

S3900 SERIES



Product Overview

DR3900 Series is a next-generation of aggregation 10GE switch introduced by DEV RAY. It is targeted at the IP MAN (metropolitan area network), government and enterprise networks, Internet café and diskless working environment. It is developed on the basis of high performance hardware with DEV RAY own independent intellectual property rights. It supports functions such as powerful ACL, flexible QinQ, 1:1 or N:1 VLAN switching, Ethernet OAM, carrier-level QoS and industry-level 10GE Ether-ring, ensuring this switch series meets application requirements in all kinds of complicated sites. It also supports layer-3 routing protocol.

DEV RAY DR3900 Series has 5 models: DR3900-24T6X, DR3900-24S8T6X, DR3900-48T6X, DR3900-48M6X and DR3900-48S6X. It supports up to 48 gigabit ports and 6 10GE ports.



Supports Maximum 48
Gigabit Ports and 6 10GE
SFP+ Uplink Ports



Advanced Hardware
Architecture and
Industry-leading Port
Density



Varied Service
Characteristics
Versatile IPv6
Solution Complete
Security
Mechanism



Carrier-Level
High Reliability
Layer-3 Routing
Functions

Innovative Virtual Cluster Switching Technique

DVSS (DevRay Virtual Switch System):

DVSS makes full use of each link in the physical devices, which avoids STP blocking the link and protects the original link to the maximum extent.

Improved Performance:

virtualize multiple physical devices into one. The performance, reliability and management of the virtual system are superior to the physical ones.

High Reliability:

Based on the advanced distribution mechanism and efficient cross-physical link aggregation link function, the logic control plane, service control plane and service data plane are separated. Thus, the device can support continuous layer-3 routing forwarding, avoiding service interruption as a result of a single point of failure

Easy Management:

DVSS realizes single IP management, greatly improving the networking efficiency and lowering the operating cost.

Product Characteristics

Carrier-Level QoS Policies

Supports priority retagging and complicated flow classification based on VLAN, MAC, source address, destination address, IP or priority to better streamline carrier's services. Supports flexible bandwidth control policies and supports port-/flow-based flow limit, and ensuring the line speed forwarding of each port to make sure the high quality of video, audio and data services. Supports 8 priority queues by each port. Supports multiple queue schedule algorithms such as SP, WRR, and SP+WRR.

Varied Service Characteristics

Supports layer-2 and layer-3 multicast routing protocol, which enable the device can access to IPTV, HD video surveillance and HD video conference. Supports layer-3 routing protocol and super-large routing table capacity, which enables the device is available in large campus networks, enterprise networks and industry networks

Versatile IPv6 Solution

Supports the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, DHCPv6, etc. Supports Ping, Traceroute, Telnet, SSH, ACL. Supports MLD, MLD Snooping, IPv6 static routing, RIPng, OSPFv3 and BGP4+, etc. Supports IPv6 tunnel: manual tunnel, automatic tunnel, GRE tunnel, 6to4, ISATAP Supports IPv4 transits to IPv6: IPv6 manual tunnel, automatic tunnel, 6 to 4 tunnel, ISATAP tunnel.

Industrial Ethernet Ring with Zero Delay and Zero Packet Loss

Supports industry-level EAPS and ERPS, and their protection recovery time is less than 50ms. Their high reliability is represented by the null packet loss, which has been proved by many years of application in the Grid, rail transportation and defense systems.

Complete Security Mechanism

Equipment-Level Security: The advanced hardware infrastructure design realizes the level-based packet schedule and packet protection, prevents DoS-/TCP-related SYN Flood, UDP Flood, Broadcast Storm or large traffic attacks, and supports level-based command line protection, endowing different levels of users with different management permissions. **Security Authentication Mechanism:** IEEE 802.1x, Radius and DR Tacacs+Enhanced **Service Security Mechanism:** supports the plaintext or MD5 authentication of relevant routing protocol, URPF, deep inspection of hardware packet, control packet and data packet and filtering technology.

Innovative Energy-Saving Design

Intelligent power management: The power system of DR3900 series supports real-time monitoring the device and the slow-start. It is also power-saving. **Intelligent fan management system:** The fan system of DR3900 Series supports automatic speed regulation, which efficiently slow the fan speed and mitigate the noise. Complies with the international standard IEEE 802.3a

Flexible and Convenient Management and Maintenance

Supports management modes such as the console port, Telnet, SSH, etc. Supports the WEB management mode, which is easy and efficient so that it makes installation and debugging convenient. Supports TFTP-patterned file upload/download management.

Supports ISSU (In-Service Software Upgrade). Supports SNMP and DevRay NMS smart network management platform to realize automatic equipment discovery, network topology management, equipment configuration management, performance data statistics and analysis and trouble management.

Model Lists

DR3900-24T6X



- 24-Port Gigabit RJ45
- 4-Port 10G/GE SFP+

DR3900-24S8T6X



- 24-Port Gigabit SFP
- 8-Port Gigabit RJ45
- 6-Port 10G/GE SFP+

DR3900-48T6X



- 48-Port Gigabit RJ45
- 4-Port 10G/GE SFP+

DR3900-48T6X



- 48-Port Gigabit RJ45
- 6-Port 10G/GE SFP+

DR3900-48M6X



- 24-Port Gigabit SFP
- 24-Port Gigabit RJ45
- 6-Port 10G/GE SFP+

POL

GP1702-4GM
xPON MDU

GP1702-4GM
xPON MDU



OS-1X16SCPC-U
Chassis Splitters



GP3600-08
High-density Standalone
GPON OLT

- 10GE Fiber
- GE Fiber
- GE Copper

Internet



DR3900-24S8T6X
Enterprise-grade
core switch



Server Farms

SOHO



DR2528-C

L3-lite Ethernet switch

Public Wifi Zone

WiFi 6 Access Point

WAP2100-T618

WAP2100-1630-Q



DR2528-P

L3-Lite managed Ethernet PoE switch

P2P

P2P CPE



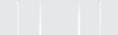
DR2900-24S8C4X

L3-Lite optical Ethernet switch

FTTH

GP1704-2F-E
xPON HGU

GP1704-4GV-22A
xPON HGU



OS-1X16SCPC-U
Chassis Splitters



GP3600-16
High-density Standalone
GPON OLT

Product Specifications

| Item | DR3900-24T6X | DR3900-24S8T6X | DR3900-48T6X | DR3900-48M6X | DR3900-48S6X |
|--|---------------|----------------|---------------|---------------|---------------|
| Gigabit Interface RJ45 | 24 | 8 | 48 | 24 | / |
| SFP | / | 24 | / | 24 | 48 |
| 10G/GE Interface | 6 | 6 | 6 | 6 | 6 |
| Console (RJ45) | 1 | 1 | 1 | 1 | 1 |
| Backplane (Gbps) | 216 | 216 | 216 | 216 | 216 |
| Forwarding rate (Mpps) | 126 | 138 | 162 | 162 | 162 |
| Physical Specifications | | | | | |
| (WxDxH)(mm) | | 440x350x44 | 440x350x44 | 440x350x44 | 440x350x44 |
| Package Dimensions | 576x448x94 | 576x448x94 | 576x448x94 | 576x448x94 | 576x448x94 |
| Power | | | | | |
| Power supply AC: 100V-240V (hot-swap) 75W | | 75W | 75W | 75W | 150W |
| Total output BTU (1000BTU/H=293W) 255.97 | | 255.97 | 255.97 | 255.97 | 511.94 |
| Noise@25°C (dBA) 45 | | 45 | 45 | 45 | 45 |
| MTBF(H) | >200,000 | >200,000 | >200,000 | >200,000 | >200,000 |
| Forwarding mode | Store-forward | Store-forward | Store-forward | Store-forward | Store-forward |
| Flash (MB) | 16 | 16 | 16 | 16 | 16 |
| DRAM (MB) | 512 | 512 | 512 | 512 | 512 |
| MAC | 32K | 32K | 32K | 32K | 32K |
| Buffer size(MB) | 2 | 2 | 2 | 2 | 2 |
| Jumbo frame | 9K | 9K | 9K | 9K | 9K |
| Routing table | IPv4 | 12K | 12K | 12K | 12K |
| | IPv6 | 6K | 6K | 6K | 6K |
| ARP table | IPv4 | 12K | 12K | 12K | 12K |
| | IPv6 | 2K | 2K | 2K | 2K |
| Total SVI | 1K | 1K | 1K | 1K | 1K |

Features

| | |
|----------------------|--|
| VLAN | • 4K Active VLAN, QinQ & Selective QinQ, GVRP, Private VLAN, Voice- VLAN |
| Spanning Tree | • 802.1D (STP), • 802.1W (RSTP) and 802.1S (MSTP) BPDU guard, • root guard and loopback guard |
| Multicast | PIM-SM, PIM-DM, IGMP v1/v2/v3, IGMP Snooping, IGMP Fast Leave, MVR, IGMP filter |
| IPv4 | Static routing, RIP v1/v2, OSPF, BGP, PBR, ECMP BFD for OSPF, BGP |
| IPv6 | ICMPv6, DHCPv6, ACLv6 and IPv6 Telnet IPv6 neighbor discovery, Path MTU discovery MLD V1/V2, MLD snooping IPv6 Static Routing, RIPng, OSPFv3, BGP4+ Manual tunnel, ISATAP tunnel, 6 to 4 tunnel |
| MPLS | LDP protocol, Multi-VRF, MPLS L2 VPN |
| QoS | CAR, HQoS, MAC/IP/TCP/UDP/ VLAN/COS/DSCP/TOS based QoS, 802.1P/DSCP priority re-labeling, SP, WRR, and "SP+WRR", Tail-Drop, WRED, flow monitoring and traffic shaping |
| Security | Port isolation, Port security, and "IP+MAC+port" binding, MAC sticky DHCP Snooping and option 82, DAI & IP source guard, PPPoE+, IEEE 802.1x, Radius and DRTacacs+ L2/L3/L4 ACL flow identification and filtrationAnti-attack from DDoS, TCP's SYN Flood, UDP Flood, etc. Broadcast/multicast /unknown unicast storm-control MD5, SHA- 256, RSA-1024, AES256, etc. |
| Reliability | Static/LACP link aggregation, Interface backup DVSS virtual-stacking EAPS and ERPS URPF, LLDP ISSU VRRP 1+1 power backup |
| Management | Console, Telnet, SSH v1/2, HTTP, HTTPS,SNMP v1/v2/v3, RMON TFTP, FTP, SFTP NTP, SPAN, RSPAN sFlow |
| Accessories | • Power cord, rackmount kits, console cable |
| Environment | Operating temperature/humidity: 0°C -50°C ,10%-90% non-condensing Storage temperature/humidity: -20°C -70°C , 5%-95% non-condensing |

Certificates

- CE Marking
- EN 300 386 V2.2.1:2022 Telecommunication network equipment - Harmonized Standard for Electromagnetic Compatibility (EMC) requirements
- EN 50121-4:2016+A1:2019 Railway applications. Electromagnetic compatibility Emission and immunity of the signaling and telecommunications apparatus
- EN 50155:2021, Railway applications. Rolling stock. Electronic equipment
- EN 55011:2016+A2:2021 Industrial, scientific and medical equipment. Radiofrequency disturbance characteristics. Limits and methods of measurement
- EN 55022:2010 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
- EN 60950-1:2005 Information technology equipment – Safety – Part 1: General requirements
- EN IEC 61000-3-2:2019, EN 61000-3-3:2013, EN 61000-4-2:2009, EN 61000-4-3:2006+A2:2010, EN 61000-4-4:2012, EN 61000-4-5:2014+A1:2017, EN 61000-4-6:2014, EN 61000-4-8:2010, EN 61000-4-11:2004+A1:2017, EN 61000-6-4:2007 Electromagnetic compatibility (EMC) Testing and measurement techniques
- IEC 60068-2-27:2008 Environmental testing-part2-27:test- test ea. and guidance: shock
- IEC 60068-2-31:2008 Environmental testing-part2-31: Test- test Ec: Rough handling shocks, primarily for equipment-type specimens
- IEC 60068-2-64:2008 Environmental testing-part2-64:2008 Test- test Fh: Vibration, broadband random and guidance
- IEC 60215:2016 Safety requirements for radio transmitting equipment-General requirements and terminology
- IEC 61967-1:2018 Integrated circuits- Measurement of electromagnetic emissions-Part 1: General conditions and definitions
- IEC 62151: 2000 Safety of equipment electrically connected to a telecommunication network
- Directive 2002/95/EC (RoHS 1),
- CFR Part 15, Su voltage 2014/35/EU Directive
- UL (UNDERWRITERS LABORATORIES)

Ordering Information

| Item | Description |
|-----------------------------|---|
| DR3900 Series switch | |
| DR3900-24T6X | 24-Port Gigabit RJ45 + 6-Port 10G SFP+ L3 Stackable Managed Switch (2 power slots, single hot-swap AC-220V power supply, with cooling fan, 1U, 19-inch rack-mounted installation) |
| DR3900-24S8T6X | 24-Port Gigabit SFP + 8-Port Gigabit RJ45 + 6-Port 10G SFP+ L3 Stackable Managed Switch (2 power slots, single hot-swap AC-220V power supply, with cooling fan, 1U, 19-inch rack-mounted installation) |
| DR3900-48T6X | 48-Port Gigabit RJ45 + 6-Port 10G SFP+ L3 Stackable Managed Switch (2 power slots, single hot-swap AC-220V power supply, with cooling fan, 1U, 19-inch rack-mounted installation) |
| DR3900-48M6X | 24-Port Gigabit RJ45 + 24-Port Gigabit SFP + 6-Port 10G SFP+ L3 Stackable Managed Switch (2 power slots, single hot-swap AC-220V power supply, with cooling fan, 1U, 19-inch rack-mounted installation) |
| DR3900-48S6X | 48-Port Gigabit SFP + 6-Port 10G SFP+ L3 Stackable Managed Switch (2 power slots, single AC-220V hot-swap power supply, with cooling fan, 1U, standard 19 inch rack-mounted installation) |
| Optical modules | |
| 10GE optical modules | |
| SFP+TX | 10GE SFP+-to-RJ45 module |
| SFP+SX | 10GESFP+ multi-mode (300m, 850nm, LC) |
| SFP+LX-10 | 10GE SFP+ single-mode (10Km, 1310nm, LC, DDM) |
| SFP+LX-20 | 10GE SFP+ single-mode (20Km, 1310nm, LC, DDM) |
| SFP+LX-40 | 10GE SFP+ single-mode (40Km, 1310nm, LC, DDM) |
| SFP+LX-80 | 10GESFP+ single-mode (80Km, 1550nm, LC, DDM) |
| SFP+LX-SM-1270-10 | 10GE SFP+ single-mode, single-fiber (10Km, TX1270/RX1330, LC, DDM) |
| SFP+LX-SM-1330-10 | 10GE SFP+ single-mode, single-fiber (10Km, TX1330/RX1270, LC, DDM) |
| SFP+LX-SM-1270-20 | 10GE SFP+ single-mode, single-fiber (20Km, TX1270/RX1330, LC, DDM) |
| SFP+LX-SM-1330-20 | 10GE SFP+ single-mode, single-fiber (20Km, TX1330/RX1270, LC, DDM) |
| SFP+LX-SM-1270-40 | 10GE SFP+ single-mode, single-fiber (40Km, TX1270/RX1330, LC, DDM) |
| SFP+LX-SM-1330-40 | 10GE SFP+ single-mode, single-fiber (40Km, TX1330/RX1270, LC, DDM) |
| GE Optical Modules | |
| GSFP-TX-B | 10GE SFP+-to-RJ45 module |
| GSFP-SX-D | GE SFP multi-mode (500m, 850nm, LC, DDM) |
| GSFP-LX-10-D | GE SFP single-mode (10Km, 1310nm, LC, DDM) |
| GSFP-LX-20-D | GE SFP single-mode (40Km, 1310nm, LC, DDM) |
| GSFP-LX-40-D | GE SFP single-mode (40Km, 1310nm, LC, DDM) |
| GSFP-ZX-80-D | GE SFP single-mode (80Km, 1550nm, LC, DDM) |
| GSFP-ZX-120-D | GE SFP single-mode (120Km, 1550nm, LC, DDM) |
| GSFP-LX-SM1310-10-BIDI | GE SFP single-mode, single fiber (10Km, TX1310/RX1550, LC, DDM) |
| GSFP-LX-SM1550-10-BIDI | single-mode, single fiber (10Km, TX1550/RX1310, LC, DDM) |
| GSFP-LX-SM1310-20-BIDI | GE SFP single-mode, single fiber (20Km, TX1310/RX1550, LC, DDM) |
| GSFP-LX-SM1550-20-BIDI | single-mode, single fiber (20Km, TX1550/RX1310, LC, DDM) |