DH-S8610

- High port density 10G line cards
- Fully compliant with 40GE Ethernet standards
- Support virtualization technologies
- Hardware level encryption technology MACsec
- High-performance IPv4/IPv6 service capabilities
- Comprehensive security control policies
- Support hot swapping for all components
- Advanced CLOS multistage and multi-plane switching architecture, delivering great bandwidth scalability

System Overview

DH-S8610 product is a high-end multi-service routing switch for fusion business networks by Dahua. The product supports a virtualization software system based on IRF2 (Intelligent Resilient Framework 2, the second generation of intelligent elastic architecture) technology. It is fully compatible with 40GE Ethernet standards, and provides uninterrupted forwarding and upgrades, graceful restart, ring network protection and other high-reliability technologies. While improving production efficiency, it ensures the maximum network uptime, thereby reducing the total cost of ownership (TCO).

Functions

Advanced System Architecture

The system architecture incorporates the following advanced designs:
Clos multistage and multi-plane switching architecture: Delivers great bandwidth scalability.
Orthogonal interconnection of switching fabric modules and service modules: Traffic between service modules is sent directly to the switching fabric modules through the orthogonal interconnectors, without cabling on the backplane, which significantly reduces signal loss and improves bandwidth efficiency. This design offers great bandwidth and capacity scalability, allowing the system capacity to be expanded to 256 Tbps.
Compliant with 10GE and 40GE Ethernet standards: Enables the system to satisfy the growing demands of non-blocking campus networks.
Switching fabric module independency and redundancy: Independence between switching fabric modules and control engines maximizes the system availability and ensures bandwidth expansion.
Power module redundancy: Guards the switch against unexpected power module failures and significantly enhances system availability.

Virtualization Technologies - IRF2

IRF2 can virtualize up to four DH-S8610 switches into one logical IRF fabric. IRF2 delivers the following benefits:
High Availability (HA)- Provide data backup and non-stop forwarding on the control plane and data plane. This improves availability, performance, eliminates single-point failures and ensures service continuity.
Distribution- Multi-chassis link aggregation to enable load sharing and backup over multiple uplinks, improving redundancy and link utilization.
Easy Management- A single IP address to manage the whole IRF fabric, which simplifies device and topology management, improving operating efficiency, and lowering network maintenance cost.

Hardware Level Encryption Technology MACsec

DH-S8610 switch supports hardware level encryption technology MACsec (802.1ae), which is an industry-standard security technology that provides secure communication for all traffic on Ethernet links. Compared with traditional application based software encryption technology, MACsec provides point-to-point security on Ethernet links between directly connected nodes and is capable of identifying and preventing most security threats.

Technical Specification

Hardware Feature

Total Number of Slots	13
Number of Line Card Slots	10
Number of MPU Slots	2
Switching fabric module Slots	1
Hot Swapping	Yes
Console Port	1 × RJ45 console port 1 × Micro-USB port
Power Supply	Not included
	Min: 3 Max: 6
	100-240V AC 50-60 Hz (Internal)
Power Consumption	Idling: 30W Full load: 2430W
Operating Temperature	0°C to 45°C (32°F to 113°F)
Operating Humidity	5%RH–95%RH
Storage Temperature	–40°C to 70°C (–40°F to 158°F)
Redundancy	Redundant MPUs, power modules, and fan trays

Performance

Layer	Layer 3
Managed	Yes
Switching Capacity	256 Tbps
Packet Forwarding Rate	8400 Mpps
Jumbo Frame	10000 Byte

Features

Ethernet	IEEE 802.1P(CoS priority) IEEE 802.1Q IEEE 802.1ad (QinQ), selective QinQ and Vlan mapping DLDP LLDP Static MAC configuration Limited MAC learning Port mirroring and traffic mirroring Port aggregation, port isolation, and port mirroring IEEE 802.1D (STP)/802.1w (RSTP)/802.1s (MSTP) IEEE 802.3ad (dynamic link aggregation), static port aggregation, and multi-chassis link aggregation RRPP (Rapid Ring Protection Protocol) Jumbo frame SuperVLAN PVLAN Multicast VLAN+ MCE
Routing	Static routing, RIP, OSPF, IS-IS, and BGP4 IPv4/IPv6 ECMP VRRP IPv4/IPv6 Policy-based routing IPv4/IPv6 Routing policy IPv6 static routing, RIPng, OSPFv3, IS-ISv6, and BGP4+ VRRPv3 Pingv6, Tenetv6, FTPv6, TFTPv6, DNSv6, and ICMPv6
DHCP	DHCP Client DHCP Snooping DHCP Snooping option82 DHCP Relay DHCP Server DHCP auto-config
IP routing	12K IPV4 routing entries Static routing RIPv1/v2 and RIPng OSPFv1/v2/v3 BGP and BGP4+ for IPv6 IS-IS VRRP/VRRPv3
Mirroring	Flow mirroring N:4 port mirroring Local port mirroring and remote port mirroring
Multicast	PIM-DM, PIM-SM, PIM-SSM, MSDP, MBGP, and Any-RP IGMP V1/V2/V3 and IGMP V1/V2/V3 snooping PIM6-DM, PIM6-SM, and PIM6-SSM MLD V1/V2 and MLD V1/V2 snooping Multicast policies and Multicast QoS
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 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	Standard and extended ACLs Ingress and egress ACLs VLAN ACLs Global ACLs Diff-Serv QoS SP, WRR, SP+WRR, CBWFQ Traffic shaping Congestion avoidance Priority marking and remarking 802.1p, TOS, DSCP, and EXP priority mapping
System Management	Loading and upgrading through XModem/FTP/TFTP SNMP v1/v2/v3 sFlow RMON NTP clocks Fault alarm and automatic fault recovery System logs Device status monitoring mechanism, including the CPU engine, backplane, chips and other key components

Network Management	Command line interface (CLI) configuration Telnet remote configuration Configuration via console port SNMP v1/v2/v3 System log Power, fan, temperature alarm
HA	1+1 redundancy for key components such as MPUs 1+1 redundancy for power modules Passive backplane Hot swapping for all components Real-time data backup on active/standby MPUs CPU protection VRRP Hot patching Ethernet OAM (802.1ag and 802.3ah) RRPP/ERPS VCT Smart-Link ISSU

General

Thunderproof	Common mode: 2kV Differential mode: 1kV
Fully loaded weight	64.5 kg (142.20 lb)
Gross Weight	90.5 kg (199.52 lb)
Product Dimensions	620 mm × 440 mm × 660 mm (24.41" × 17.32" × 25.98")
Packaging Dimensions	870 mm × 790 mm × 870 mm (34.25" × 31.10" × 14.57")

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]
	QSFP-40G-CSR4-MM850	40 G 850 nm, 300 m, CSR4, Multi-mode [optional]
Accessories	S8610-MPU	Main processing unit
	S8610-PWR1200	Power module
	S8610-NET	Switching fabric module
	S8610-FAN	Fans
	S86-44GF4XFSE	44 × GF + 4 × 10G SFP + Ports
	S86-48GTSE	48 × GE Ports
	S86-12QFSG	12 × 40G QSFP Ports
	S86-48XFSG	48 × 10G SFP + Ports

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