# ZYXEL





## **NSW100 Series**

### 8/24-port GbE L2 Nebula Cloud Managed PoE Switch

The Zyxel Nebula NSW100 Series Cloud Managed Layer-2 Switches come in 8- and 24-port models with high power budget of 180 and 375 watts respectively. They are 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.

### 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



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 white list and IGMP snooping



RADIUS, static MAC forwarding and 802.1X authentication



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.

### **Model List**

### 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

### 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



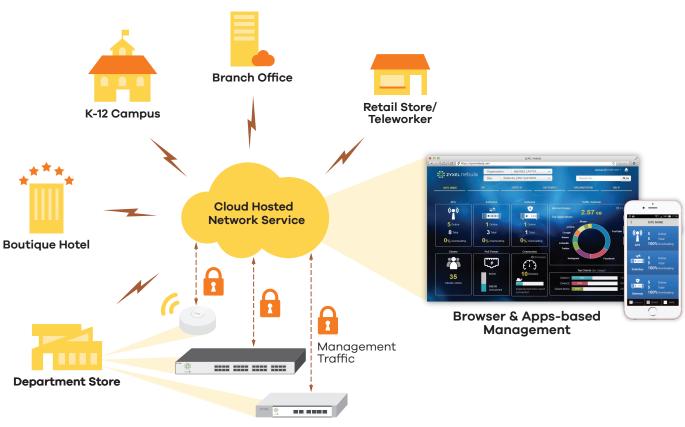
Real-time control of all the devices through a single pane of glass

SITE-WIDE	АР	swi	псн	GATEWAY	ORGANIZATION	HELP
Switch - Summary r	report Last we	ek 👻				🖂 Email repo
Consumption						
Total: 1500 W   Current con	sumption: 658W					on (Past 168.00hr): 128 (Past 168.00hr): 712.5
750 W SEO W O W 22. Apr	23. Apr	24. Apr	25. Apr	26. Apr	27. Apr 28	8. Apr 29. Apr
Top switches by bandwidt	th utilization (Uplink	Port)	T	op switches by CPU uti	lization	
NAME	MODEL	UTILIZATION		NAME	MODEL UTIL	IZATION
1 Food hall_Switch_B2	NSW100-28P	72%,85%		1 Food hall_Switch_B	2 NSW100-28P 80%	
2 Resturant Switch F3		56%, 58%				
3 Meeting area_Switch	F6 NSW100-28P	38%, 40%		3 Meeting area Swite		
	NSW200-28P	32% , 30%			NSW200-28P 40%	
Top switches by memory ut	tilization			ocation		
NAME	MODEL	UTILIZATION		* * 9	6	地图 常星神夜
1 Food hall_Switch_B2	NSW100-28P	56%				58 XXXX
2 Resturant_Switch_F3		46%		Oxfam SI Charles 5	Rreet	
3 Meeting area_Switch		3495		2		
4 Gallery_Switch_F11	NSW200-28P	25%		Berlows		+
Top ports by bandwidth ut	tilization			⊜ G <mark>oogle</mark>	地面货料面2016 Geogle 5 ②尺 L	使用格数 医感性萎缩的
NAME	PORT	NUMBER	MODEL	LINK STATUS	UTILIZATION	ERROR COUNT
1 Food hall_Switch_B2:	tiport 4 4		NSW100-28P	1G/auto/copper	50%, 51%	
			NSW100-28P	1G/auto/copper	48%, 46%	
			NSW100-28P	1G/auto/copper		
					42%, 43%	
			NSW100-28P	1G/auto/copper	42%, 43%	
5 Gallery_Switch_F11;p			NSW100-28P NSW200-28P	1G/auto/copper 1G/auto/copper		
5 Gallery_Switch_F11;p					38%, 39%	
Top switches by power cor	port 17 17		NSW200-28P	1G/outo/copper	38%, 39% 28%, 32%	
Top switches by power co	port 17 17 Insumption	MODEL	NSW200-28P	1G/auto/copper	38%, 39% 28%, 32%	
Top switches by power con NAME 1 Food hall_Switch_B2	port 17 17	NSW10	NSW200-28P	1G/auta/copper CONSUMP 245W	38%, 39% 28%, 32%	
Top switches by power con NAME 1 Food hall_Switch_B2 2 Resturant_Switch_F3	port 17 17	NSW10	NSW200-28P	IG/outo/copper CONSUMP 245W 98W	38%, 39% 28%, 32%	
Top switches by power con NAME 1 Food hall_Switch_B2 2 Resturant_Switch_F3 3 Meeting area_Switch	port 17 17	NSW10 NSW10 NSW10	NSW200-28P	IG/outo/copper CONSUMP 245W 96W 76W	38%, 39% 28%, 32%	
Top switches by power con NAME 1 Food hall_Switch_B2 2 Resturant_Switch_F3	port 17 17	NSW10	NSW200-28P	IG/outo/copper CONSUMP 245W 98W	38%, 39% 28%, 32%	
Top switches by power cos NAME 1 Food hall_Switch_B2 2 Resturant_Switch_B3 3 Meeting area_Switch 4 Gallery_Switch_F11 Top ports by power consu	port 17 17 insumption	NSW10 NSW10 NSW10 NSW20	NSW200-28P	IG/auto/copper CONSUMP 245W 98W 76W 48W	38%, 39% 28%, 32%	
Top switches by power con NAME    I Food hall_Switch_D2  2 Restarant_Switch_F3  3 Meeting area_Switch_F11  Top ports by power consul  SWITCH NAME	port 17 17 insumption PORT NUMBER	NSW10 NSW10 NSW10 NSW20 MODEL	NSW200-28P	IG/auto/copper CONSUMP 245W 98W 76W 48W	38%, 39% 28%, 32%	ACTION
Top switches by power con NAME	port 17         17           insumption         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -	NSW10 NSW10 NSW20 NSW20 MODEL NSW100-28P	NSW200-28P	IG/auto/copper CONSUMP 245W 98W 76W 48W	38%, 39% 28%, 32%	Power cycle
Top switches by power con NAME    I Food hall_Switch_D2  2 Restarant_Switch_F3  3 Meeting area_Switch_F11  Top ports by power consul  SWITCH NAME	port 17         17           insumption         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -           :         -	NSW100-28P	NSW200-28P	IG/auto/copper CONSUMP 245W 98W 76W 48W	38%, 39% 28%, 32%	
Top switches by power con NAME	post 17         17           insumption	NSW10 NSW10 NSW20 NSW20 MODEL NSW100-28P	NSW200-28P	IG/auto/copper CONSUMP 245W 98W 76W 48W	38%, 39% 28%, 32%	Power cycle
Tep selicities by power con NAME 1 Food hall_Selicit, 192 2 Research, 193 3 Meeting area, Selicit, 193 3 Meeting area, Selicit, 111 4 Gallery, Selicit, 111 4 Gallery, Selicit, 111 5 Food hall_Selicit, 112 7 Food hall_Selicit, 112 2 Food hall_Selicit, 112	post 17         17           insumption	NSW100-28P	NSW200-28P	IG/auto/copper CONSUMP 245W 98W 76W 48W	38%, 39% 28%, 32%	Power cycle Power cycle

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

### **Applications Diagram**

### Nebula cloud management architecture



**On-premises Nebula Hardware** 

### **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.

### Specifications

NSW100-28P	NSW100-10P
24-port GbE Nebula Cloud Managed PoE Switch	8-port GbE Nebula Cloud Managed PoE Switch
	24-port GbE Nebula Cloud

Switch class	3	Layer 2	Layer 2	
Port Density	/			
Total port count		28	10	
100/1000 Mbps PoE		24	8	
Gigabit combo (SFP/RJ-45)		4	2	
Performanc	e			
Switching capacity (Gbps)		56	20	
Forwarding rate (Mbps)		41.67	15	
Packet buffer (byte)		1.5 M	1.5 M	
MAC addres	is table	16 K	16 K	
Power				
Input		100 - 240 V AC, 50/60 Hz	100 - 240 V AC, 50/60 Hz	
Max. power	consumption (watt)	454	230	
Total PoE power budget (watt)		375	180	
Physical Specifications				
Item	Dimensions (WxDxH)(mm/in.)	440 x 330 x 44.5/17.32 x 12.99 x 1.75	330 x 230.5 x 44.5/12.99 x 9.07x 1.75	
	Weight (kg/lb.)	4.79/10.56	2.703/5.96	
Packing	Dimensions (WxDxH)(mm/in.)	583 x 451 x 98/22.95 x 17.76 x 3.86	389 x 337 x 79/15.31 x 13.27 x 3.11	
	Weight (kg/lb.)	5.747/12.67	3.65/8.05	
Included accessories		<ul><li>Power cord</li><li>Rack mounting kit</li></ul>	• Power cord • Rack mounting kit	
Environmen	tal Specifications			
Operating	Temperature	0°C to 50°C/32°F to 122°F	0°C to 50°C/32°F to 122°F	
	Humidity	10% to 95% (non-condensing)	10% to 95% (non-condensing)	
Storage	Temperature	-40°C to 70°C/-40°F to 158°F	-40°C to 70°C/-40°F to 158°F	
	Humidity	10% to 90% (non-condensing)	10% to 90% (non-condensing)	
MTBF (hr)		949,326	1,155,719	
Heat dissipc	ation (BTU/hr)	1,625.55	784.30	
Acoustic noise (dBA)		59.6	37.7	

### **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 (Max # Trunks/ Links per Trunk): 8/8

### **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
- Authorization on RADIUS
- SSL
- DHCP white list
- Guest VLAN
- ACL packet filtering (IPv4)

### **Quality of Service (QoS)**

• No. of hardware queues per port: 8 (User configurable: 6)

### Layer 2 Multicast

- L2 multicast
- IGMP snooping (v1, v2, v3)

### Manageability

- SNMP v1, v2c
- SNMP trap group
- ICMP echo/echo reply
- Syslog
- 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

### Transceivers (Optional)

**Accessories** 

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)	-



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