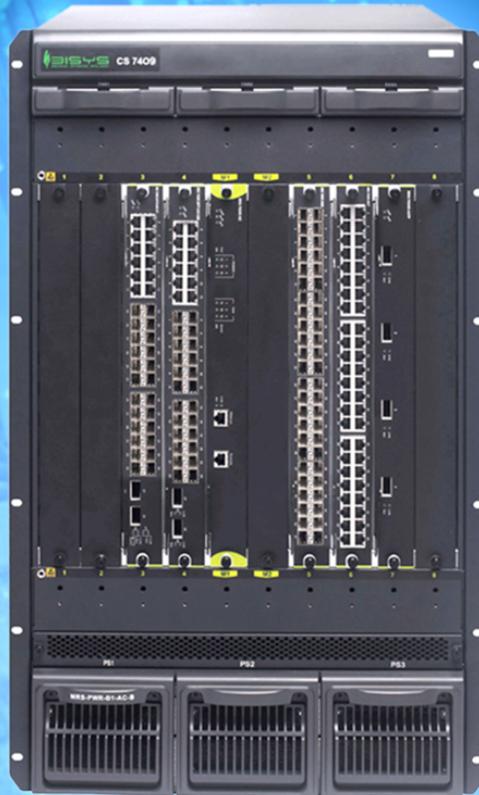


# CS-7400 SERIES DUAL STACK CORE ROUTING SWITCH



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## PRODUCT OVERVIEW

3ISYS Networks CS-7400 Series is high performance chassis switch, which consists of two models.

- The CS-7404 is a 4 slots Chassis Switch. It can work with 1 or 2 management modules and 2 or 3 business modules. High density is achieved via business ports which is present on it.
- The CS-7409 has 10 slots. It has 2 management slots and 8 business slots. All business slots configuration can be any combination of network interface modules.

The CS-7400 ensures uninterrupted & fully redundant operation with its redundant power supply, fans and management modules. Moreover, all modules are hot swappable. They can be added or exchanged without interrupting the whole system.

The CS-7400 series is ideal choice for the core layer of enterprise networks, campuses and the aggregation layer of IP metropolitan networks.

## TargetMarket

- With the rich features and high performance and flexible ports, the products can be deployed to the following networks:

## Target Market

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**MAN**



**Campus**



**LAN**



**Dual Stack**

<b>Core</b>	<b>N</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>
<b>Aggregation</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>N</b>
<b>Access</b>	<b>Y</b>	<b>N</b>	<b>N</b>	<b>N</b>

## MAIN FEATURES

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- CS-7404 supports up to 13\*10G ports or 188 (48\*3+44) Gigabit ports or 188\*10/100 ports,
- CS-7409 supports up to 32 \*10G ports or 384 (48\*8) Gigabit ports, providing flexibility and high port density.
- 10G modules support 4 ports for downlink to L3 Gigabit distribution layer switches or L2 Gigabit switches, aggregating them to the core layer, and preventing port bottlenecks in Gigabit switches. Furthermore, the optional 10Gigabit Ethernet XFP transceivers can be chosen for different distance fiber uplinks.
- Availability of a master controller is ensured by the aid of Backup Master for network control at any time.
- For management simplicity, firmware & configuration are automatically upgraded from master to slave units.
- \*Future investment protection is ensured by the intensive protocol support for MPLS, MPLS-VPN, and ensuring future investment protection
- Supports OpenFlow 1.2 standard protocol. OpenFlow network is increasingly becoming a trend as the core protocol of SDN network. It makes the network programming easier. Openflow brings the high performance to datacenter users via self-defined network. With OpenFlow, this product is ideal to build SDN test-bed for research institutes and SDN Experimental Bureau for large ISP and operator.
- IEEE 802.1w Rapid Spanning Tree Protocol provides a loop free network and redundant links to the core network with speedy convergence.
- IEEE 802.1s Multiple Spanning Tree Protocol runs STP per VLAN base, providing Layer 2 load sharing on redundant links.
- IEEE 802.3ad Link Aggregation Control Protocol (LACP) increases bandwidth by automatically aggregating several physical links together as a logical trunk and providing load balancing and fault tolerance for uplink connections.
- IGMP snooping prevents flooding of IP multicast traffic, and limits bandwidth intensive video traffic only to the subscribers.
- 8 egress queues per port enable distinguished management of up to 8 traffic types.
- Traffic is ranked according to 802.1p, DSCP, IP precedence and TCP/UDP port number, giving optimal performance to real-time applications such as voice and video.
- Bidirectional rate limiting, per port or traffic class, preserves network bandwidth and allows full control of network resources.
- IEEE 802.1X port-based access control ensures all users are authorized before being granted access to the network.
- MAC based authentication can provide client-free security access and help customer deployed security rapidly.
- Access Control Lists (ACL) can be used to restrict access to sensitive network resources by denying packets based on L2/L3/L4 headers.
- SSL, Web Management Encryption, RADIUS and TACACS+ authentication protect data communication and ensure data privacy.
- Switch management is provided by Industry standard Command Line Interface (CLI) via console port or Telnet.
- The switch is embedded with a user friendly web interface that helps users quickly and easily configure switches.
- Backup and restore facility for firmware and configuration files via TFTP.

- The CS-7400 series delivers high-performance hardware based IP routing.
  - Dynamic routing is provided by RIP, OSPF and BGP by swapping routing information with other Layer 3 switches or routers.
  - DVMRP, PIM-DM Multicast Routing Protocols send IP multicast traffic from one subnet to another.
  - VRRP prevents your system from failing by dynamically backing up multiple L3 switches for routing.
  - Support OSPF and BGP agile restart to protect network stability. .
- The CS-7400 series switch supports IPv6 routing in hardware for maximum & futuristic performance. As more network devices growing and the need for larger addressing and higher security become critical, the CS-7400 series switch will be a right product to meet the requirement. The CS-7400 passed IPv6 form Phase II certificate is the best proof of the application.
- The CS-7400 incorporates abundant multicast features. The product support rich L2 multicast features such as IGMPv1/v2/v3 and snooping and L3 multicast protocols such as DVMRP, PIM-DM, PIM-SM and PIM-SSM. As the rich application experience, the product support multicast vlan register and multicast receive control and illegal multicast source detect functions.
- MRPP is Multi-layer Ring Protection Protocol. It introduced Layer concept for loop at the basis of traditional loop protect protocol. Each loop layer has multiple same levels Ethernet loop network. With multi-loop layers, it can achieve quick convergence from core to aggregation.
  - MRPP can get fast recovery for links at different layers. Compared with spanning tree protocol, it has advantages of rapid convergence, simple protocol calculation, little system resources cost, clear networking idea and so on, which can improve the reliability of Ethernet network operation.

## SPECIFICATIONS

<b>Model</b>	<b>CS-7404</b>	<b>CS-7409</b>
<b>Slot</b>	1 or 2 management slots 3 or 2 business slots	2 management slots 8 business slots
<b>Business Ports</b>	10/100/1000BASE-T:MAX 188 1000Base-SX:MAX 188 1000Base-LX:MAX 188 10/100Base-T:MAX 188 10G:MAX 13	10/100/1000BASE-T: MAX 384 1000Base-SX:MAX 384 1000Base-LX:MAX 384 10/100Base-T:MAX 384 10G: MAX 32
<b>Console</b>	1	1
<b>Performance</b>		
<b>Backplane Bandwidth</b>	120Gbps	320Gbps
<b>Switching Capacity</b>	360Gbps	896Gbps
<b>Forwarding Rate</b>	268Mpps	667Mpps
<b>Routing Table</b>	MAX12K	MAX 128K
<b>VLAN Table</b>	4K	4K
<b>Features</b>		
<b>Forwarding</b>	Storage and forwarding	
<b>L2 Features</b>	IEEE802.3(10Base-T) IEEE802.3u(100Base-TX) IEEE802.3z(1000BASE-X) IEEE802.3ab(1000Base-T) IEEE802.3ae(10GBase) Loopback interface 9k Jumbo Frame Port loop detect LLDP and LLDP-MED UDLD Support LACP 802.3ad, max 128 group trunk with max 8 ports for each trunk, Support load balance	

	<p>IEEE802.1d(STP)</p> <p>IEEE802.1W(RSTP)</p> <p>IEEE802.1S(MSTP) Max 48 instance</p> <p>Root Guard</p> <p>Bpdu Guard</p> <p>BPDU forwarding</p>
	<p>Support one to one or any to one mirror</p> <p>Support mirror cross business boards</p> <p>Support RSPAN</p>
	<p>IGMP v1/v2/v3, IGMP v1/v2/v3 Snooping, IGMP proxy</p> <p>ICMPv6, ND, ND snooping, MLDv1/v2, MLDv1/v2 snooping</p>
	<p>QinQ, GVRP, Broadcast / Multicast / Unicast Storm Control</p> <p>Port/ MAC/ IP segment/ Protocol/ Voice/ Private/ Vlan support</p> <p>Multicast Vlan register/MVR for IPv4 and IPv6</p>
	<p>Support port-based 802.1Q, 4096 VLAN</p>
	<p>MAC binding(Ipv4 /Ipv6), MAC filter, MAC limit</p>
	<p>Support smart link( or named flexible link)</p>
	<p>Port binding(Ipv4 /Ipv6) and IP source guard</p>
■ L3 Features	<p>IP Protocol(IP support both of IPv4 and IPv6)</p>
	<p>Default Routing, Static Routing, Black hole route, VLSM and CIDR,</p>
	<p>RIPv1/V2, OSPFv2, BGP4, support MD5 authentication LPM Routing</p>
	<p>OSPFv3, BGP4+ support</p>
	<p>Support 4 byte BGP AS number</p>
	<p>Support GR for OSPF and BGP</p>
	<p>Policy based Routing(PBR) for IPv4 and IPv6</p>
	<p>VRRP, VRRP v3</p>

	<p>DVMRP, PIM-DM, PIM-SM, PIM-SSM, MSDP</p> <p>Static Multicast route</p> <p>Multicast edge configure</p> <p>Any cast RP for Ipv4 and Ipv6</p> <p>PIM-SM/DM/SSM for IPv6, 6 to 4 Tunnels, configured Tunnels, ISATAP</p> <p>Multicast receive control</p> <p>Illegal multicast source detect</p>
	URPF for IPv4 and IPv6
	Support BFD
	Support ECMP(Equal Cost Multi-Path)with maxim 8 groups
	ARP guard, Local ARP proxy, Proxy ARP, ARP binding, Gratuitous ARP, ARP limit
<b>Tunnel technical</b>	<p>Support manual configure IPv4/IPv6 tunnel</p> <p>Support 6to4 tunnel</p> <p>Support ISATAP tunnel</p> <p>Support GRE tunnel*</p> <p>* supported by MRS-7400-2XFP24GB12GT</p>
<b>MPLS*</b>	<p>Support 255 VRF/VFI</p> <p>Support LDP</p> <p>L3 MPLS VPN</p> <p>L2 VLL/VPLS</p> <p>MPLS/VPLS proxy</p> <p>MPLS-TE/FRR*</p> <p>Support cross domain MPLS VPN</p> <p>Support MPLS QOS</p> <p>*Supported by software upgrade in future and MRS-7400-2XFP24GB12GT</p>
<b>QoS</b>	<p>8 hardware queues per port</p> <p>Support traffic classification based on IEEE 802.1p, ToS, port and DiffServ</p> <p>Support SP, WRR.SWRR</p> <p>Support Traffic Shaping</p>

	Support PRI Mark/Remark
<b>ACL</b>	Support standard and expanded ACL
	Support IP ACL and ACL,
	Support ACL based on source/definition IP, MAC, L3 IP, TCP/UDP port number, IP PRI(DSCP, ToS, Precedence), Time
<b>ACL-X</b>	Support time-based security auto-negotiation
	ACL rules can be configured to port, VLAN, VLAN routing interfaces
	Can be used for QoS classification
<b>Anti-attack and Security</b>	S-ARP: ARP inspection, defense ARP-DOS attack and address clone
	Anti-Sweep: prevent ping Sweep
	S-ICMP: resist PING-DOS attack, ICMP unreachable attack
	S-Buffer: prevent DDOS attack
	Switch engine CPU protection
	Key message priority: secure processing of key legal messages
	Port credit: inspect illegal DHCP Server, Radius Server. Connection via credit port only
	Advanced LPM: filter "Bluster", "zero day" and "SQL slammer warm"
	Support URPF, avoid IP address clone
All the above technologies efficiently prevent various DOS attack (e.g. ARP, Syn flood, Smurf, ICMP attack), support ARP monitoring, defense Worm, Bluster, check sweep and raise alarm	
<b>Reliability and Redundancy Balance</b>	Support MSTP(802.1s)
	Support VRRP, LACP load balance
	Multi-layer Ring Protection Protocol
	Support VLAN based traffic balance MRPP
	Redundant power supply, power load balancing
	Support Firmware & Configure dual fault tolerance backup
	Support shift between main/backup, all hot-swappable
<b>DHCP</b>	Support DHCP Client, Relay, Snooping, Option 82
	DHCP Server for IPv4 and IPv6
	DHCP v6 and DHCP snooping V6

<b>DNS</b>	DNS Client DNS proxy
<b>Access security</b>	802.1X Port, MAC, username based Support account based on time length and traffic Support guest vlan and auto vlan Work with private client can manage P2P traffic MAC Based AAA(Client free access) PPPOE/PPPOE+ forwarding
<b>AAA</b>	Support RADIUS for IPV4 and IPv6 TACACS+
<b>Configuration and Management</b>	Support CLI, support Console(RS-232), support Telnet (Ipv4/Ipv6), SSH(Ipv4/Ipv6),SSL for IPv4
	Support SNMPv1/v2c/v3 for IPv4, SNMPv1/v2c for IPv6
	Support MIB
	Support RMON 1, 2, 3, 9
<b>Power Saving Technology</b>	Support, reduce power consumption, improve cooling and reliability
<b>SysLog</b>	Support save syslog and trap to local device or server Support max 8 servers for syslog or trap receive
<b>NMS</b>	Strict access control by ACL Access Switch through AAA or Local Authentication Support SNTP and NTP Setup time zone and Daylight Saving time
<b>Supervision and Trouble Shooting</b>	Supervise abnormality of task, memory, CPU, stack, switch chip, temperature and raise alarm S flow for IPv4 and IPv6 Support IPFIX (IP Flow Information Export) Ping and trace route command

<b>Configuration Management</b>	Configuration file storage	
	Command operation log	
	Support FTP/TFTP server or client upgrade	
	Support X-modem protocol transfer the file	
<b>Physical</b>		
<b>Dimension(W x D x H)</b>	445mm*421mm*266mm(6.5U)	436mm*478mm*797mm(18U)
<b>Relative Humidity</b>	10%~90%, non-condensing	
<b>Storage Temperature</b>	40°C~70°C	
<b>Operating Temperature</b>	0°C~40°C	
<b>Power</b>	AC: Input 100V~240V AC DC: Input -48V~-60V/DC	AC: Input 100V~240V AC
<b>MTBF</b>	>250,000 hours	>250,000 hours
<b>Power Consumption</b>	≤400W	≤1200W
<b>EMC safety</b>	FCC, CE, RoHS,	FCC, CE, RoHS

**The contents marked with "\*" need future upgrade or are under development**

# 1 year

## Product Information

Product	Description
<b>CS-7409E</b>	10-Slot Chassis Core Routing Switch (3 power supply at most, N+1 redundancy, Standard with 1 3ISYS-PWR-B1-AC-B, 3 hot-pluggable fan trays. No management module, )
<b>CS-7404E</b>	4-Slot Chassis Core Routing Switch (1+1 power supply redundancy, Standard with 1 3ISYS-PWR-A1-AC-B, 1 hot-pluggable fan tray. No management module, )
<b>CS-7404E-DC</b>	4-Slot Chassis Core Routing Switch (1+1 power supply redundancy, Standard with 1 3ISYS-PWR-A1-DC, 1 hot-pluggable fan tray. No management module, )
<b>3ISYS-PWR-B1-AC-B</b>	220V AC Power Supply (600W) for CS-7409E
<b>3ISYS-PWR-A1-AC-B</b>	220V AC Power Supply (400W) for CS-7404E
<b>3ISYS-PWR-A1-DC-B</b>	(-48) V DC Power Supply(400W) for CS-7404E
<b>3ISYS-7409-MI</b>	CS-7409E Management Module Type I
<b>3ISYS-7409-MII</b>	CS-7608E Management Module Type II (High performance management module)
<b>3ISYS-7404E-M4GX24TX</b>	CS-7404E Management Module, 24 *10/100BaseTX and 4 Combo(SFP/GT)
<b>3ISYS-7404E-M1XFP12GX12GT</b>	CS-7404E management module, with 1 port 10G (XFP), 12 ports 10/100/1000Base-T, and 12 port SFP(Combo),. hardware based IPv6
<b>3ISYS-7404E-M1XFP12GX12GB</b>	CS-7404E management module, with 1 port 10G (XFP), 12 ports SFP, and 12 port Gigabit Combo(SFP/GT),. hardware based IPv6
<b>3ISYS-7400E-12GX12GT</b>	CS-7400E Enhanced Interface Module with 12 10/100/1000Base-T ports and 12 Gigabit Combo(SFP/GT) ports, hardware based IPv6
<b>3ISYS-7400E-12GX12GB</b>	CS-7400E Enhanced Interface Module with 12 SFP ports and 12 Gigabit Combo(SFP/GT) ports, hardware based IPv6
<b>3ISYS-7400E-2XFP24GB12GT</b>	CS-7400E Enhanced Interface Module with 2 10G(XFP)ports+ 12 10/100/1000Base-T ports+ 24 Gigabit SFP ports, ASIC-based hardware line speed IPv6 and MPLS support.
<b>3ISYS-7400E-2XFP12GX12GB</b>	CS-7400EnhencedSeires LPU, 2*10GB(XFP)+12*GE Combo(SFP/GT) +12*10/100/1000Base-T, Wire-Speed, IPv6 supported

<b>3ISYS-7400E-2XFP12GX12GT</b>	CS-7400E Enhanced Interface Module with 2 10G (XFP) ports + 12 10/100/1000Base-T ports + 12 Gigabit Combo(SFP/GT) ports, ASIC-based hardware line speed IPv6.
<b>3ISYS-7400E-48GT</b>	CS-7400E Enhanced 48 ports 10/100/1000Base-T module, hardware based IPv6
<b>3ISYS-7400E-48GB</b>	CS-7400E Enhanced 48 ports 1000Base-X(SFP) module, hardware based IPv6
<b>3ISYS-7400E-4XFP</b>	CS-7400E Enhanced 4 ports 10G(XFP) module, hardware based IPv6



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