

## GS2220 Series

### 10/28/50-port GbE L2 Managed Switch

Zyxel's new generation of Layer 2 Managed Switch GS2220 Series are fully featured Layer 2 Gigabit access switches designed to meet converged data, video and voice networking needs. This latest series' eye-catching new look comes in 10-, 28-, and 50-port models with a combination of PoE and non-PoE. On top of the fully manageable L2 features set comes with the state-of-art Zyxel NebulaFlex Pro technology for cloud manageability.

### Benefits

#### Agile traffic control for converged networking applications

The GS2220 Series has a rich Layer 2 feature set that can shape the traffic for diverse VoIP, video conference and IPTV deployments. Advanced traffic control features of the GS2220 Series such as L2 multicast, IGMP snooping, Multicast VLAN Registration (MVR) provide hotels, businesses, and educational institutions greater agility and more effective traffic management for the converged applications of today.

#### Experience whisper-silent operations

The GS2220 Series includes fanless and built-in smart fan models. The smart fan is designed to automatically adjust speeds based on the device temperature, offering near silence while the GS2220 Series is in operation. Ideal for your office environment no matter if it's on the desktop or mounted on a rack.



NebulaFlex Pro allows users to switch between standalone management and intuitive Nebula cloud managed mode with 1-Year Pro Pack bundled



L2 multicast, IGMP snooping, MVR and voice VLAN for convergence



High power budget of 375 W (28HP/52HP) and 180 W (10HP) within its compact case design simplifying rack installation



Smart fan and fanless designs offer near silent operations in both desktop and rack-mount environment



Check real-time status intuitively by cloud and PoE LED indicators

## Power your devices with efficiency and energy-saving

The GS2220 Series PoE switches support 802.3at PoE Plus standards to offer 30-watt per port along with maximum 375-watt high-power budget to meet the needs from power-hungry devices. The intelligent consumption mode allows delivery of only the actual power required by devices connected to the switch for better business ROI.

## NebulaFlex Pro – simply manage it your way!

The NebulaFlex Pro provides extended flexibility, especially for those who hesitate to step up for cloud networking. You can switch easily between Cloud Managed with a 1-Year Pro Pack License Bundled or Standalone Management. The NebulaFlex Pro even allows you to change your mind at any time without additional cost while protecting previous investments on wired technology. You can have the privilege to use advanced features with professional pack

The PoE scheduling feature supplies power to devices only during working hours, saving energy and money while preventing improper use of business network resources. The user-friendly PoE consumption indicator located on the front panel and Web GUI provides real-time power utilization.

for one year upon registration on Nebula; these features include advanced IGMP technology, comprehensive IPTV reports that provide insights to channel usage information, network analytics alert to optimize network performance along with more upcoming new features on NCC and its App.

\* Please refer to the following feature sets for the detail cloud support features.



## Model List

### GS2220-10

8-port GbE L2 Switch with GbE Uplink



- 8 x GbE PoE RJ-45 ports
- 2 x GbE combo ports

### GS2220-10HP

8-port GbE L2 PoE Switch with GbE Uplink



- 8 x GbE PoE RJ-45 ports
- 2 x GbE combo ports
- PoE power budget: 180 W

### GS2220-28

24-port GbE L2 Switch with GbE Uplink



- 24 x GbE RJ-45 ports
- 4 x GbE combo ports

### GS2220-28HP

24-port GbE L2 PoE Switch with GbE Uplink



- 24 x GbE PoE RJ-45 ports
- 4 x GbE combo ports
- PoE power budget: 375 W

### GS2220-50

48-port GbE L2 Switch with GbE Uplink



- 44 x GbE RJ-45 ports
- 4 x GbE combo ports
- 2 x GbE SFP slots

### GS2220-50HP

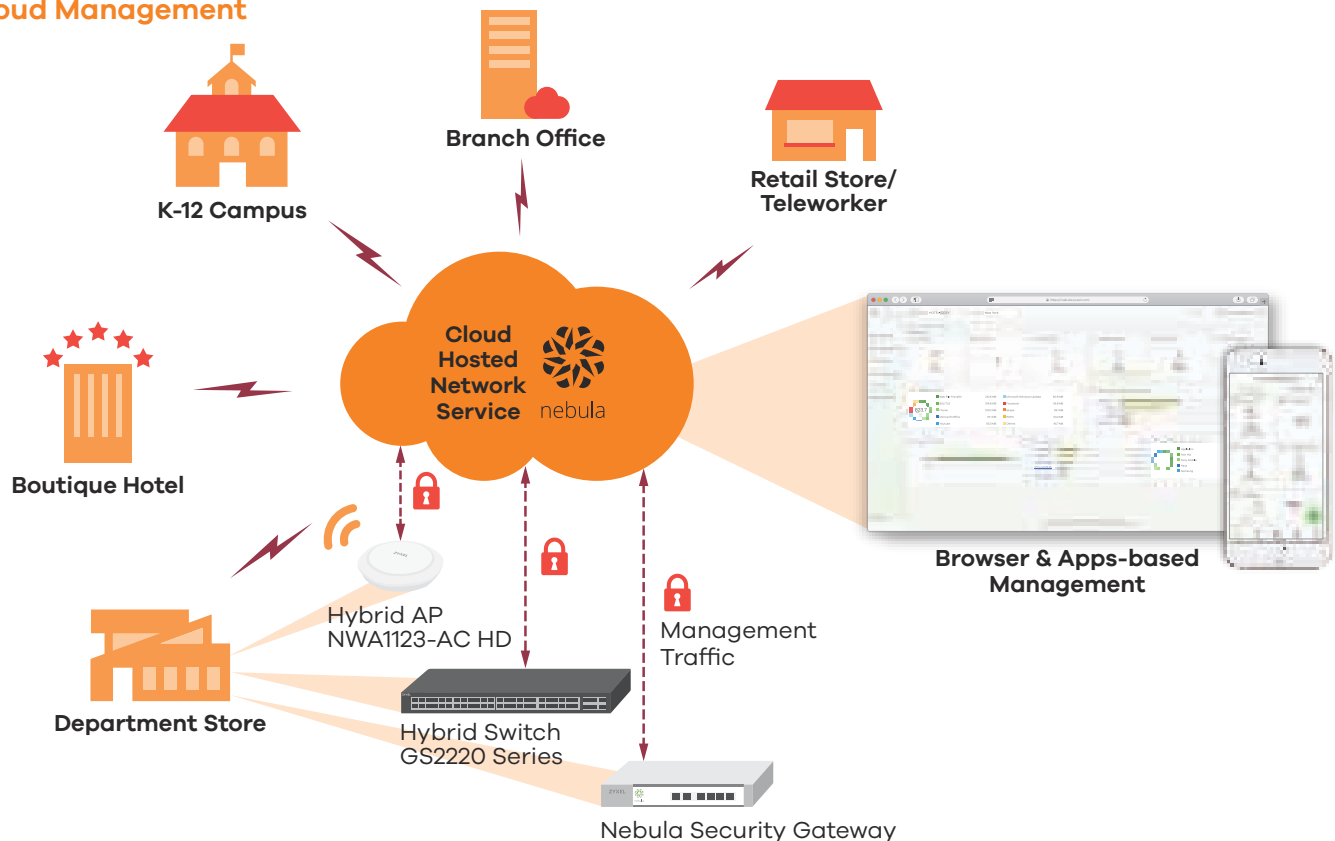
48-port GbE L2 PoE Switch with GbE Uplink



- 48 x GbE PoE RJ-45 ports
- 4 x GbE combo ports
- 2 x GbE SFP slots
- PoE power budget: 375 W

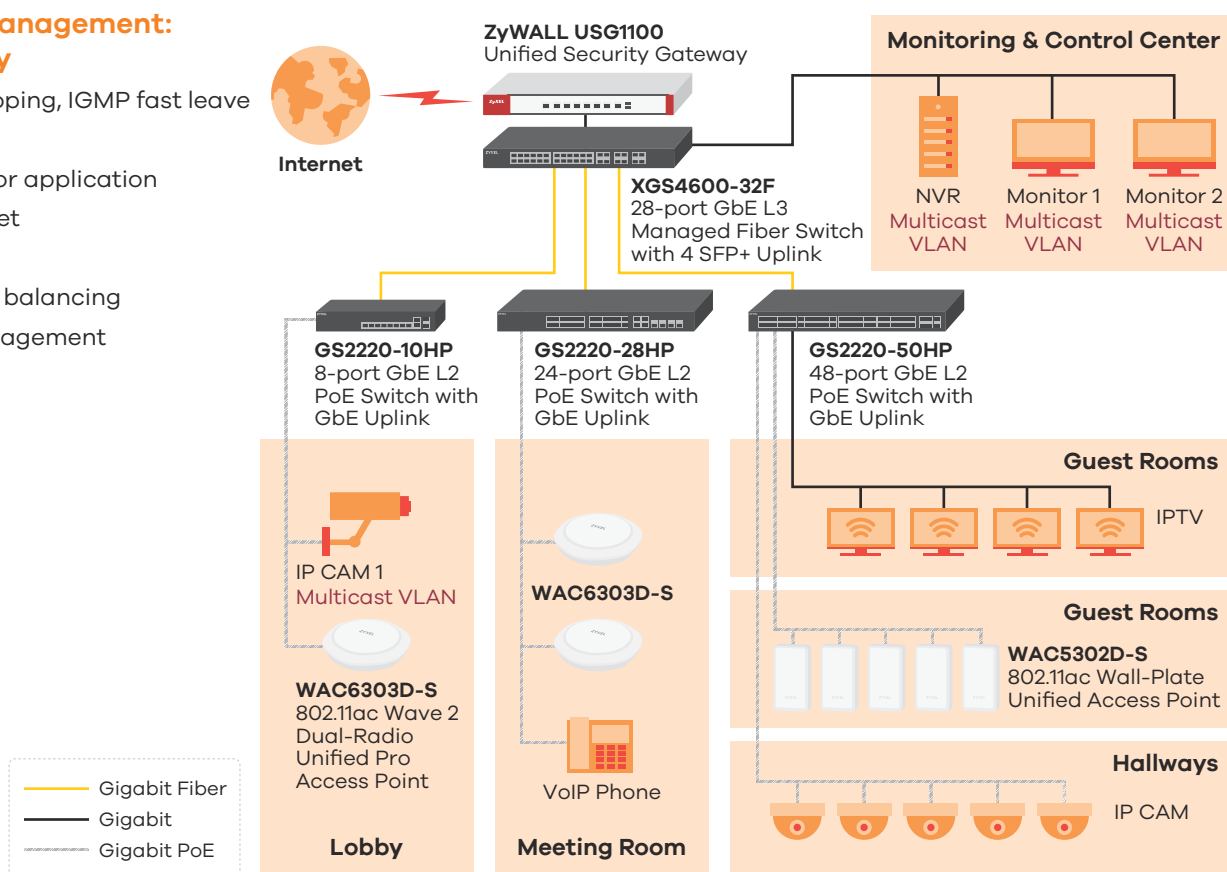
## Application Diagram

### Cloud Management



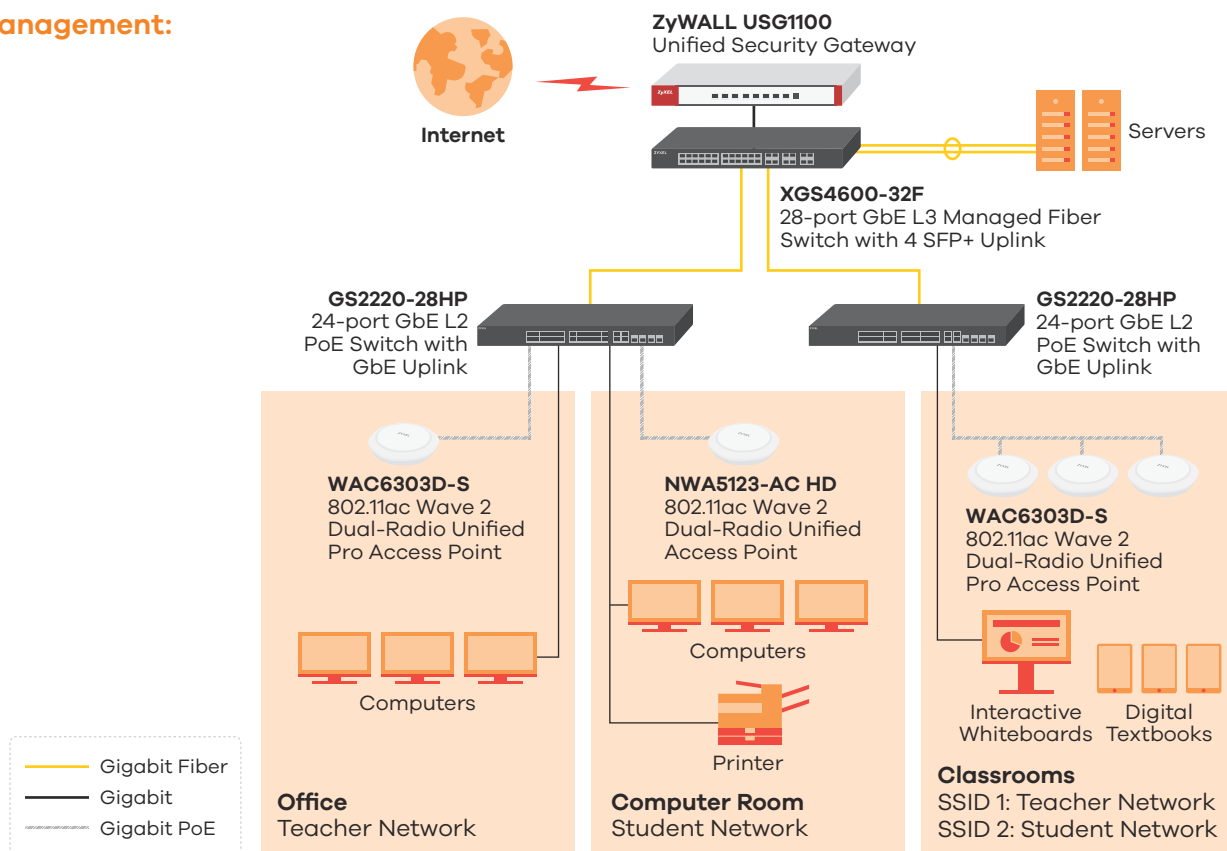
## Standalone Management: For Hospitality

- MVR, IGMP snooping, IGMP fast leave
- Port isolation
- QoS by port, IP or application
- High PWR budget
- 802.3at support
- Multi-WAN load balancing
- Bandwidth management



## Standalone Management: For Education

- Loop guard
- CPU protection
- IP source guard



## Specifications

| Model                         |                             | GS2220-10                                               | GS2220-10HP                                             | GS2220-28                             | GS2220-28HP                               | GS2220-50                             | GS2220-50HP                               |
|-------------------------------|-----------------------------|---------------------------------------------------------|---------------------------------------------------------|---------------------------------------|-------------------------------------------|---------------------------------------|-------------------------------------------|
| Product name                  |                             | 8-port GbE L2 Switch with GbE Uplink                    | 8-port GbE L2 PoE Switch with GbE Uplink                | 24-port GbE L2 Switch with GbE Uplink | 24-port GbE L2 PoE Switch with GbE Uplink | 48-port GbE L2 Switch with GbE Uplink | 48-port GbE L2 PoE Switch with GbE Uplink |
| Switch class                  |                             | Layer 2                                                 | Layer 2                                                 | Layer 2                               | Layer 2                                   | Layer 2                               | Layer 2                                   |
| Port Density                  |                             |                                                         |                                                         |                                       |                                           |                                       |                                           |
| Total port count              |                             | 10                                                      | 10                                                      | 28                                    | 28                                        | 50                                    | 50                                        |
| 100/1000 Mbps                 |                             | 8                                                       | 8                                                       | 24                                    | 24                                        | 44                                    | 44                                        |
| Gigabit Combo (RJ-45/SFP)     |                             | 2                                                       | 2                                                       | 4                                     | 4                                         | 4                                     | 4                                         |
| Gigabit SFP                   |                             | -                                                       | -                                                       | -                                     | -                                         | 2                                     | 2                                         |
| PoE                           |                             |                                                         |                                                         |                                       |                                           |                                       |                                           |
| 802.3at PoE ports             |                             | -                                                       | 8                                                       | -                                     | 24                                        | -                                     | 48                                        |
| Total PoE budget (watts)      |                             | -                                                       | 180                                                     | -                                     | 375                                       | -                                     | 375                                       |
| Performance                   |                             |                                                         |                                                         |                                       |                                           |                                       |                                           |
| Switching capacity (Gbps)     |                             | 20                                                      | 20                                                      | 56                                    | 56                                        | 100                                   | 100                                       |
| Forwarding rate (Mpps)        |                             | 15                                                      | 15                                                      | 42                                    | 42                                        | 74                                    | 74                                        |
| Packet buffer (byte)          |                             | 1.5 M                                                   | 1.5 M                                                   | 1.5 M                                 | 1.5 M                                     | 1.5 M                                 | 1.5 M                                     |
| MAC address table             |                             | 16 K                                                    | 16 K                                                    | 16 K                                  | 16 K                                      | 16 K                                  | 16 K                                      |
| Flash/RAM (MB)                |                             | 32/256                                                  | 32/256                                                  | 32/256                                | 32/256                                    | 32/256                                | 32/256                                    |
| 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                  | 100 - 240 V AC, 50/60 Hz              | 100 - 240 V AC, 50/60 Hz                  |
| Max. power consumption (watt) |                             | 11                                                      | 210.8                                                   | 22.5                                  | 463.5                                     | 36.9                                  | 474.3                                     |
| Physical Specifications       |                             |                                                         |                                                         |                                       |                                           |                                       |                                           |
| Item                          | Dimensions (WxDxH) (mm/in.) | 267 x 162 x 44/10.51 x 6.38 x 1.73                      | 267 x 162 x 44/10.51 x 6.38 x 1.73                      | 441 x 131 x 44/17.36 x 5.16 x 1.73    | 441 x 270 x 44/17.36 x 10.63 x 1.73       | 440 x 200 x 44.5/17.32 x 7.87 x 1.75  | 441 x 270 x 44/17.36 x 10.63 x 1.73       |
|                               | Weight (kg/lb.)             | 1.3/2.87                                                | 1.8/3.97                                                | 2.2/4.85                              | 3.8/8.38                                  | 2.9/6.39                              | 4.1/9.04                                  |
| Packing                       | Dimensions (WxDxH) (mm/in.) | 375 x 235 x 61/14.76 x 9.25 x 2.4                       | 375 x 235 x 61/14.76 x 9.25 x 2.4                       | 558 x 214 x 79/21.97 x 8.43 x 3.11    | 616 x 355 x 107/24.25 x 13.98 x 4.21      | 496 x 289 x 90/19.53 x 11.38 x 3.54   | 616 x 355 x 107/24.25 x 13.98 x 4.21      |
|                               | Weight (kg/lb.)             | 2.21/4.87                                               | 2.7/5.95                                                | 2.91/6.42                             | 4.97/10.96                                | 3.97/8.75                             | 5.25/11.57                                |
|                               | Included accessories        | • Power cord<br>• Wall-mount kit<br>• Rack mounting kit | • Power cord<br>• Wall-mount kit<br>• Rack mounting kit | • Power cord<br>• Rack mounting kit   | • Power cord<br>• Rack mounting kit       | • Power cord<br>• Rack mounting kit   | • Power cord<br>• Rack mounting kit       |
| Green Features                |                             |                                                         |                                                         |                                       |                                           |                                       |                                           |
| Fanless                       |                             | Yes                                                     | -                                                       | Yes                                   | -                                         | -                                     | -                                         |
| Environmental Specifications  |                             |                                                         |                                                         |                                       |                                           |                                       |                                           |
| Operating                     | Temperature                 | 0°C to 50°C/32°F to 122°F                               |                                                         |                                       |                                           |                                       |                                           |
|                               | Humidity                    | 10% to 95% (non-condensing)                             |                                                         |                                       |                                           |                                       |                                           |
| Storage                       | Temperature                 | -40°C to 70°C/-40°F to 158°F                            |                                                         |                                       |                                           |                                       |                                           |
|                               | Humidity                    | 10% to 95% (non-condensing)                             |                                                         |                                       |                                           |                                       |                                           |
| MTBF (hr)                     |                             | 1,213,492                                               | 587,477                                                 | 989,157                               | 693,245                                   | 660,245                               | 466,921                                   |
| Heat dissipation (BTU/hr)     |                             | 37.51                                                   | 718.828                                                 | 76.725                                | 1,580.535                                 | 125.829                               | 1,617.363                                 |
| Acoustic noise (min/max, dBA) |                             | 0                                                       | 18/41                                                   | 0                                     | 27.2/49.8                                 | 23.6/47.3                             | 26.5/49.5                                 |

# Features

## Standard Compliance

- 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 802.3x flow control
- IEEE 802.1AB LLDP/LLDP-MED
- IEEE 802.3ad LACP aggregation\*
- IEEE 802.1D Spanning Tree Protocol (STP)\*
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)\*
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- IEEE 802.1Q VLAN tagging
- IEEE 802.1p Class of Service (CoS) prioritization\*
- IEEE 802.1X port authentication\*

## Resilience and Availability

- IEEE 802.1D Spanning Tree Protocol (STP)\*
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)\*
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
- IEEE 802.3ad LACP
- Loop guard\*
- Root guard
- BPDU guard
- ErrDisable recovery
- MRSTP (Zyxel Proprietary)
- Dual configuration files
- Dual images\*

## Traffic Control

- 802.1Q static VLANs\*/dynamic VLANs: 1 K/4 K
- Port-based VLAN
- Protocol-based VLAN
- IP subnet-based VLAN
- MAC-based VLAN
- Private VLAN
- Voice VLAN\*
- Vendor ID based VLAN\*
- VLAN ingress filtering
- LACP algorithm of source/destination IP or MAC
- GVRP
- L2PT

## Security

- Port security\*
- Layer 2 MAC filtering
- Layer 3 IP filtering
- Layer 4 TCP/UDP socket filtering
- Static MAC forwarding
- Multiple RADIUS servers\*
- Multiple TACACS+ servers
- 802.1x VLAN and 802.1p assignment by RADIUS
- Login authentication by RADIUS
- Login authentication by TACACS+
- TACACS+ accounting
- RADIUS accounting
- Authorization on RADIUS
- Authorization on TACACS+
- SSH v2
- SSL
- MAC freeze
- DHCP snooping IPv4
- DHCP snooping IPv6
- ARP inspection
- Static IP-MAC-Port binding
- Policy-based security filtering
- Port isolation
- IP source guard (IPv4/IPv6)
- MAC search
- Guest VLAN\*
- ACL packet filtering (IPv4/IPv6)
- CPU protection
- Interface related trap enable/disable (by port)
- MAC-based authentication per VLAN

## Quality of Service (QoS)

- No. of hardware queues per port: 8\*
- Storm control and event log: Broadcast, multicast, unknown unicast (DLF)\*
- Port-based rate limiting\* (ingress/egress)
- Rate limiting per IP/TCP/UDP per port
- Policy-based rate limiting
- 802.3x flow control
- 802.1p Class of Service (SPQ, WFQ, WRR, hybrid-SPQ combination capable)
- DiffServ (DSCP)

## Layer 2 Multicast

- L2 multicast
- IGMP snooping (v1, v2, v3)\*
- IGMP snooping fast leave
- Configurable IGMP snooping timer and priority

- IGMP snooping statistics
- IGMP throttling
- MVR support
- IGMP filtering
- IGMP snooping immediate leave
- IGMP proxy mode & snooping mode selection
- MLD snooping

## Manageability

- SNMP v1, v2c, v3
- SNMP trap group
- RMON (1, 2, 3, 9)
- ICMP echo/echo reply
- Syslog\*
- IEEE 802.1AB LLDP
- IEEE 802.1AB LLDP-MED
- Custom default
- Syslog (IPv4/IPv6)
- Display port utilization\*
- Support NebulaFlex Pro for Cloud Management

## IPv6 Management

- IPv6 over Ethernet (RFC 2464)
- IPv6 addressing architecture (RFC 4291)
- Dual stack (RFC 4213)
- ICMPv6 (RFC 4443)
- Path MTU (RFC 1981)
- Minimum path MTU size of 1280 (RFC 5095)
- Encapsulation for maximum PMTU of 1500
- Neighbor discovery (RFC 4861)
- DHCPv6 relay
- Default DHCP client mode\*

## Device Management

- Standalone management by Web interface
- Cloud management by Nebula Control Center\*
- Zyxel iStacking™
- Web interface
- Management through Console, Telnet, SNMP
- Remote firmware upgrade by FTP/Web/TFTP
- Configuration saving and retrieving
- Multiple logins supported
- Configure clone
- Multilevel CLI
- CLI (Cisco-like)
- DHCP relay per VLAN

- DHCP client IPv4\*
- DHCP client IPv6
- DHCP option 82
- DHCP Auto
- Daylight saving\*
- NTP supports IPv4/IPv6
- Port mirroring\*
- RS-232 out-of-band console port
- Scheduled PoE\*
- PoE default consumption mode\*
- Restore to last custom default

## MIB

- Zyxel new private MIB
- RFC 1066 TCP/IP-based MIB
- RFC 1213, 1157 SNMPv2c/v3 MIB
- RFC 1493 bridge MIB
- RFC 1643 Ethernet MIB
- RFC 1757 RMON group 1, 2, 3, 9
- RFC 2011, 2012, 2013 SNMPv2 MIB
- RFC 2233 SMIv2 MIB
- RFC 2358 Ethernet-like MIB
- RFC 2674 bridge MIB extension
- RFC 2819, 2925 remote management MIB
- RFC 3621 power Ethernet MIB
- RFC 4022 management information base for transmission control protocol

- RFC 4113 management information base for user datagram protocol
- RFC 4292 IP forwarding table MIB
- RFC 4293 Management Information Base (MIB) for IP
- Cable diagnostic MIB

## Certifications Safety

- Safety
  - LVD
  - BSMI
- EMC
  - FCC Part 15 (Class A)
  - CE EMC (Class A)
  - BSMI ENC
- RoHS
  - Level A

## Zyxel One Network

### ZON Utility\*

- Discovery of Zyxel switches, APs and gateways
- Centralized and batch configurations
  - IP configuration
  - IP renew
  - Device factory reset
  - Device reboot

- Device locating
- Web GUI access
- Password configuration
- One-click quick association with Zyxel AP Configurator (ZAC)
- Automatic detection of the latest firmware
- Displays device serial number and hardware version
- Cloud mode on/off option for Hybrid series devices

### Smart Connect

- Discover neighboring devices
- One-click remote management access to the neighboring Zyxel devices
- Reset neighboring devices remotely to factory defaults
- Power cycle neighboring powered devices (PoE switches only)

## Warranty

- Limited life-time warranty\*\*

\* Cloud and standalone modes supported features

\*\* Warranty terms, service availability, and service response times may vary from country or region to country or region

## Accessories

### Transceivers (Optional)

| Model                   | Speed   | Connector | Wavelength                   | Max. Distance    | DDMI |
|-------------------------|---------|-----------|------------------------------|------------------|------|
| <b>SFP-1000T</b>        | Gigabit | RJ-45     | -                            | 0.1 km (109 yd)  | -    |
| <b>SFP-SX-D</b>         | Gigabit | LC        | 850 nm                       | 0.55 km (601 yd) | Yes  |
| <b>SFP-SX-E</b>         | Gigabit | LC        | 850 nm                       | 0.55 km (601 yd) | Yes  |
| <b>SFP-LX-10-D</b>      | Gigabit | LC        | 1310 nm                      | 10 km (10936 yd) | Yes  |
| <b>SFP-LX-10-E</b>      | Gigabit | LC        | 1310 nm                      | 10 km (10936 yd) | Yes  |
| <b>SFP-LHX1310-40-D</b> | Gigabit | LC        | 1310 nm                      | 40 km (43744 yd) | Yes  |
| <b>SFP-ZX-80-D</b>      | Gigabit | LC        | 1550 nm                      | 80 km (87488 yd) | Yes  |
| <b>SFP-BX1310-10-D</b>  | Gigabit | LC        | 1310 nm (Tx)<br>1490 nm (Rx) | 10 km (10936 yd) | Yes  |
| <b>SFP-BX1310-E</b>     | Gigabit | LC        | 1310 nm (Tx)<br>1550 nm (Rx) | 20 km (21872 yd) | Yes  |
| <b>SFP-BX1490-10-D</b>  | Gigabit | LC        | 1490 nm (Tx)<br>1310 nm (Rx) | 10 km (10936 yd) | Yes  |
| <b>SFP-BX1550-E</b>     | Gigabit | LC/SC     | 1550 nm (Tx)<br>1310 nm (Rx) | 20 km (21872 yd) | Yes  |

For more product information, visit us on the web at [www.zyxel.com](http://www.zyxel.com)

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