PRODIGY

PRODIGY LAYER 3 AGGREGATION SWITCH

PD1-S51-8301PoE

Hi-performance 10Gigabit Ethernet Switch

FEATURES

Advanced Hardware Architecture, and Industry-Leading Port Intensity

A 1U box switch bears 24 gigabit PoE ports, 4 10G ports and 2 40G QSFP port , which is considered the highest port density in this industry. It adopts the high performance ASIC switch chip, which can meet the requirements of all kinds of complicated application sites.

Industrial Ethernet Ring with Zero Delay and Zero Packet Loss

This switch series supports industry-level EAPS and their protection shift 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 PoE Power Supply

This switch series supports IEEE 802.3AF/AT standard, built-in large power supply with 24 ports.

This switch series supports hot restart and POE non-stop power supply.

This switch series supports the configuration of TX port priority when the power is inadequate.

This switch series' ports and power supply support up to 2KV thunder-proof function.

Telecom-Level Ethernet Switch

Supporting the telecom-level Ethernet-ring protection protocol with a protection shift time of less than 50ms, STP/RSTP/MSTP, backup of active and standby uplinks, and LACP link aggregation to cater to the requirements of high reliability of carriers.

Providing the perfect Ethernet OAM mechanism to monitor the network running status in real time for rapid trouble locating and detection.

Having powerful ACL functions to access and control L2-L7 data based on physical port, VLAN, MAC, IP and protocol port ID, and providing carriers flexible and various policy control methods.

Supporting In-Service Software Upgrade (ISSU) to ensure the unremitting data forwarding during system upgrade.

Supporting various L2 multicast functions, including IGMP-Snooping, fast-leave and trans-vlan multicast copy.

Support Link Layer Discovery Protocol–Media Endpoint Discovery (LLDP-MED)

Built-in feature that allows you to compare current configurations with previously stored profiles

Carrier-Level QoS Policies

Supporting priority retagging and complicated flow classification based on VLAN, MAC, source address, destination address, IP or priority to better streamline carrier's services.

Providing flexible bandwidth control policies, supporting 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.

Supporting 8 priority queues by each port Supporting multiple queue schedule algorithms such as SP, WRR, or "P plus WRR".

Versatile IPv6 Solutions

Supporting the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, etc.

Supporting Ping, Traceroute, Telnet, SSH, ACL and so like on the basis of IPv6, meeting IPv6 networks' equipment management requirements and service control requirements.

Perfect Security Mechanisms

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.

Perfect security authentication mechanisms: IEEE 802.1x, Radius and Tacacs+.

Storm/multicast/unicast limit to ensure the normal running of equipment in harsh network conditions.

Perfect ring detection mechanism to ensure the long-term stable running of network.

Port isolation within the same VLAN, DHCP Snooping, and IP plus MAC plus Port binding for ensuring user data security.

Support DHCP server and relay.

Monitor traffic: Help to show up header of package in/out.

Flexible and Convenient Management and Maintenance

Supporting management modes such as the console port, Telnet, SSH, etc.

Supporting the WEB management mode, which is easy and efficient so that it makes installation and debugging convenient.

Supporting FTP-patterned file upload/download management. Supporting ISSU (In-Service Software Upgrade) Supporting SNMP and Terrabit Prodigy NMS smart network management platform to realize automatic equipment discovery, network topology management, equipment configuration management, performance data statistics and analysis and trouble management.

Supporting backup (until 56 latest configure file) and auto rollback if configure not be saved.

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TECHNICAL SPECIFICATIONS

Interface

Port: 24 GE PoE TX ports, 4 1GE/10GE SFP ports. 1 console port
2 40GbE QSFP port, 1USB port

Performance

Ram: 2GB **Flash**: 3 GB
Backplane: 312Gbps.
Forwarding: 224 Mpps.
MAC: 32K.
MAC exchange:
Static configuration and dynamic MAC learning. MAC browsing and removal.
Configurable aging time of the MAC address. Limited number of learnable MAC addresses. MAC filtration.
Black-hole MAC list.

VLAN:
Support 4K VLAN. Trunk port permited : > 130
GVRP.
1:1 VLAN mapping and N:1 VLAN mapping. QinQ and flexible QinQ.
PVLAN.
STP:
802.1D (STP), 802.1W (RSTP) and 802.1S (MSTP).
BPDU protection, root protection, and loopback protection.

Multicast:

IGMP v1/v2/v3.
IGMP snooping.
IGMP Fast Leave.
Multicast group strategy and quantity limitation. Protocol Independent Multicast PIM-SM, PIM-SSM, PIM-DM
IPv4:
Static routing, RIP v1/v2, OSPF, BGP. Strategy routing.
Load balance by equivalent routing. BFD for OSPF, VRRP, RPM, Virtual Router.
IEEE 802.3: 10BASE-T, IEEE 802.3u: 100BASE-T, IEEE 802.3ab: 1000BASE-T, IEEE 802.3z:1000BASE-X
IPv6:
ICMPv6, DHCPv6, ACLv6 and IPv6 Telnet. IPv6 neighbor discovery.
Path MTU discovery.
MLD V1/V2.
IGMP snooping.
QoS:
Flow classification based on L2~4 protocols. CAR flow limit.
802.1P/DSCP priority re-labeling.
SP, WRR, Strict priority and "SP+WRR".
Congestion avoidance mechanisms like Tail-Drop and WRED.
Hardware queues per port: 12 (8 unicast, 4 multicast) Ingress policing: 2 rate 3 color
Flow monitoring and flow shaping.
Security:
L2/L3/L4 ACL flow identification and filtration.
DDoS attack prevention, TCP's SYN Flood attack prevention, UDP Flood attack prevention, etc.
Broadcast/multicast/unknown unicast storm control.
Port isolation, Port security, and "IP+MAC+port" binding. DHCP snooping and DHCP option 82. IEEE 802.1x authentication.
Dynamic ARP inspection (DAI).
Radius Tacacs+ authentication.
Level-based command line protection.
Local proxy ARP, Static ARP, Layer 2 – L4 ACL

Reliability:

EAPS and ERPS.
ISSU uninterrupted system upgrade.
Management:
Console, Telnet, SSH, Web, TerOS. SNMP v1/v2/v3.
TFTP,CLI.
RMON.

Power Requirements

Power Consumption: <45W.
Power input: AC: 100V-240V, 50Hz±10%
POE power: 390W
Power Backup: +1

Physical Characteristics

Dimensions (WxHxD) (mm): 440x280x44.

Environmental Limits

Operating temperature and humidity: 0 ~ 60°C, 10%-90% non-condensing.
Storage temperature and humidity: -25~ 75°C, 5%-95% non-condensing.

Warranty

1 year.

OPTIONAL ACCESSORIES

For Optional Fiber Module, please refer to Spectrum Terrabit Transceiver.

ORDERING INFORMATION

Model	Description
PD1-S51-8301PoE	Ethernet PoE switch with 24 gigabit TX PoE ports, 4 10G gigabit and 2 port 40G QSFP optical ports an AC220V power source, 390W PoE power consumption, fan-based heat cooling, 1U, 19-inch rack-mounted installation).