DH-S6500-48XF2QF

· Rich layer 3 features
· Reliable hardware design with modular dual power supply
· Excellent manageability
· High availability
· High-density 10 Gigabit port

System Overview

DH-S6500-48XF2QF is a high-density 10 Gigabit switch for the next-generation core/aggregation products of Dahua. It provides large switching capacity, high-density 10GE/40GE wire-speed forwarding ports; supports pluggable dual power supply, fan and rich 3 layer features.

Functions

Virtualization Technologies - IRF2

DH-S6500-48XF2QF is pre-built with Intelligent Resilient Framework 2 (IRF2). IRF2 provides the following benefits:
High scalability: With IRF2, plug-n-play device aggregation can be achieved by adding one or more switches into the IRF2 stack and enabling IRF2 to stack on the new device. New devices can be managed with a single IP, and upgraded at the same time to reduce network expansion cost.
Load balancing: IRF2 supports cross-device link aggregation, upstream and downstream can be connected to more than one physical link, which creates another layer of network redundancy and boosts the network resource utilization.
Availability: Through standard 10 Gigabit Ethernet (10GE) ports, IRF2 allocates bandwidth for business and application access and reasonably splits local traffic and upstream traffic. IRF2 rules not only can be obeyed within and across the rack, but also across the LAN.

High Availability

The switch supports 1+1 power module redundancy. When a power or temperature event occurs, the switch generates alarms.
In addition to hardware redundancy, the switch provides a variety of node and link redundancy and protection mechanisms, including:
Ethernet link aggregation, including LACP.
Spanning tree protocols, including STP, RSTP and MSTP.
Smart Link, which protects faster link switchover for dual uplink network.
Rapid Ring Protection Protocol (RRPP).

MACsec Hardware Encryption

MACsec is a link layer security protocol that is very suitable for Ethernet Hop by Hop. It has the following three functions:
1) Message encryption: Through the encryption algorithm and key, the plaintext is turned into ciphertext, which is difficult to decrypt even if it is eavesdropped on.
2) Anti-replay attack: Prevent hackers from intercepting the message received by the destination host and sending it to the destination host again to achieve the purpose of deceiving the destination host, such as identity authentication.
3) Anti-tampering: Prevent hackers from tampering with the original message content.
There are two MACsec modes:
1) Host-oriented mode: Used for the first hop protection when the terminal accessing the network.
2) Device-oriented mode: Protection of interconnection links between devices.
The hardware of DH-S6500-48XF2QF switch supports MACsec security encryption function.

VxLAN

The DH-S6500-48XF2QF switch supports VxLAN (Virtual Extensible LAN). VxLAN encapsulates the data packets sent by the virtual machine in UDP, and uses the IP/MAC of the physical network as the outer-header to be encapsulated on the physical IP network Transmission; after arriving at the destination, the tunnel endpoint will decapsulate and send the data to the target virtual machine. VxLAN solves the problem of long-distance virtual machine migration between geographically dispersed data centers. EVPN mode is supported.

Technical Specification

Hardware Feature

Optical Port	48 x 1/10 Gbps Base-X ports 2 x 40 Gbps Base-X ports
Console Port	1 × RJ45 console port 1 × Micro-USB port
Power Supply	Two powers included
	Supports dual power
	100-240V AC 50-60 Hz (Internal)
Power Consumption	Idling: 39W Full load: 231W (Single Power) Idling: 44W Full load: 234W (Dual Power)
Operating Temperature	0°C to 45°C (32°F to 113°F)
Operating TemperatureOperating Humidity	5%RH–95%RH
Storage Temperature	−40°C to 70°C (−40°F to 158°F)

Performance

Layer	Layer 3
Managed	Yes
Switching Capacity	2.56 Tbps
Packet Forwarding Rate	1080 Mpps
Packet Buffer Memory	80 Mbit
MAC Table Size	128K
VLAN Amount	4094 Entries
ARP Table	64K Entries
IPv4 Routing Table	64K Entries
QoS Queue	8 Entries
Jumbo Frame	10000 Byte
ACL Table	Ingress: 2K Egress: 512

Features

VLAN	Port-based VLAN MAC-based VLAN Protocol-based VLAN IP subnet based VLAN QinQ and flexible QinQ VLAN mapping PVST + RPVST+
VxLAN	Yes
Ring network protocol	STP/RSTP/MSTP/PVST STP Root Guard BPDU Guard G.8032 ERPS
DHCP	DHCP client DHCP snooping DHCP snooping option82 DHCP relay DHCP server

Port Aggregation	10GE/40GE port aggregation Dynamic aggregation Static aggregation
IP routing	Static routing RIP v1/v2 and RIPng OSPF v1/v2/v3 BGP and BGP4+ for IPv6 IS-IS VRRP
IPV6	Neighbor Discovery (ND) PMTU IPv6-Ping, IPv6-Tracert, IPv6-Telnet, and IPv6-TFTP IPv6 portal
Mirroring	Flow mirroring N:4 port mirroring Local port mirroring and remote port mirroring
Multicast	IGMP snooping v1/v2/v3 and MLD snooping v1/v2 PIM snooping MLD proxy Multicast VLAN IGMP v1/v2/v3 and MLD v1/v2 PIM-DM, PIM-SM, and PIM-SSM MSDP and MSDP for IPv6 MBGP and MBGP for IPv6
IRF	IRF2 Distributed device management, distributed link aggregation, and distributed resilient routing Stacking through standard Ethernet interfaces Local device stacking and remote device stacking
Security	Hierarchical user management and password protection AAA authentication support RADIUS authentication HWTACACS SSH2.0 Port isolation 802.1X authentication, centralized MAC authentication Port security IP Source Guard HTTPs Hierarchical user management and password protection 802.1X authentication and centralized MAC address authentication Guest VLAN RADIUS authentication SSH 2.0 Port isolation Port security Portal authentication DHCP snooping Dynamic ARP detection BPDU guard and root guard uRPF IP/Port/MAC binding Plaintext authentication and MD5 authentication for OSPF and RIPv2 packets Public Key Infrastructure (PKI)
ACL/QoS	Layer 2 to layer 4 packet filtering Traffic classification based on source MAC, destination MAC, source IP, destination IP, TCP/UDP port number, and VLAN Time range-based ACL Bi-directional ACLs (inbound and outbound) VLAN-based ACL issuing Rate limit for receiving and transmitting packets (a minimum CIR of 8 Kbps) Packet redirection 802.1p priority and DSCP priority Committed Access Rate (CAR) Eight queues per port (including the CPU port) Flexible queue scheduling algorithms based on both port and queue, including SP, WRR, WFQ, SP+WRR, and WDRR

System Maintenance	Debugging information output Ping, Tracert Telnet remote maintenance NQA DLDP Virtual cable test
Network Management	Command line interface (CLI) configuration Telnet remote configuration configuration via console port SNMP v1/v2/v3 Web network management System log Power, fan, temperature alarm
HA	1+1 redundancy for fan trays 1+1 redundancy for power modules

General

Thunderproof	Common mode: 2kV Differential mode: 1kV
Net Weight	7.2 kg (15.87 lb)
Gross Weight	8.95 kg (19.73 lb)
Product Dimensions	440 mm × 360 mm × 43.6 mm (17.32" × 14.17" × 1.72")
Packaging Dimensions	580 mm × 562 mm × 125 mm (22.83" × 22.12" × 4.92")

Ordering Information

Type	Model	Description
SFP Module	PFT3950	1.25 G 850 nm, 500 m, LC, Multi-mode [optional]
	PFT3960	1.25 G 1310/1550 nm, 20 km, LC, Single-mode [optional]
	PFT3970	1.25 G 1550/1310 nm, 20 km, LC, Single-mode [optional]
	PFTOTSFP-1270R-20-SMF	10 G 1310/1270 nm, 20 km, LC, Single-mode [optional]
	PFTOTSFP-1270T-20-SMF	10 G 1270/1310 nm, 20 km, LC, Single-mode [optional]
	PFTOTSFP-850-MMF	10 G 850 nm, 20 km, LC, Multi-mode [optional]