



## A Robust, Intelligent Layer 2 Ethernet Switch for Small Workgroups

- 5.6Gbps Non-Blocking Switching Architecture
- iStacking™ Clustering Technology, One IP Management for 24 Devices
- iManage™ Easy Management Tools (GUI, CLI & Text-based Configuration for Scripting)
- 802.1x Port-based Authentication for Central Management
- Port-based and 802.1Q Tagged VLAN (4K PVID)
- MAC Filtering, MAC Freeze, Intrusion Lock and Specific MAC Forwarding



8-port Managed Layer 2 Fast Ethernet Switch

ES-2108  
SERIES

### Benefits

#### Powerful Compact Design for Small Workgroup Environment

The ES-2108 Managed Layer 2 Fast Ethernet Switch series is designed for small workgroup environment. Thanks to its compact 8-port design and selections of uplink options (1000Base-T, SFP, 100FX), the ES-2108 series offers functionality and connectivity that best fit small-workgroup needs. In addition, the wall-mountable design adds flexibility of deployment.

The ES-2108 series comes in four models: ES-2108, ES-2108-G, ES-2108-LC and ES-2108PWR. All switches come with a non-blocking 5.6 Gbps switching architecture for wire-speed transmission. The ES-2108 has 8 10/100Base-T ports without the uplink interface. The ES-2108-G comes with one dual personality Gigabit uplink port. The ES-2108-LC comes with independent uplink interface of one 100FX port and one SFP slot to ease deployment of fiber connectivity with future-proof hardware. In addition to having all the features in ES-2108-G, ES-2108PWR includes the PoE (Power over Ethernet) to supply power to devices connected to the 8 10/100Base-T ports simultaneously.

#### Excellent Network Management Capability

The ZyXEL ES-2108 series includes rich management tools to streamline your management effort. With ZyXEL's exclusive iStacking™ technology, you can manage up to 24 ZyXEL switches through one IP address. In addition, through iManage™ that includes Web-GUI, CLI (Command Line Interface) and text-based configuration, network managers can select the one management interface they are most comfortable with and get the job done efficiently. Moreover, you can protect your management session with SSHv1/v2 authentication and SSL encryption features. With its comprehensive features, ZyXEL's ES-2108 series is your first choice for cost-effective networking.

#### Security on the Network Edge

Support of IEEE 802.1x authentication allows centralized user management and added security protection. The ES-2108 series comes with complete VLAN functions (IEEE 802.1Q VLAN tagging and port-based VLAN) to secure your network. With 4K PVID, you have complete freedom in VLAN management. The ES-2108 series also includes device-aware security features (MAC address, like MAC filtering, MAC freezing and MAC forwarding) to effectively prevent access of unidentified devices. All these features offer extra protection on the network edge.

## Traffic Prioritization for Multi-Services

With 4 priority queues and WRR scheduling mechanism, ZyXEL's ES-2108 series is able to perform traffic prioritizing for multi-service applications. You can also customize DSCP settings to provide an end-to-end QoS environment. In addition, you can enable IGMP snooping to optimize service quality for IP multicasting applications. For bandwidth management, the ES-2108 series supports bandwidth increment of 64Kbps to give different bandwidth allocations.

## Specifications

### Standard Compliance

- IEEE 802.3 10Base-T Ethernet
- IEEE 802.3u 100Base-Tx Ethernet
- IEEE 802.u 100FX (ES-2108-LC)
- IEEE 802.3ab 1000Base-T Ethernet (ES-2108-G/ES-2108PWR/ES-2108-LC)
- IEEE 802.3z 1000Base-X Ethernet (ES-2108-G/ES-2108PWR/ES-2108-LC)
- IEEE 802.3af Power over Ethernet (ES-2108PWR)
- IEEE 802.3x Flow control
- IEEE 802.1d Spanning tree protocol
- IEEE 802.1w Rapid Spanning tree protocol
- IEEE 802.1p Class of service, priority protocols
- IEEE 802.1Q VLAN tagging
- IEEE 802.1x Port Authentication
- IEEE 802.3ad LACP aggregation

### Performance

- 5.6Gbps non-blocking switching fabric
- Flexible design for Gigabit copper and Gigabit fiber connectivity
- ES-2108 Switching Forwarding Rate 1.2Mpps (148800pps/100Base-TX)
- ES-2108-G/ES-2108PWR Switching Forwarding Rate 2.7Mpps (148800pps/1000Base-T/1000Base-X, 148800pps/100Base-TX)
- ES-2108-LC Switching Forwarding Rate 2.9Mpps (148800pps/1000Base-T/1000Base-X, 148800pps/100Base-TX/100FX)
- Wire-speed performance

### MAC

- 8K MAC entries

### Traffic Management and QoS

- IEEE 802.1p with 4 priority queues per port for different types of traffic
- DSCP
- GVRP, automatic VLAN member registration
- IGMP snooping
- Congestion control on all ports
- Broadcast Storm Control
- Rate Limiting

### Resilient Link and Link Aggregation

- IEEE 802.1Q tag-based and port-based VLAN
- IEEE 802.3ad compliant
- LACP, static and dynamic link aggregation
- Up to 2 aggregation groups, per group support up to 4 ports (FE only)
- IEEE802.1w Rapid Spanning Tree Protocol (RSTP) provides rapid convergence of spanning tree independent of spanning-tree timer

### Security and Authentication

- MAC filtering per port secures access to each port
- Specific MAC forwarding per port: only specified MAC addresses can access the network (port lock)
- 802.1x port-based authentication, preventing unauthorized users from accessing the network
- 256 static VLAN, up to 4K dynamic VLAN
- Full range 4K PVID
- MAC Freeze
- Intrusion Lock

### Network Administration

- User name/password required for web/telnet/local console administrators
- Two security levels by specific SNMP read/write community

### Network Management

- ZyXEL iStacking™, up to 24 switches can be managed by one IP address
- Web-based management
- Telnet CLI
- SNMP v1v2c
- RS-232c local console
- DHCP relay/option 82
- IP management: static IP or DHCP client
- 4 RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
- Supports Source/Destination/Both port mirroring

### Hardware Specifications

- ES-2108: 8 x 10/100Base-T
- ES-2108-G/ES-2108PWR: 8 x 10/100Base-T and one dual personality Gigabit interface (RJ-45 or SFP open slot)
- ES-2108-LC: 8 x 10/100Base-T, 1 x 100FX and one SFP Gigabit open slot
- Support auto-negotiation
- Support auto MDI/MDI-X,
- 1 D-Sub 9-pin Female (DCE) Console port

### Physical Specifications

#### ES-2108/ES-2108-G/ES-2108-LC

- Dimensions: 250 (W) x 135 (D) x 35 (H) mm
- Weight: 1.2 Kg

#### ES-2108PWR

- Dimensions: 250 (W) x 135 (D) x 44.5 (H) mm
- Weight: 3.8 Kg

### Power Requirement

#### ES-2108/ES-2108-G/ES-2108-LC

- Input voltage of AC: 100-240VAC, 50/60Hz
- Max power rating of AC: 10 Watt

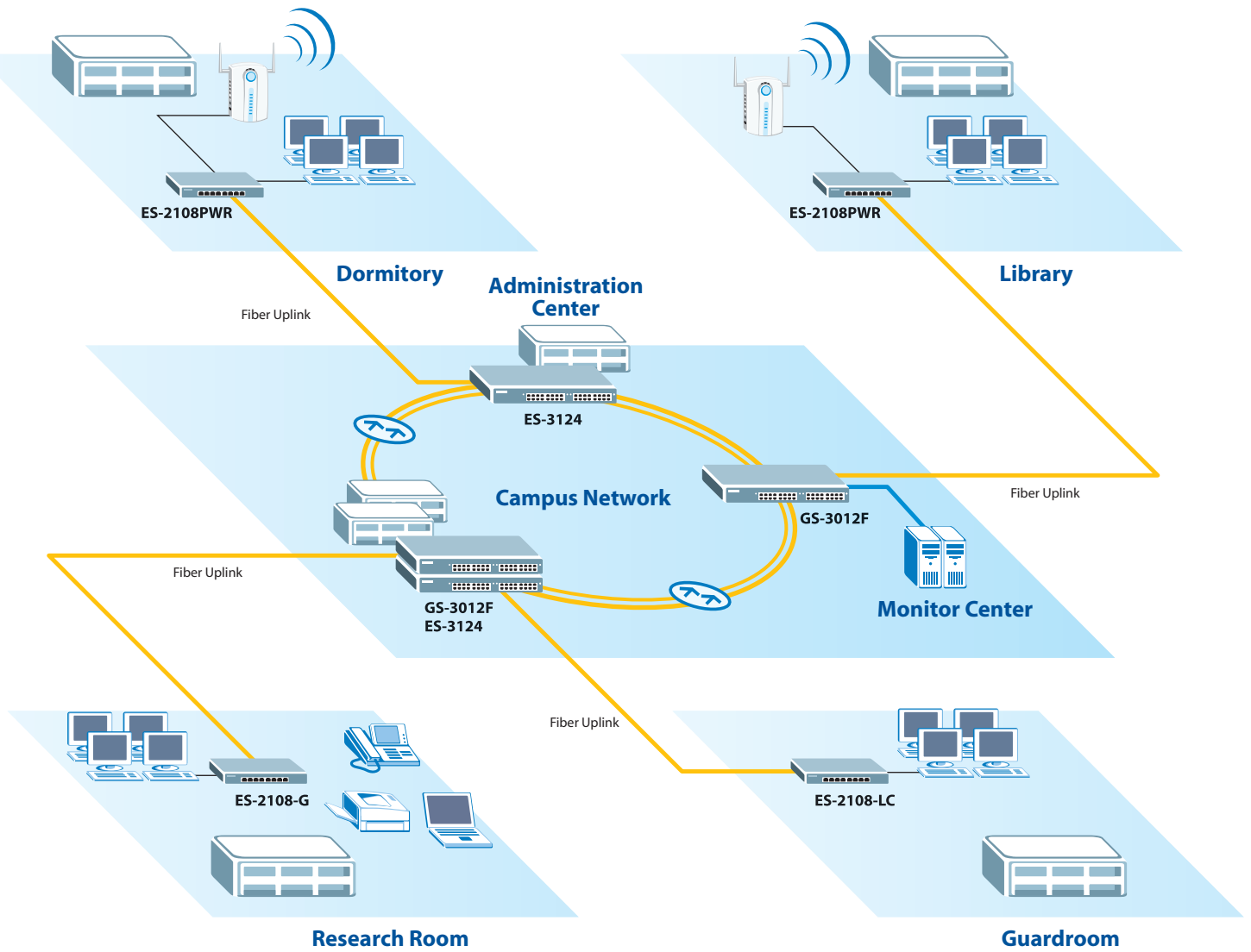
#### ES-2108PWR

- Input voltage of AC: 100-240VAC, 50/60Hz
- Max power rating of AC: 200 Watt

### Environmental Specifications

- Operating temperature: 0°C ~ 45°C
- Storage temperature: -25°C ~ 70°C
- Operating humidity: 10% ~ 90%, non-condensing

## Application Diagram



## Operational Information

### Transceiver (Optional)

Model Name	Optical Receiver Sensitivity	Wavelength	Connector	Transmission Distance vs. Fiber Cable Specification			Operational Ranges	
				62.5um Multi-Mode Fiber	50um Multi-Mode Fiber	9/10um Single-Mode Fiber	Supply Voltage	Max Current
SFP-SX	-17 dBm	850 nm	LC	220 m	550 m	-	3.15 ~ 3.45 V	300 mA
SFP-LX-10	-20 dBm	1310 nm	LC	550 m	550 m	10 km	3.15 ~ 3.45 V	300 mA
SFP-LHX1310-40	-23 dBm	1310 nm	LC	-	-	40 km	3.15 ~ 3.45 V	300 mA
SFP-ZX-80	-24 dBm	1550 nm	LC	-	-	80 km	3.15 ~ 3.45 V	300 mA

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

**Corporate Headquarters**  
**ZyXEL Communications Corp.**  
Tel: +886-3-578-3942  
Fax: +886-3-578-2439  
Email: [sales@zyxel.com.tw](mailto:sales@zyxel.com.tw)  
<http://www.zyxel.com>  
<http://www.zyxel.com.tw>

**ZyXEL Denmark A/S**  
Tel: +45 39 55 07 00  
Fax: +45 39 55 07 07  
Email: [sales@zyxel.dk](mailto:sales@zyxel.dk)  
<http://www.zyxel.dk>

**ZyXEL France SARL**  
Tel: +33 (0)4 72 52 97 97  
Fax: +33 (0)4 72 52 19 20  
Email: [info@zyxel.fr](mailto:info@zyxel.fr)  
<http://www.zyxel.fr>

**ZyXEL Hungary**  
Tel: +36-1-336-1646  
Fax: +36-1-325-9100  
Email: [info@zyxel.hu](mailto:info@zyxel.hu)  
<http://www.zyxel.hu>

**ZyXEL North America**  
Tel: +1-714-632-0882  
Fax: +1-714-632-0858  
Email: [sales@zyxel.com](mailto:sales@zyxel.com)  
<http://www.us.zyxel.com>

**ZyXEL Poland**  
Tel: +48225286603  
Fax: +48225206701  
Email: [info@pl.zyxel.com](mailto:info@pl.zyxel.com)  
<http://www.pl.zyxel.com>

**ZyXEL Spain**  
Tel: +34 902 195 420  
Fax: +34 913 005 345  
Email: [sales@zyxel.es](mailto:sales@zyxel.es)  
<http://www.zyxel.es>

**ZyXEL UK Ltd.**  
Tel: +44 (0) 1344 303044  
Fax: +44 (0) 1344 303034  
Email: [sales@zyxel.co.uk](mailto:sales@zyxel.co.uk)  
<http://www.zyxel.co.uk>

**ZyXEL Czech s.r.o.**  
Tel: +420 241 091 350  
Fax: +420 241 091 359  
Email: [info@zyxel.cz](mailto:info@zyxel.cz)  
<http://www.zyxel.cz>

**ZyXEL Finland Oy**  
Tel: +358-9-4780 8400  
Fax: +358-9-4780 8448  
Email: [sales@zyxel.fi](mailto:sales@zyxel.fi)  
<http://www.zyxel.fi>

**ZyXEL Germany GmbH.**  
Tel: +49 (0) 2405-6909 0  
Fax: +49 (0) 2405-6909 99  
Email: [sales@zyxel.de](mailto:sales@zyxel.de)  
<http://www.zyxel.de>

**ZyXEL Kazakhstan**  
Tel: +7-327-2-590-699  
Fax: +7-327-2-590-689  
Email: [sales@zyxel.kz](mailto:sales@zyxel.kz)  
<http://www.zyxel.kz>

**ZyXEL Norway A/S**  
Tel: +47 22 80 61 80  
Fax: +47 22 80 61 81  
Email: [sales@zyxel.no](mailto:sales@zyxel.no)  
<http://www.zyxel.no>

**ZyXEL Russia**  
Tel: +7 (095) 542-8920  
Fax: +7 (095) 542-8925  
Email: [info@zyxel.ru](mailto:info@zyxel.ru)  
<http://www.zyxel.ru>

**ZyXEL Sweden A/S**  
Tel: +46 (0) 31 744 77 00  
Fax: +46 (0) 31 744 77 01  
Email: [sales@zyxel.se](mailto:sales@zyxel.se)  
<http://www.zyxel.se>

**ZyXEL Ukraine**  
Tel: +380 44 494 49 31  
Fax: +380 44 494 49 32  
Email: [sales@ua.zyxel.com](mailto:sales@ua.zyxel.com)  
<http://www.ua.zyxel.com>

