ZYXEL

NSW100 Series

8/24-port GbE L2 Nebula Cloud Managed Switch

The Zyxel Nebula NSW100 Series Cloud Managed Switches provide Layer-2 Gigabit access switching with 8/24-port PoE and non-PoE models. The PoE models support 802.3at PoE Plus standards to provide a 180/375-watt high-power budget. Every Nebula switch is designed to be managed completely from the Nebula Control Center. The cloud-based management interface provides site-wide configuration and monitoring of all ports, which allows multiple switches to be configured at the same time with a single click over the Web.

The Nebula switches bring many benefits of the cloud management systems, such as simplified configuration, easy management, site-wide visibility and real-time control for speedy branch network deployments into networks. Advanced settings such as user friendly ACL, VLAN-based QoS and PoE scheduling significantly improve the efficiency of network management.

Benefits

Zero-touch deployments

The Zyxel Nebula Cloud Managed Switches support plug-and-play installation through remote provision with simple steps. Every Nebula Switch automatically downloads the current network configuration to the device and enables auto-provisioning without the need for on-site network professionals.

- Essential L2 features with user-friendly ACL and VLAN configuration
- Optimized for quality voice and video traffic with high 375 (28P)/180 (10P)-watt power budget PoE technology
- Support Port Mirroring for network traffic monitoring
- Support DHCP Server Guard and IGMP snooping
- RADIUS, static MAC forwarding and 802.1X authentication

nebula

Efficient network provisioning

Rather than traditional management operations that require network administrators to configure each device separately with repetitive command lines, all Nebula Switches connected to the Nebula Control Center can be centrally managed with a single management interface. For better network management efficiency, switch settings made in the Nebula Control Center can automatically propagate to all connected Nebula switches.

Increased network uptime

User misspecifications are commonly seen in setting up ACL, reconfiguring VLAN/IP or other similar operations, and these may cause interruption to cloud connection. The Zyxel Nebula Cloud Managed Switches provide stable network environments by incorporating a mechanism that detects and prevents configuration that could potentially cause network disconnection between the switch and Nebula Control Center.

Better user experience

Quality-of-service (QoS) functionality is essential for applications that require guaranteed quality for stable connections. The Zyxel Nebula PoE switches offer a smarter way for optimizing quality of service, which enables administrators to specify VLAN configuration with different priorities directly. This means that administrators can assign a priority to a specific VLAN through Nebula Control Center, and this priority can be applied to all tagged traffics for a specific VLAN. Traffics of the higher priority VLAN will receive preferential treatment and are serviced before VLANs with lower priorities. The same mechanism applies to voice VLAN configuration as well.

Holistic management

Zyxel Nebula Switches can automatically discover wired and wireless devices that connected to a network, and then draw the network topology to enable network administrators to easily troubleshoot issues remotely without the need for manual mapping and overlay monitoring software.

Comprehensive IPTV Reports*

Nebula provides powerful insight into your IPTV channel management, giving an instant view on the most popular or selected channels in different time intervals. On top of that, it also keeps track of statistics including the viewers' IP addresses, connected ports, channels watched and the periods of time spent on each channel. Furthermore, the built-in Network Analytic provides automated analyses on your network configurations for advices on optimization or troubleshooting of the IPTV network.

*Requires Professional Pack license.

Real-time control of all the devices through a single pane of glass

Monitor switch port usage and bandwidth utilization by different time intervals and view historical status record with the intuitive management interface

Provide utilization, network analysis and client statistics of the multicast groups or channels in an IPTV environment

Model List

NSW100-10

8-port GbE Nebula Cloud Managed Switch

- 8 x GbE RJ-45 ports
- 2 x GbE combo (RJ-45/SFP) ports

NSW100-10P

8-port GbE Nebula Cloud Managed PoE Switch

- 8 x GbE PoE RJ-45 ports
- 2 x GbE combo (RJ-45/SFP) ports

NSW100-28

24-port GbE Nebula Cloud Managed Switch

- 24 x GbE RJ-45 ports
- 4 x GbE combo (RJ-45/SFP) ports

NSW100-28P

24-port GbE Nebula Cloud Managed PoE Switch

- 24 x GbE PoE RJ-45 ports
- 4 x GbE combo (RJ-45/SFP) ports

Ultra Durable Hardware Design

Unlike normal switch hardware design with Electrolytic capacitors (E-cap), the Zyxel Nebula Cloud Managed Switches adopt solid capacitors to get rid of drying out, bursting and leaking problems. Solid capacitors ensure Nebula switches with longer lifetime, high stability and robust operation.

Applications Diagram

Nebula cloud management architecture

Specifications

Model		NSW100-10	NSW100-10P	NSW100-28	NSW100-28P
Product name		8-port GbE Nebula Cloud Managed Switch	8-port GbE Nebula Cloud Managed PoE Switch	24-port GbE Nebula Cloud Managed Switch	24-port GbE Nebula Cloud Managed PoE Switch
Switch class		Layer 2	Layer 2	Layer 2	Layer 2
Port Density					
Total port count		10	10	28	28
100/1000 Mbps		8	-	24	-
100/1000 Mbps PoE		-	8	-	24
Gigabit combo (SFP/RJ-45)		2	2	4	4
Performance					
Switching capacity (Gbps)		20	20	56	56
Forwarding rate (Mbps)		14.88	14.88	41.67	41.67
Packet buffer (byte)		448 K	1536 K	1536 K	1536 K
MAC address table		16 K	16 K	16 K	16 K
Power					
Input		100 - 240 V AC, 50/60 Hz	100 - 240 V AC, 50/60 Hz	100 - 240 V AC, 50/60 Hz	100 - 240 V AC, 50/60 Hz
Max. power consumption (watt)		12.3	230	27.2	454
Total PoE power budget (watt)		-	180	-	375
Physical Specifications					
Item	**Dimensions (WxDxH)(mm/in.)**	250 x 150 x 44/ 9.84 x 5.91 x 1.73	330 x 230.5 x 44.5/ 12.99 x 9.07x 1.75	441 x 131 x 44/ 17.36 x 5.16 x 1.73	440 x 330 x 44.5/ 17.32 x 12.99 x 1.75
	Weight (kg/lb.)	1.34/2.95	2.66/5.86	2.172/4.79	4.79/10.56
Packing	**Dimensions (WxDxH)(mm/in.)**	366 x 214 x 79/ 14.41 x 8.43 x 3.11	389 x 337 x 79/ 15.31 x 13.27 x 3.11	561 x 220 x 82/ 22.09 x 8.66 x 3.23	583 x 451 x 98/ 22.95 x 17.76 x 3.86
	Weight (kg/lb.)	2.27/5	3.65/8.05	3.263/7.19	5.747/12.67
Included accessories		• Power cord • Wall mount kit • Rack mounting kit	• Power cord • Rack mounting kit	• Power cord • Rack mounting kit	• Power cord • Rack mounting kit
Environmental Specifications					
Operating	**Temperature**	0°C to 50°C/ 32°F to 122°F	0°C to 50°C/ 32°F to 122°F	0°C to 50°C/ 32°F to 122°F	0°C to 50°C/ 32°F to 122°F
	Humidity	10% to 90%	10% to 90% (non-condensing)	10% to 90%	10% to 90% (non-condensing)
Storage	**Temperature**	-40°C to 70°C/ -40°F to 158°F	-40°C to 70°C/ -40°F to 158°F	-40°C to 70°C/ -40°F to 158°F	-40°C to 70°C/ -40°F to 158°F
	Humidity	10% to 90%	10% to 95% (non-condensing)	10% to 95%	10% to 95% (non-condensing)
MTBF (hr)		1,382,030	1,155,719	616,247	949,326
Heat dissipation (BTU/hr)		41.943	784.30	92.752	1,625.55
Acoustic noise (dBA)		0	53.2	0	59.6

Features

Standard Compliance

- IEEE 802.3 10BASE-T Ethernet
- IEEE 802.3u 100BASE-TX Ethernet
- IEEE 802.3ab 1000BASE-T Ethernet
- IEEE 802.3z 1000BASE-X
- IEEE 802.3af PoE
- IEEE 802.3at PoE plus
- IEEE 802.3az EEE
- IEEE 802.3ad LACP aggregation
- IEEE 802.1AB LLDP
- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.1Q VLAN tagging
- IEEE 802.1p Class of Service (CoS) prioritization
- IEEE 802.1X port authentication
- ZDP (Zyxel Discovery Protocol)

Resilience and Availability

- IEEE 802.3ad LACP
- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- Loop Guard
- BPDU Guard
- Root Guard
- Dual configuration files
- Dual images

Traffic Control

- 802.1Q static VLANs/dynamic VLANs: 1 K/4 K
- Port-based VLAN
- Voice VLAN

Security

- 802.1X
- Port security
- Layer 3 IP filtering
- Layer 4 TCP/UDP socket filtering
- Multiple RADIUS servers
- Login authentication by RADIUS
- Authorization on RADIUS
- SSL
- SSH
- DHCP server guard
- Guest VLAN
- ACL packet filtering (IPv4)
- Port isolation

Quality of Service (QoS)

- No. of hardware queues per port: 8 (User configurable: 6)
- Storm Control: Broadcast, multicast, unknown unicast (DLF)
- 802.1p Class of Service (WRR)
- Bandwidth Control*

Layer 2 Multicast

- L2 multicast
- IGMP snooping (v1, v2, v3)
- IGMP snooping fast leave*
- IGMP snooping immediate leave*
- Configurable IGMP snooping timer*
- IGMP snooping filtering*
- IGMP snooping Querier*
- IGMP snooping group limit*
- IPTV report*
- IGMP report proxy/leave proxy

Manageability

- SNMP v1, v2c
- ICMP echo/echo reply
- IEEE 802.1AB LLDP

Device Management

- Web interface
- Configuration saving and retrieving
- DHCP client
- Daylight saving
- Cloud-managed
- NTP
- Port mirroring
- Scheduled PoE

Certifications

Safety
- LVD
- BSMI

EMC
- FCC Part 15 (Class A)
- CE EMC (Class A)
- BSMI EMC

RoHS
- Level A

* Requires Professional Pack license

Accessories

Transceivers (Optional)

Model	Speed	Connector	Wavelength	Max. Distance	DDMI
SFP-1000T	Gigabit	RJ-45	-	100 m (109 yd)	-
SFP-BX1310-10-D	Gigabit	LC	1310 nm (Tx); 1490 nm (Rx)	10 km (10936 yd)	Yes
SFP-BX1490-10-D	Gigabit	LC	1490 nm (Tx); 1310 nm (Rx)	10 km (10936 yd)	Yes
SFP-LHX1310-40-D	Gigabit	LC	1310 nm	40 km (43744 yd)	Yes
SFP-LX-10-D	Gigabit	LC	1310 nm	10 km (10936 yd)	Yes
SFP-SX-D	Gigabit	LC	850 nm	550 m (601 yd)	Yes
SFP-ZX-80-D	Gigabit	LC	1550 nm	80 km (87488 yd)	Yes
SFP-100BX1310-20-D	Fast Ethernet	LC	1310 nm (Tx); 1550 nm (Rx)	20 km (21872 yd)	Yes
SFP-100BX1550-20-D	Fast Ethernet	LC	1550 nm (Tx); 1310 nm (Rx)	20 km (21872 yd)	Yes
SFP-100FX-2	Fast Ethernet	LC	1310 nm	2 km (2187 yd)	-
SFP-100LX-20	Fast Ethernet	LC	1310 nm	20 km (21872 yd)	-

ZYXEL

Your Networking Ally

For more product information, visit us on the web at www.zyxel.com

Copyright © 2019 Zyxel Communications Corp. All rights reserved. Zyxel, Zyxel logo are registered trademarks of Zyxel Communications Corp. All other brands, product names, or trademarks mentioned are the property of their respective owners. All specifications are subject to change without notice.

5-100-02619001 03/19