP (Border Gateway Protocol) Static routing
Multicast Routing Protocol	PIM-DM and PIM-SM PIM-SSM
Routing Interface	256
Routing Functions	VRRP Policy routing Load balance through equal-cost routing GR (Graceful Restart) of OSPF and BGP BFD (Bidirectional Forwarding Detection) for OSPF and BGP IS-IS, Intermediate system to intermediate system
IPv6 Layer 3 Functions	
IP Routing Protocol	RIPng OSPFv3 BGP4+
Multicast Routing Protocol	PIM-DM and PIM-SM PIM-SSM
Routing Features	Manual tunnel ISATAP tunnel 6-to-4 tunnel
IPv6 Functions	ICMPv6, DHCPv6, ACLv6, IPv6 Telnet IPv6 Neighbor Discovery Path MTU Discovery
Layer 2 Functions	
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow control disable/enable Bandwidth control on each port Port loopback detect
Port Mirroring	TX/RX/Both Many to 1
Link Aggregation	Supports link aggregation cross switch module
VLAN	IEEE 802.1Q tag-based VLAN, IEEE 802.1ad Q-in-Q VLAN stacking/tunneling GVRP for VLAN management Private VLAN Up to 4K VLAN groups
Spanning Tree Protocol	IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) BPDU protection, root protection
IPv4 IGMP Snooping	IPv4 IGMP v1/v2/v3 snooping IPv4 Querier mode support IGMP Filtering and IGMP Throttling IGMP Proxy reportin IGMP mmulticast forwarding Up to 8K multicast groups
IPv6 MLD Snooping	IPv6 MLD v1/v2 snooping Multicast VLAN Register (MVR) Up to 8K multicast groups

QoS	8 priority queues on all switch ports Scheduling for priority queues 　- Weighted Round Robin (WRR) 　- Strict priority (SP) 　- SP+WRR Traffic classification: 　- IEEE 802.1p CoS 　- DSCP 　- DiffServ 　- Precedence 　- TOS 　- VLAN ID 　- IP ACL 　- MAC ACL Policy-based ingress and egress QoS 802.1p and DSCP priority remark
Storm Control	Suppression of broadcast, multicast and unknown unicast packet
Bandwidth Control	Ingress and Egress At least 64Kbps stream
Ring	MSTP, IEEE 802.1s Multiple Spanning Tree Protocol
Security Functions	
Access Control List	Supports Standard and Expanded ACL 　- IP-based ACL 　- MAC-based ACL 　- Time-based ACL ACL based on: 　- MAC Address 　- IPv4/IPv6 IP Address 　- Protocol-number 　- sport/dport 　- ToS/Precedence Ingress Filter: 2560 entries Egress Filter: 1024 entries
Security	MAC address limitation and MAC address filtering MAC sticky (IP + MAC + Port binding) Port isolation DHCP snooping, DHCP option 82 Dynamic ARP inspection IP source guard Defined against DoS or TCP attacks
AAA	TACACS+ and IPv4/IPv6 over RADIUS
Network Access Control	IEEE 802.1x port-based network access control
Management Functions	
System Configuration	Console and Telnet Web browser SNMP v1, v2c
Secure Management Interfaces	SSHv2, SSLv3 Maximum 8 sessions for SSH and Telnet connection
Management Interface	CLI/MGMT/Telnet/SSH
System Management	IPv4 and IPv6 dual stack management SNMP MIB and TRAP SNMP RMON 1, 2, 3, 9 four groups Firmware upgrade by TFTP protocol through Ethernet network Configuration upload/download through TFTP protocol Supports IEEE 802.1ab LLDP protocol NTP and SNTP client RADIUS authentication for IPv4/IPv6 login user name and password Statistics analysis of sFlow and Netflow
Event Management	Remote syslog System log

SNMP MIBs	RFC 1213 MIB-II
	RFC 1215 Internet Engineering Task Force
	RFC 1271 RMON
	RFC 1354 IP-Forwarding MIB
	RFC 1493 Bridge MIB
	RFC 1643 Ether-like MIB
	RFC 1907 SNMPv2
	RFC 2011 IP/ICMP MIB
	RFC 2012 TCP MIB
	RFC 2013 UDP MIB
	RFC 2096 IP forward MIB
	RFC 2233 if MIB
	RFC 2452 TCP6 MIB
	RFC 2454 UDP6 MIB
	RFC 2465 IPv6 MIB
	RFC 2466 ICMP6 MIB
	RFC 2573 SNMPv3 notification
	RFC 2574 SNMPv3 VACM
	RFC 2674 Bridge MIB Extensions

Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10BASE-T
	IEEE 802.3u 100BASE-TX
	IEEE 802.3z 1000BASE-SX/LX
	IEEE 802.3ab Gigabit 1000T
	IEEE 802.3ae 10Gigabit Ethernet
	IEEE 802.3ba 40Gigabit Ethernet
	IEEE 802.3x Flow Control and Back Pressure
	IEEE 802.3ad Port Trunk with LACP
	IEEE 802.1d Spanning Tree protocol
	IEEE 802.1w Rapid Spanning Tree Protocol
	IEEE 802.1s Multiple Spanning Tree Protocol
	IEEE 802.1p Class of Service
	IEEE 802.1Q VLAN tagging
	IEEE 802.1ad Double VLAN tagging (Q-in-Q)
	IEEE 802.1x Port Authentication Network Control
	IEEE 802.1ab LLDP
	IEEE 802.3az Energy Efficient Ethernet
	RFC 768 UDP
	RFC 793 TFTP
	RFC 791 IP
	RFC 792 ICMP
	RFC 2068 HTTP
	RFC 1112 IGMP v1
	RFC 2236 IGMP v2
	RFC 3376 IGMP v3
	RFC 2710 MLD v1
	RFC 3810 MLD v2
	RFC 2328 OSPF v2
	RFC 1058 RIP v1
	RFC 2453 RIP v2
	RFC 2080 RIPng for IPv6
	RFC 2740 OSPFv3 for IPv6

Environment	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 10 ~ 90% (non-condensing)
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 90% (non-condensing)

Ordering Information

CS-6306R	6-slot Layer 3 IPv6/IPv4 Routing Chassis Switch (with one AC power supply unit)

Available Management and Switch Modules

CS6-MCU	Multi-layer Management Module for CS-6306R
CS6-S48T	48-Port 10/100/1000T Switch Module for CS-6306R
CS6-S48S	48-Port 1000X SFP Switch Module for CS-6306R
CS6-S24S8X	24-Port 1000X SFP + 8-Port 10G SFP+ Switch Module for CS-6306R
CS6-S24T8X	24-Port 10/100/1000T + 8-Port 10G SFP+ Switch Module for CS-6306R
CS6-S24T24S	24-Port 10/100/1000T + 24-Port 1000X SFP Switch Module for CS-6306R
CS6-S16X	16-Port 10G SFP+ Switch Module for CS-6306R
CS6-S4Q	4-Port 40G QSFP Switch Module for CS-6306R

Available Power Modules

CS6-PWR550-AC	550-watt AC Power Supply for CS-6306R, AC 100~240V
CS6-PWR550-DC	550-watt DC Power Supply for CS-6306R, DC 36~72V

Available for 40Gbps Ports

QSFP-40G-SR4	40GBASE-SR4 QSFP+ Fiber Transceiver (Multimode, MPO, 850nm, DDM) – 100m
QSFP-40G-LR4	40GBASE-LR4 QSFP+ Fiber Transceiver (Single mode, LC, 1310nm, DDM) – 10km
CB-DAQSFP-0.5M	40G QSFP+ Direct Attached Copper Cable (0.5M)
CB-DAQSFP-2M	40G QSFP+ Direct Attached Copper Cable (2M)
CB-QSFP4X10G-1M	40G QSFP+ to 4 10G SFP+ Direct Attached Copper Cable (1M in length)
CB-QSFP4X10G-3M	40G QSFP+ to 4 10G SFP+ Direct Attached Copper Cable (3M in length)
CB-QSFP4X10G-5M	40G QSFP+ to 4 10G SFP+ Direct Attached Copper Cable (5M in length)

Available 10Gbps Modules

MTB-SR	SFP-Port 10GBASE-SR Mini-GBIC Module – 300m
MTB-LR	SFP-Port 10GBASE-LR Mini-GBIC Module – 10km
MTB-LR20	SFP-Port 10GBASE-LR Mini-GBIC Module – 20km
MTB-LR40	SFP-Port 10GBASE-LR Mini-GBIC Module – 40km
MTB-LR60	SFP-Port 10GBASE-LR Mini-GBIC Module – 60km
MTB-SR2	SFP-Port 10GBASE-SR Mini-GBIC Module – 2km
MTB-LA20	SFP-Port 10GBASE-LR (WDM,TX:1270nm) Mini-GBIC Module – 20km
MTB-LB20	SFP-Port 10GBASE-LR (WDM,TX:1330nm) Mini-GBIC Module – 20km
MTB-LA40	SFP-Port 10GBASE-LR (WDM,TX:1270nm) Mini-GBIC Module – 40km
MTB-LB40	SFP-Port 10GBASE-LR (WDM,TX:1330nm) Mini-GBIC Module – 40km
MTB-LA60	SFP-Port 10GBASE-LR (WDM,TX:1270nm) Mini-GBIC Module – 60km
MTB-LB60	SFP-Port 10GBASE-LR (WDM,TX:1330nm) Mini-GBIC Module – 60km

Available 1000bps Modules

MGB-GT	SFP-Port 1000BASE-T Module
MGB-SX	SFP-Port 1000BASE-SX Mini-GBIC Module – 220/550m
MGB-SX2	SFP-Port 1000BASE-SX Mini-GBIC Module – 2km
MGB-LX	SFP-Port 1000BASE-LX Mini-GBIC Module – 20km
MGB-L40	SFP-Port 1000BASE-LX Mini-GBIC Module – 40km
MGB-L80	SFP-Port 1000BASE-LX Mini-GBIC Module – 80km
MGB-L120	SFP-Port 1000BASE-LX Mini-GBIC Module – 120km
MGB-LA10	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 10km
MGB-LB10	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 10km
MGB-LA20	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 20km
MGB-LB20	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 20km
MGB-LA40	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 40km
MGB-LB40	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 40km
MGB-LA80	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 80km
MGB-LB80	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 80km

Available 100Mbps Modules

MFB-FX	SFP-Port 100BASE-FX Transceiver (1310nm) – 2km
MFB-F20	SFP-Port 100BASE-FX Transceiver (1310nm) – 20km
MFB-F40	SFP-Port 100BASE-FX Transceiver (1310nm) – 40km
MFB-F60	SFP-Port 100BASE-FX Transceiver (1310nm) – 60km
MFB-F120	SFP-Port 100BASE-FX Transceiver (1310nm) – 120km
MFB-FA20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) – 20km
MFB-FB20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) – 20km
MFB-TFA40	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) – 20km (-40 ~ 75ºC)
MFB-TFB40	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) – 20km (-40 ~ 75ºC)

CS-6306R