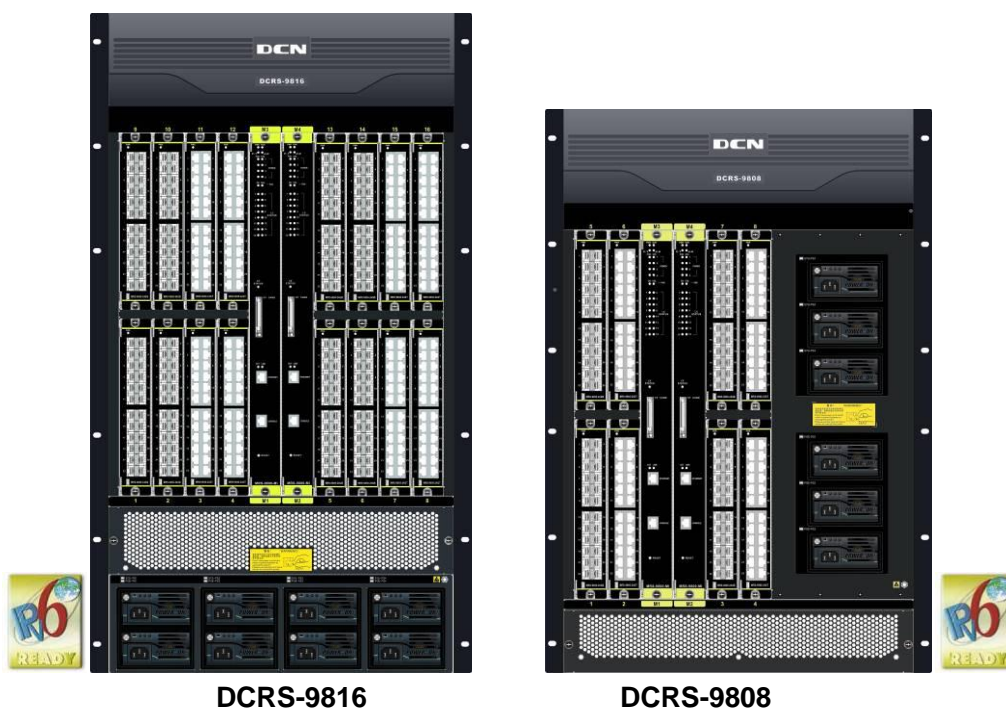


# DCRS-9800 Series

## Dual Stack Backbone Routing Switch



### ■ Product Overview

Digital China Networks DCRS-9800 Series is high performance wire speed forwarding 100G platform chassis switch, which consists of two models.

- DCRS-9808 is 10 slots Chassis Switch. It can work with redundant management modules and 8 business modules.
- DCRS-9816 has 18slots. It has 2 management slots and 16 business modules.





With redundant power supply, fans and management modules, the Digital China DCRS-9800 Series ensures continuous operation and fully redundant system. Moreover, all parts are hot swappable. They can be added or exchanged without interrupting the whole system.

The DCRS-9800 series is ideal for the backbone layer of campuses, enterprise networks and the aggregation layer of IP metropolitan networks.

### ■ Target Market

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

networks:

	 <b>MAN</b>	 <b>Campus</b>	 <b>LAN</b>	 <b>Dual Stack</b>
<b>Core</b>	Y	Y	Y	Y
<b>Aggregation</b>	Y	Y	N	N
<b>Access</b>	Y	N	N	N

## ■ Key Features and Benefits

### ➤ Performance and Scalability

- DCRS-9808 supports up to max 192 \*10G ports or 192 Gigabit ports.
- DCRS-9816 supports up to max 384\*10G ports or 384 Gigabit ports, providing flexibility and high port density.
- 10G modules support max 24 ports for downlink to distribution layer switches or access switches directly, aggregating them to the core layer, and preventing port bottlenecks in Gigabit switches. Furthermore, the optional 10Gigabit Ethernet XFP/SFP+ transceivers can be chosen for different distance fiber uplinks.
- Backup Master ensures the availability of a master controller for network control at any time.
- Firmware & configuration are automatically upgraded from master to slave units for management simplicity.
- Intensive protocol support is included for MPLS, L2/L3 MPLS-VPN, MPLS-TE/FRR supported by software upgrade to ensuring future investment protection.

### ➤ Continuous Availability

- IEEE 802.1w Rapid Spanning Tree Protocol provides a loop free network and redundant links to the core network with rapid 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 to only the subscribers.

### ➤ L3 Features

- The DCRS-9800 series delivers high-performance hardware based IP routing.
- RIP, OSPF and BGP provide dynamic routing by exchanging routing information with other Layer 3 switches or routers within same domain and different domain.
- DVMRP, PIM-SM/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 graceful restart to protect network stability.

## ➤ Strong Multicast

- The DCRS-9800 support 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.

## ➤ Easy high reliability network

- 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 multi same level 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 fast convergence, simple protocol calculation, little system resources cost, clear networking idea and so on, which can improve the reliability of Ethernet network operation.
- Support 802.3AD and 802.1AH Ethernet OAM to ensure your Ethernet network reliability.

## ➤ Comprehensive QoS

- 8 egress queues per port enable differentiated management of up to 8 traffic types.
- Traffic is prioritized 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.

## ➤ Enhanced Security

- 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, authorization and accounting protect data communication and ensure data privacy.

## ➤ Simple Management

- Industry standard Command Line Interface (CLI) via console port or Telnet can be used for switch management.
- Embedded user friendly web interface helps users quickly and simply configure switches.
- Backup and restore Firmware and configuration files via TFTP.

## ➤ Abundant IPv6 Support

- The DCRS-9800 series switch supports IPv6 routing in hardware for maximum performance. As more network devices growing and the need for larger addressing and higher security become critical, the DCRS-9800 series switch will be a right product to meet the requirement. The DCRS-9800 passed IPv6 form Phase II certificate is

the best proof of the application.

### ➤ Environment protect

- The currently network construct must consider energy sources and help end-customer save power. With many years hardware design experience, The DCRS-9800 series control power source in every detail such as power module, fan module and system power control.

### ■ Specifications

Items	DCRS-9808	DCRS-9816
Slot	2 management slots 8 business slots	2 management slots 16 business slots
Business Ports	10/100/1000BASE-T: MAX 192 1000Base-SX: MAX 192 1000Base-LX: MAX 192 10G: MAX 192	10/100/1000BASE-T: MAX 384 1000Base-SX: MAX 384 1000Base-LX: MAX 384 10G: MAX 384
Console	1	1
<b>Performance</b>		
Backplane Bandwidth	>1.54Tbps	>3.1Tbps
Switching Capacity	768Gbps	1.54Tbps
Forwarding Rate	420Mpps	950Mpps
MAC Table	MAX 32K	MAX 32K
Routing Table	MAX 256K	MAX 256K
VLAN Table	4K	4K
<b>Features</b>		
Forwarding	<ul style="list-style-type: none"> <li>■ Storage and forwarding</li> </ul>	
L2 Features	<ul style="list-style-type: none"> <li>■ IEEE802.3(10Base-T)</li> <li>■ IEEE802.3u(100Base-TX)</li> <li>■ IEEE802.3z ( 1000BASE-X )</li> <li>■ IEEE802.3ab ( 1000Base-T )</li> <li>■ IEEE802.3ae ( 10GBase )</li> <li>■ Loopback interface</li> <li>■ 9k Jumbo Frame</li> <li>■ Port loopback detect</li> <li>■ LLDP and LLDP-MED</li> <li>■ UDLD</li> <li>■ Support LACP 802.3ad, max 128 group trunk with max 8 ports for each trunk,</li> <li>■ Support link aggregation by manual</li> </ul>	

	<ul style="list-style-type: none"> <li>■ IEEE802.1d(STP)</li> <li>■ IEEE802.1W(RSTP)</li> <li>■ IEEE802.1S(MSTP) Max 48 instance</li> <li>■ Root Guard</li> <li>■ Bpdu Guard</li> <li>■ Bpdu forwarding</li> </ul>
	<ul style="list-style-type: none"> <li>■ Support one to one or any to one mirror</li> <li>■ Support mirror cross business boards</li> <li>■ Support RSPAN</li> </ul>
	<ul style="list-style-type: none"> <li>■ IGMP v1/v2/v3, IGMP v1/v2/v3 Snooping, IGMP proxy</li> <li>■ ICMPv6, ND, ND snooping, MLDv1/v2, MLDv1/v2 snooping</li> </ul>
	<ul style="list-style-type: none"> <li>■ Support GVRP</li> <li>■ Port/ MAC/ IP segment/ Portocol/ Voice/ Private/ Vlan support</li> <li>■ Multicast Vlan register/MVR for IPv4 and IPv6</li> </ul>
	<ul style="list-style-type: none"> <li>■ Support port-based 802.1Q, 4K VLAN</li> <li>■ Support QinQ and selective QinQ</li> </ul>
	<ul style="list-style-type: none"> <li>■ DFI/Broadcast/Multicast strome control</li> </ul>
	<ul style="list-style-type: none"> <li>■ MAC binding(Ipv4 /Ipv6), MAC filter, MAC limit,</li> </ul>
	<ul style="list-style-type: none"> <li>■ IP source guard</li> </ul>
	<ul style="list-style-type: none"> <li>■ Port binding(Ipv4 /Ipv6)</li> </ul>
	<ul style="list-style-type: none"> <li>■ Support smart link (or named flexible link)</li> </ul>
<ul style="list-style-type: none"> <li>■ L3 Features</li> </ul>	<ul style="list-style-type: none"> <li>■ IP Protocol ( IP support both of IPv4 and IPv6 )</li> <li>■ Default Routing, Static Routing, Black hole route, VLSM and CIDR,</li> <li>■ RIPv1/V2, OSPFv2, BGP4, support MD5 authentication LPM Routing</li> <li>■ OSPFv3, BGP4+ support</li> <li>■ Policy based Routing(PBR) for IPv4 and IPv6</li> <li>■ Support 4 byte BGP AS number</li> <li>■ Support GR for OSPF and BGP</li> <li>■ VRRP, VRRP v3</li> <li>■ DVMRP, PIM-DM, PIM-SM, PIM-SSM</li> <li>■ Support MSDP(Multicast Source Discovery Protocol)</li> <li>■ Static Multicast route</li> <li>■ Multicast edge configure</li> <li>■ Any cast RP for Ipv4 and Ipv6</li> <li>■ PIM-SM/DM/SSM for IPv6, 6 to 4 Tunnels, configured Tunnels, ISATAP</li> <li>■ Multicast receive control</li> <li>■ Illegal multicast source detect</li> <li>■ URPF for IPv4 and IPv6</li> <li>■ Support BFD</li> </ul>

	<ul style="list-style-type: none"> <li>■ Support ECMP (Equal Cost Multi-Path) with maxim 8 groups</li> </ul>
	<ul style="list-style-type: none"> <li>■ ARP guard, Local ARP proxy, Proxy ARP, ARP binding, Gratuitous ARP, ARP limit</li> </ul>
<b>Tunnel technical</b>	<ul style="list-style-type: none"> <li>■ Support manual configure IPv4/IPv6 tunnel</li> <li>■ Support 6to4 tunnel</li> <li>■ Support ISATAP tunnel</li> <li>■ Support GRE tunnel</li> </ul>
<b>MPLS</b>	<ul style="list-style-type: none"> <li>■ Support 255 VRF/VFI</li> <li>■ Support LDP</li> <li>■ L3 MPLS VPN</li> <li>■ L2 VLL/VPLS</li> <li>■ MPLS/VPLS proxy</li> <li>■ MPLS-TE/FRR*</li> <li>■ Support cross domain MPLS VPN</li> <li>■ Support MPLS QOS</li> </ul> <p>*supported by software upgrade in future</p>
<b>QoS</b>	<ul style="list-style-type: none"> <li>■ 8 hardware queues per port</li> <li>■ Support traffic classification based on IEEE 802.1p, ToS, port and DiffServ</li> <li>■ Support SP, WRR.SWRR</li> <li>■ Support Traffic Shaping</li> <li>■ Support rate limit for import and export</li> <li>■ Support PRI Mark/Remark</li> <li>■ Support WRED</li> <li>■ Support 2 buckets with dual rate and triply color mark</li> </ul>
<b>ACL</b>	<ul style="list-style-type: none"> <li>■ Support standard and expanded ACL</li> <li>■ Support IP ACL and MAC ACL,</li> <li>■ Support ACL based on source/definition IP, MAC, L3 protocol, TCP/UDP port number, IP PRI(DSCP, ToS, Precedence), Time</li> <li>■ Support ingress and egress ACL</li> </ul>
<b>ACL-X</b>	<ul style="list-style-type: none"> <li>■ Support time-based security auto-negotiation</li> <li>■ ACL rules can be configured to port, VLAN, VLAN routing interfaces</li> <li>■ Can be used for QoS classification</li> </ul>
<b>Anti-attack and Security</b>	<ul style="list-style-type: none"> <li>■ S-ARP: ARP inspection, defense ARP-DOS attack and address clone</li> <li>■ Anti-Sweep: prevent ping Sweep</li> <li>■ S-ICMP: resist PING-DOS attack, ICMP unreachable attack</li> <li>■ S-Buffer: prevent DDOS attack</li> <li>■ Switch engine CPU protection</li> <li>■ Key message priority: secure processing of key legal messages</li> <li>■ Port credit: inspect illegal DHCP Server, Radius Server. Connection via credit port only</li> </ul>

	<ul style="list-style-type: none"> <li>■ Advanced LPM: filter “Bluster”, “zero day” and “SQL slammer worm”</li> <li>■ Support URPF, avoid IP address clone</li> <li>■ All the above technologies efficiently prevent various DOS attack (e.g. ARP, Synflood, Smurf, ICMP attack), support ARP monitoring, defense Worm, Bluster, check sweep and raise alarm</li> </ul>
<b>DHCP</b>	<ul style="list-style-type: none"> <li>■ Support DHCP Client, Relay, Snooping, Option 82</li> <li>■ DHCP Server for IPv4 and IPv6</li> <li>■ DHCP v6 and DHCP snooping V6</li> </ul>
<b>DNS</b>	<ul style="list-style-type: none"> <li>■ DNS Client</li> <li>■ DNS proxy</li> </ul>
<b>Ring Protocol</b>	<ul style="list-style-type: none"> <li>■ MRPP (Multi-Ring Protect Protocol)</li> </ul>
<b>Access security</b>	<ul style="list-style-type: none"> <li>■ 802.1X <ul style="list-style-type: none"> <li>■ Port, MAC, username based</li> <li>■ Support account based on time length and traffic</li> <li>■ Support guest vlan and auto vlan</li> <li>■ Work with private client can manage P2P traffic</li> </ul> </li> <li>■ MAC Based AAA(Client free access)</li> <li>■ PPPOE/PPPOE+ forwarding</li> </ul>
<b>AAA</b>	<ul style="list-style-type: none"> <li>■ Support RADIUS AAA for IPV4 and IPv6</li> <li>■ TACACS+ AAA</li> </ul>
<b>Configuration and Management</b>	<ul style="list-style-type: none"> <li>■ Support CLI, Telnet, WEB, SSH and SSL</li> <li>■ Support SNMPv1/v2c/v3</li> <li>■ Support MIB</li> <li>■ Support RMON 1, 2, 3, 9</li> </ul>
<b>Power Saving Technology</b>	<ul style="list-style-type: none"> <li>■ Support reduce power consumption, improve cooling and reliability</li> <li>■ Flexible fan and port management to save power consumption</li> </ul>
<b>SysLog</b>	<ul style="list-style-type: none"> <li>■ Support save syslog and trap to local device or server</li> <li>■ Support max 8 servers for syslog or trap receive</li> </ul>
<b>NMS</b>	<ul style="list-style-type: none"> <li>■ Strict access control by ACL and QOS</li> <li>■ Access the switch through AAA or Local Authentication</li> <li>■ Support SNTP and NTP</li> <li>■ Setup time zone and Daylight Saving time</li> </ul>
<b>Supervision and Trouble Shooting</b>	<ul style="list-style-type: none"> <li>■ Supervise abnormality of task, memory, CPU, stack, switch chip, temperature and raise alarm</li> <li>■ Support Sflow</li> <li>■ Support IPFIX (IP Flow Information Export)</li> <li>■ Ping and trace route command</li> </ul>
<b>Configuration Management</b>	<ul style="list-style-type: none"> <li>■ Configuration file storage</li> <li>■ Command operation log</li> <li>■ Support dual images and files startup</li> <li>■ Support FTP/TFTP server or client upgrade</li> <li>■ Support X-modem protocol transfer the file</li> </ul>

OAM	<ul style="list-style-type: none"> <li>■ Support 802.3ah</li> <li>■ Support 802.1ag</li> </ul>	
<b>Physical</b>		
<b>Dimension(W x D x H)</b>	482.6x450x708.4 mm(16U)	482.6x450x841.7 mm(19U)
<b>Relative Humidity</b>	10%~90%, non-condensing	
<b>Storage Temperature</b>	-40℃~70℃	
<b>Operating Temperature</b>	0℃~40℃	
<b>Power</b>	AC: Input 200~240V, 50~60 Hz;	AC: Input 90~260V, 50~60 Hz:
<b>Power Consumption</b>	≤900W	≤1600W
<b>MTBF</b>	>250,000 hours	>250,000 hours
<b>MEF Comply</b>	Comply MEF 9,14	Comply MEF 9,14
<b>MEF Comply</b>	Comply MEF 9,14	Comply MEF 9,14

## ■ Warranty

Limited lifetime warranty

## ■ Order Information

Product	Description
DCRS-9816	<p><b>18 slot backbone switch with 2 management cards.</b></p> <p>The switch can support max 16 business cards.</p> <p>The switch can support redundant power supply to provide high availability networks.</p>
DCRS-9808	<p><b>10 slot backbone switch with 2 management cards.</b></p> <p>The switch can support max 8 business cards.</p> <p>The switch can support redundant power supply to provide high availability networks.</p>
MRS-9800-AC	220V AC power supply with 600W
MRS-9800-MI	DCRS-9800 management card, must configure at least 1. Select 2 cards construct the redundant environment.
MRS-9800-24GT	DCRS-9800 business card, 24 ports 10/100/1000BaseT GE ports. Support dual stack and mpls by hardware
MRS-9800-24GB	DCRS-9800 business card, 24 ports 1000Base-X (SFP) GE ports. Support dual stack and mpls by hardware
MRS-9800-4XFP	DCRS-9800 business card, 4 ports 10GE (XFP) ports. Support dual stack and mpls



	by hardware
MRS-9800-24SFP+	DCRS-9800 business card, 24 ports 10GE (SFP+) ports. Support dual stack and mpls by hardware

■ **Connect us**

For more detail information about DCN product, contact:

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