



Intelligent, High Performance Layer 2 Ethernet Switch for LAN Edge

- 8.8Gbps Non-blocking Switching Architecture
- IEEE 802.1Q VLAN Tagging and Port-based VLAN
- MAC Filtering, Freeze and Specific MAC Forwarding
- Port Security and Port Isolation
- 802.1x Port-based Authentication
- iStacking Clustering Network Management
- CLI & Text-based Configuration for Scripting
- IEEE 802.1w Rapid Spanning Tree Protocol
- IEEE 802.3ad Link Aggregation
- SNMP Support and Port Mirroring



Managed Layer 2 Fast Ethernet Switch

ES-2024A

Benefits

High Performance Wire-Speed Switching

ZyXEL ES-2024A Managed Layer 2 Fast Ethernet Switch is a high performance edge connectivity solution for SMB and campus networks. Based on non-blocking 8.8 Gbps switching architecture, the ES-2024A provides 24-port 10/100Mbps Layer 2 switching capability at wire-speed over existing CAT-5 cabling to desktops. Its two dual-personality interfaces (RJ-45 or SFP) deliver Gigabit connectivity to long-loop reach and high-bandwidth applications.

High-Security Network Edge

ZyXEL ES-2024A features wide range security functions to prevent unauthorized data access. Supported 802.1x authentications restricts unauthorized users from legitimate user data and administrative traffic. Through cooperation with ZyXEL's RADIUS feature advanced access control can be implemented by verifying user name and password for converged networks serving both wired and wireless clients. Besides authentication protection, the ZyXEL ES-2024A supports mechanisms, including MAC filtering, MAC freezing and Specific MAC forwarding, to allow the network administrator to set security policy toward device MAC address. The ES-2024A is designed to offer comprehensive security features for enforcing security policies to the edge.

Robust Network Availability

ZyXEL's ES-2024A supports 802.1w RSTP protocol to enable faster recovery from failed links and helps form a resilient link, which greatly improves uptime and network availability. In addition, implementation of the 802.3ad link aggregation standard can form a multi-port link aggregation to satisfy bandwidth demand flexibly. Meanwhile, link aggregation has the advantage of load sharing and backup links, which enhances availability.

Industry Standard-based Network Management

Managing the ES-2024A is simple through its iStacking™, SNMP, Web, telnet and RS-232 support. In contrast to conventional bounded network management, the ZyXEL ES-2024A demonstrates its power through advanced management capabilities, such as ZyXEL-exclusive iStacking(tm) clustering management technology which allows administrators to manage up to 24 switches with one single IP. The smart capabilities significantly reduce operation cost and add flexibility to maintaining multiple ZyXEL switches. In addition, IT staff may opt for Web, CLI (Command Line Interface) or text-based configuration for their convenience and even encrypt the instructions using SSHv1/v2 and SSL. Thanks to these sophisticated functionalities, the IT staff is able to build a highly secure and efficient corporate network with minimum effort.

Specifications

Standard Compliance

- IEEE 802.3 10Base-T Ethernet
- IEEE 802.3u 100 Base-Tx Ethernet
- IEEE 802.3ab 1000 Base-T Ethernet
- IEEE 802.3z
- 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

- 8.8Gbps non-blocking switching fabric
- Flexible design for both Gigabit copper and Gigabit fiber connectivity
- 1488000pps forwarding rate for 1000Base-T/1000Base-X connectivity, 148800pps forwarding rate for 100Base-TX connectivity
- 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
- IEEE 802.1Q tag-based and port-based VLAN
- Support GVRP, automatic VLAN member registration
- Supports IGMP snooping
- Congestion control on all ports
- Rate Limiting

Resilient Link and Link Aggregation

- IEEE 802.3ad compliant
- Support LACP, static and dynamic link aggregation
- Up to 3 aggregation groups, per group support up to 4 ports.
- IEEE802.1w Rapid Spanning Tree Protocol (RSTP) provides rapid convergence of spanning tree independent of spanning-tree timer

User 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 security, prevent unauthorized client access to the network
- 256 static VLAN, up to 4K dynamic VLAN
- MAC Freeze
- Limit the MAC number per port
- Runder MAC Freeze

Network Administration Security

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

Network Management

- Supports ZyXEL iStacking™, up to 24 switches can be managed by one IP address
- Web-based management
- Telnet CLI
- SNMP v2c
- RS-232c Local console
- IP management: static IP or DHCP client
- RMON four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
- Port mirroring: supports Source/Destination/Both port mirroring

Hardware Specification

- Ports: 24 10/100Base-TX RJ-45 ports with two dual-personality Gigabit interface (RJ-45 or SFP open slots)
- Console: D-Sub 9 pin Female (DCE)

Physical Specification

- Dimensions: 438 (L) x 173 (D) x 44.5 (H) mm
- Weight: 3.1 Kg

Power Requirement

- Power supply
- Input voltage of AC: 100-240VAC, 50/60Hz
 - Max power rating of AC: 21 Watt

Operation Environment

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

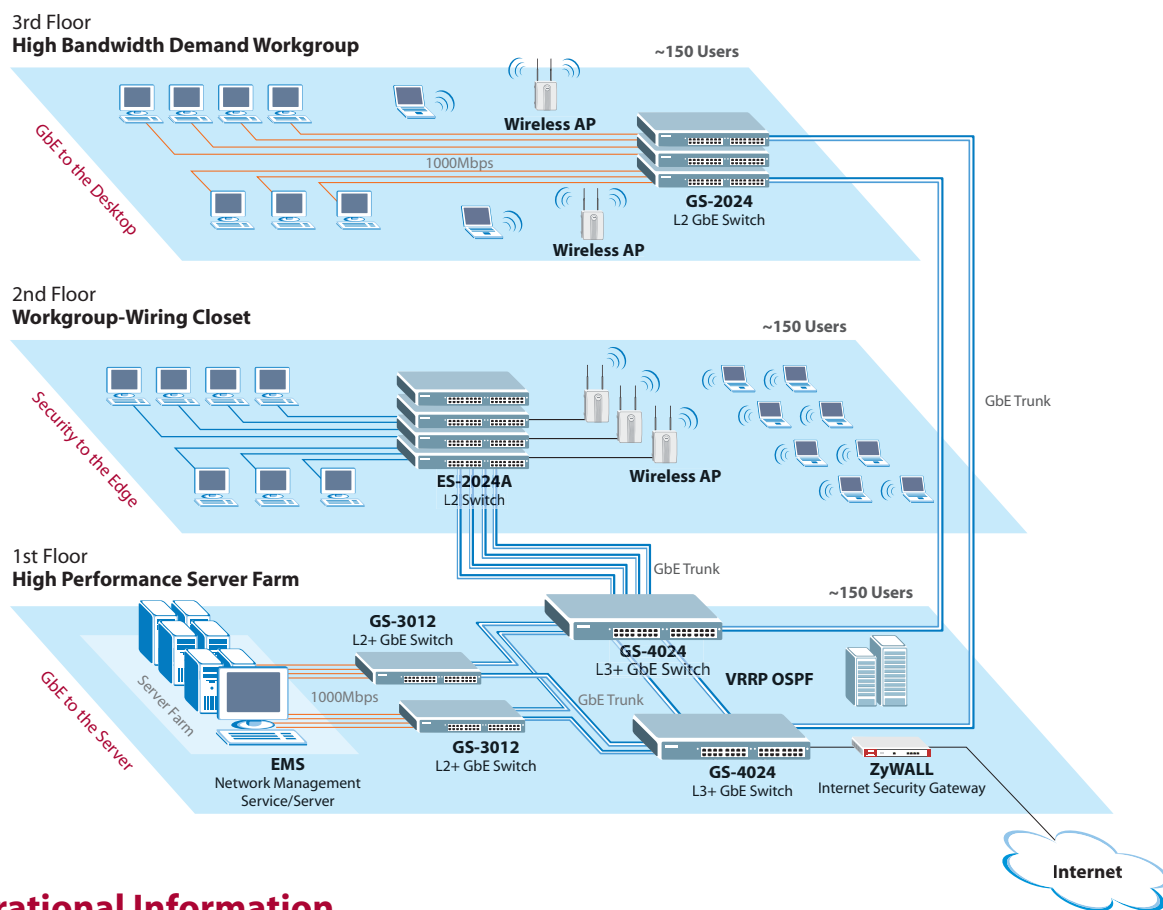
Feature Matrix

Managed Ethernet Switch

Feature/Model	ES-2008 Series	ES-2024A	ES-3124	ES-4024A	GS-2024	GS-3012 GS-3012F	GS-4024 GS-4012F
General Specs							
Layer 3 IP Switching				X			X
Height	1U	1U	1U	1U	1U	1U	1U
No. of 100Base-TX	8 (All Series)	24	24	24			
No. of 100Base-FX	1 x MM (ES-2008-SC) 1 x SM (ES-2008-SC30)						
No. of 1000Base-T	1 (ES-2008-GTP)	2	2	1 x stacking optinoal Module	22	8/4	20/4
Dual Personality GbE Interface (RJ-45 or SFP)		2 x SFP slots (shared)	2	2	2	4/8 x SFP	4/8 x SFP
Switching fabric	3.6Gbps	8.8Gbps	12.8Gbps	12.8Gbps	48Gbps	24Gbps	48Gbps/24Gbps
Routing Protocol							
RIP				X			X
OSPF V2				X			X
DVMRP				X			X
Availability							
802.1D STP	X	X	X	X	X	X	X
802.1w RSTP		X	X	X	X	X	X
802.1s MSTP			*			*	*
VRRP				X			X
BPS Support			X	X		X	X
802.3ad Link Aggregation	X	X	X	X	X	X	X
QoS							
802.1p	X	X	X	X	X	X	X
No. of CoS Per Port	2	4	8	4	4	8	8
Port based Rate Limiting		X	X	X	X	X	X
Policy based Rate Limiting			X	X		X	X
Port based traffic shaping		X	X	X	X	X	X
Broadcast Storm Control	X	X	X	X	X	X	X
IGMP Snooping		X	X		X	X	X
DiffServ (DSCP)			X	X	X	*	X
Security							
802.1x		X	X	X	X	X	X
Port Security	X	X	X	X	X	X	X
MAC Freeze		X	X				*
Static MAC Filtering	X	X	X	X	X	X	X
Limited MAC number per Port			X	X		X	X
IP Filtering			X	X		X	X
TCP/UDP Socket Filtering			X	X		X	X
SSH v1/v2		X	X			*	X
SSL/TLS		X	X			*	X
Port-Based VLAN	X	X	X	X	X	X	X
802.1Q VLAN	256	4k	4k	4k	4k	4k	4k
802.1ad VLAN Stacking			X				X
Management							
SNMP	X	X	X	X	X	X	X
RMON 1.2.3.9	X	X	X	X	X	X	X
Web Management	X	X	X	X	X	X	X
Telnet CLI	X	X	X	X	X	X	X
iStacking		X	X	X	X	X	X
Out-of-band MGMT Port			X		X	X	X
Console Port	X	X	X	X	X	X	X
DHCP Server				X			X
DHCP Relay			X				X
DHCP Client		X	X		X	X	X
NTP		X	X	X	X	X	X
Port Mirroring	X	X	X	X	X	X	X
ACL							
Based on MAC address			X	X		X	X
Based on VLAN			X			X	X
Based on IP address			X	X		X	X
Based on protocol type			X	X		X	X
Based on TCP/UDP port			X	X		X	X
Based on DSCP			X	X		*	X

* Firmware upgradeable for future enhancement

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	850nm	LC	220m	550 m	-	3.15 ~ 3.45 V	300 mA
SFP-LX-10	-20 dBm	1310nm	LC	550m	550 m	10 km	3.15 ~ 3.45 V	300 mA
SFP-LHX1310-40	-23 dBm	1310nm	LC	-	-	40 km	3.15 ~ 3.45 V	300 mA
SFP-ZX-80	-24 dBm	1550nm	LC	-	-	80 km	3.15 ~ 3.45 V	300 mA

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

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