

# DIANA Series

## Layer3 10G Fiber Switch

### Overview

The DCS-24F-4C-4XF switch is a layer 3 fiber switch, which can meet the needs of cost-effective Gigabit access and 10 Gigabit uplink for enterprise networks and operator customers. DCS-24F-4C-4XF uses a high-performance low-power network processor, provides Gigabit line-speed forwarding performance, supports green Ethernet line sleep capability, has the lowest power consumption of the same-level equipment in the industry, supports powerful QoS and ACL functions, and supports IP+MAC+ Security features such as port binding support service flow classification and packet priority marking. Support static data packet sampling, SFLOW function, support multi-port Mirroring analysis function, support static and flexible QinQ function, support Ethernet OAM 802.3ag (CFM), 802.3ah (EFM), support strategy-based IPV4/6 unicast routing, support Flexible forwarding strategy。

### Model Select



#### DCS-24F-4C-4XF

- 24\* 1000M Base-X SFP port
- 4\* GE/SFP Combo port
- 4\*10GE SFP+ port
- 128Gbps Switching capacity
- Dual AC redundant power (RPS)
- 19"1U (440X260X44mm)

# Features

## Carrier-level high availability

The switch not only supports the traditional STP/RSTP/MSTP spanning tree protocol, but also supports the G.8032 International standard ERPS protocol issued by ITU-T. This standard can realize 50ms fast loop recovery under Ethernet ring network. One switch can connect to multiple aggregation switches through multiple links, significantly improving the reliability of access devices.

## Layer3 routing and enhanced multi-service

Support static route

Support dynamic route such as RIP, OSPF, BGP, IS-IS

Support IPV4/IPV6 dual protocol stack , Support RIPng 、 OSPFv3

Support DHCP Server and DHCP Relay, L2-Tunnel

Support Ethernet OAM protocol such as CFM 、 EFM

## Uninterrupted PoE power supply

When the device restarts, the PoE switch will not interrupt the power supply to the connected camera, VoIP phone and other powered devices, ensuring that the powered device will not lose power during the restart of the switch, and achieve interruption of PoE power supply.

## Hardware based ACL control

The hardware based ACL processing mechanism is adopted to ensure the control requirements of Gigabit high-speed forwarding; it supports ACL access control from the second to the seventh layer, which can be based on the source and destination MAC addresses, source and destination IP addresses, UDP/TCP port numbers, and IP addresses. The protocol type and other information classify the data flow, and set the access control rules according to the data classification. You can set permit or deny, and then apply the rules to VLANs or physical ports; support the global ACL Function, which expands the number of effective ACL entries, which is convenient The use and maintenance of customers.

## Enhanced security and authentication technologies

Provides multiple security policies such as user authority/identity authentication, port security, port speed limit, port monitoring, address filtering, loopback detection, 802.1X authentication etc., to provide multiple protection mechanisms for user access and network security. It has a very good security function design, supports user security policy-based SNMP V3, MAC+IP+VLAN binding,

802.1X authentication and other security strategies, supports anti-network storm attacks, anti-DOS/DDOS attacks, anti-ARP attacks, Security technologies such as anti-network protocol message attacks can effectively prevent attacks and viruses, and are more suitable for large-scale, multi-service, and complex traffic access networks

### Full QoS policy and Q-in-Q for campus or carrier network

The Switch fully implements the DIFFSERV model, provides up to 8 QoS queues, supports DSCP/TOS/802.1P and other QoS methods, SP, SRR, WRR, WFQ and hybrid scheduling and other priority queue scheduling algorithms, which can achieve port speed limit QoS functions such as traffic shaping to meet customer network requirements for data processing priority; support port trust, configurable trust CoS, DSCP, IP priority, port priority, and modify the DSCP and CoS values of data packets; according to the port , VLAN, DSCP, IP priority, ACL table to classify the traffic, modify the DSCP and IP priority of the data packet, and specify different bandwidths to provide different service quality for voice/data/video transmission in the same network. Support QinQ function, encapsulate the user's private network VLAN tag in the public network VLAN tag, so that the message will pass through the backbone network with two layers of VLAN tag to realize the intercommunication of the user's private network.

### Simple and easy-to-use network management function

Support CLI based on RS232 serial port, Telnet and SSHv2

Support WEB-based configure operation management, support SNMP V1/V2/V3

Support remote upgrade or equipment through FTP and TFTP

## Specification

Model	DCS-24F-4C-4XF
Port	24* 1000M Base-X SFP port 4* GE/SFP Combo port 4*1000M Base-X SFP/10G SFP+
Switching capacity	128Gbps
forwarding rate	95Mbps
MAC	16K
Multicast	1K
ARP table	2K
Route table	512

Flash	32MB
DDR Memory	512MB
Power supply	Dual AC redundant power supply (RPS) AC : 100 ~ 240V 47/63Hz ;
Power consumption	≤38W
Dimensions (WxDxH)	440×260×44mm
Working Temperature:	-10°C ~ 55°C
Storage temperature	-40°C ~ 70°C

## Software

Ethernet	Ethernet interface operating modes (full duplex, half duplex, and auto-negotiation)
	Ethernet interface operating rates
	Jumbo Frame
	Port enable/disable
	Flow-control tx/rx
	Port based storm-control
	Unknown-unicast/unknown-multicast/broadcast storm-control
	Port-isolate
	Cut-through
VLAN	Access/Trunk/Hybrid
	4K VLAN
	Default VLAN
	VLAN Classification(port based/mac based/ip based/protocol based)
	Basic QinQ
	Flexible QinQ
	VLAN Swap
MAC	Automatic learning and aging of MAC addresses
	Hardware Learning
	Static and dynamic MAC address entries
	Blackhole MAC
LAG	Static-LAG & LACP
	LAG load balance ( SIP/DIP/SMAC/DMAC )
STP	Spanning-Tree Protocol
	Rapid Spanning-Tree Protocol

	Multi-instance Spanning-Tree Protocol
	BPDU Filter/Guard
	Root Guard
	Loop Guard
G.8032 ERPS	Single Ring
	Sub Ring
Loopback Detect	Loopback-detection
Layer2 Multicast	IGMPv1/v2/v3 Snooping
	Fast leave
	Static IGMP snooping group
	MVR ( Multicast VLAN Registration )
ARP	Static and dynamic ARP entries
	Aging of ARP entries
	Gratuitous ARP
	basic ARP-Proxy
	local ARP-Proxy
IPv4 Unicast Routing	IPv4 Static Routes
	uRPF check
	RIPv1/v2
	OSPFv2
	IS-IS
	BGP
	ICMP redirect
	ICMP unreachable
	ECMP
IPv4 Multicast Routing	IGMPv1/v2/v3
	IGMP-Proxy
	IGMP SSM Mapping
	PIM-SM
	PIM-SSM
	PIM-DM
IPv6 Basic Protocol	ICMPv6
	NDP
	PMTU

IPv6 Unicast Routing	IPv6 Static Routes
	RIPng
	BGP4+
	OSPFv3
	IS-IS
IPv6 Multicast Routing	MLD v1/v2
	MLD v1/v2 Snooping
BFD	BFD for OSPFv2
VRRP	VRRP
	Track for VRRP
Smart Link	FlexLink
	Monitorlink
EFM	Auto detection
	Network fault detetion
	Network fault handle
	Remote loopback
CFM	Hardware CCM detect
	MAC Ping
	MAC Trace
Y.1731	Latency and jitter measure
QoS	Traffic classification based on COS/DSCP (simple classification)
	Traffic classification based on ACL ( complex classification)
	Traffic classification based on inner header of the tunnel packets
	Queue scheduling
	Remark the priority fields(COS/DSCP) of the packet based on ACL
	Flow redirection
	Flow mirror
	Traffic policing based on direction(in/out) of Port
	Traffic policing based on direction(in/out) of VLAN
	Traffic policing based on direction(in/out) of flow
	Traffic policing based on direction(in/out) of aggregated flow
	Queue based traffic shaping

	Port based traffic shaping
	SP ( Strict Priority ) scheduling
	WRR ( Weighted Round Robin ) scheduling
	SP + WRR mixed scheduling
	Packet counts and bytes statistics based on traffic classification
	Packet counts and bytes statistics based on the color after traffic policing
	Forwarded and discarded packet counts and bytes statistics
System Security	SSHv1/v2
	RADIUS
	TACACS+
	Authentication
	Accounting
	Port based dot1x
	MAC based dot1x
	MAC/IP ACL
	Basic Mode ACL
	Port/VLAN/L4-Port ACL
	Time Range
	ARP Inspection
	IP Source Guard
	Limitation on MAC address learning on interface
	Limitation on MAC address learning on VLAN
	Rate limit
	CPU Traffic Limit
Prevent DDOS attack (ICMP Flood/Smurf/Fraggle/LAND/SYN Flood)	
CLI/WEB/SNMP/Telnet/SSH filtering	
Network Management	DHCP Server
	DHCP Relay
	DHCP Snooping
	DHCP Option60
	DHCP Option82
	RMON

	RFC3176 sFlow
	SNTP ( Simple Network Time Protocol )
	LLDP
Terminal Services	Configurations through CLI (Command Line Interface)
	Vty Terminal service
	Console Terminal service
Configuration Management	Inband management interface and configuration
	Outband management interface and configuration
	Privileged user priority and privileged commands
	Network management based on SNMPv1/v2c/v3
	Public and private MIB
	Public and private Trap
	Configuration and management based on WEB
	Restore factory default configuration
File System	File system
	Upload and download files through FTP or TFTP
	Upload and download files through Xmodem
Debugging And Maintenance	Per-module Debug features
	ICMP Debug
	CPU usage display and alarm
	Memory usage display and alarm
	Device temperature, PSU, FAN, status display and alarm
	User operation logs
	Management of logs, alarms, and debugging information
	VCT ( Virtual Cable Test )
	Detailed Diagnostic-information collection
	Manual reboot
	Schedule Reboot
	Reboot Information logging
	Ping
	IPv6 Ping
	Traceroute
Port mirror	



	Flow mirror
	Remote mirror
	Multi-destination mirror ( m:n )
	To CPU/From CPU packets statistics
	Port loopback
	Hardware loopback (internal/external)
	Time configuration
	Timezone
Upgrade	Upgrade with the local image file
	Upgrade with the remote TFTP server
	Online upgrade Uboot



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