

FGS-2616X L2+ Managed GbE Fiber Switches



Overview

FGS-2616X series L2+ Managed Switch are next-generation Fiber Switch offering full suite of L2 features and additional 10GbE uplink connections, including advanced L3 features such as Static Route that delivers the better cost performance and lower total cost of ownership in Enterprise networks or backbone via fiber or copper connections.

FGS-2616X delivers 12 GbE SFP ports, 2 RJ45 ports, 2 10GbE SFP+ ports and RJ45 Console port, including FGS-2616X, FGS-2616XA and FGS-2616XD with built-in AC and DC dual power supply, pure AC or DC power supply. FGS-2616X provides front access to all data and management ports, and a compact form factor that facilitates desktop, wall-mount, or rack-mount installations.

FGS-2616X series are ideal to deliver management simplicity, better user experience, and lowest total cost of ownership.

Key Features

- L2+ Managed features provide easier manageability, robust security and QoS.
- AC/DC Dual Power Supply
- DHCP Server
- IPv4/IPv6 L3 static route
- IEEE 802.3az EEE Energy Efficient Ethernet standard for green Ethernet

Benefits

- Feature-rich Ethernet Switch for Enterprise-class

The switch delivers advanced functionality in L2+ managed switch including Layer 3 static route, DHCP server, IPv6 support, LLDP, etc. It also has comprehensive security features such as IP source guard, Access Control List guard your network from unauthorized access.

It helps users to build on the market-leading price/performance with L2+ Managed GbE fiber switch, and provide secure, reliable and ease of use for enterprise and SMB deployments.

- Lower Total Cost of Ownership (TCO) with Energy-efficient Design

It is designed to help customers to reduce power consumption and lower the TCO by Energy Efficient Ethernet (IEEE 802.3az) features. It can be used for customers to build a green Ethernet networking environment.

- AC/DC Dual Power Supply

Power failover when power supplies are connected to different circuits. Reduce network operating risk.

Specifications

Port Configuration

Total Ports	SFP (100M/1G)	Uplinks (100M/1G/10G)	Console
16	12	2 SFP+ (1G/10G) 2 RJ45 (100M/1G)	RJ45

Hardware Performance

Forwarding Capacity	Switching Capacity	Mac Table	Jumbo Frames
50.592 Mpps	68 Gbps	32 K	10056 Bytes

Environmental Range

Operating Temperature		Storage Temperature		Altitude	
Fahrenheit	Centigrade	Fahrenheit	Centigrade	Feet	Meters
-4 to 140	-20 to 60	-40 to 185	-40 to 85	< 10000	< 3000

Dimension, Weights, Humidity

Dimension (WxHxD)		Weight		Operating Humidity
Millimeter	Inches	Kilograms	Pounds	
280 x 44 x 134	11 x 1.73 x 5.28	1.0	2.2	10% to 90% non-condensing

Voltage and Frequency

Model Name	AC Input Voltage	DC Input Voltage
FGS-2616X (option)	100-240 VAC, 50-60 Hz	24/48 VDC
FGS-2616XA	100-240 VAC, 50-60 Hz	--
FGS-2616XD (option)	--	24/48 VDC

Certification

Electromagnetic Emissions (EMC)
CE, FCC Part 15 Class A

Software Features

Layer 2 Switching	
Spanning Tree Protocol (STP)	<ul style="list-style-type: none"> • Standard Spanning Tree 802.1d • Rapid Spanning Tree (RSTP) 802.1w • Multiple Spanning Tree (MSTP) 802.1s
Trunking	Link Aggregation Control Protocol (LACP) IEEE 802.3ad <ul style="list-style-type: none"> • Up to 8 groups • Up to 4 ports per group
VLAN	Supports up to 4K VLANs simultaneously (out of 4096 VLAN IDs) <ul style="list-style-type: none"> • Port-based VLAN • 802.1Q tag-based VLAN • MAC-based VLAN • Management VLAN • Private VLAN Edge (PVE) • Q-in-Q (double tag) VLAN • Voice VLAN • GARP VLAN Registration Protocol (GVRP)
DHCP Relay	<ul style="list-style-type: none"> • Relay of DHCP traffic to DHCP server in different VLAN. • Works with DHCP Option 82
IGMP v1/v2/v3 Snooping	IGMP limits bandwidth-intensive multicast traffic to only the requesters. Supports 1024 multicast groups
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router
IGMP Proxy	IGMP snooping with proxy reporting or report suppression actively filters IGMP packets in order to reduce load on the multicast router
MLD v1/v2 Snooping	Delivers IPv6 multicast packets only to the required receivers
Layer 3 Switching	
IPv4 Static Routing	IPv4 Unicast: Static routing
IPv6 Static Routing	IPv6 Unicast: Static routing
Security	
Secure Shell (SSH)	SSH secures Telnet traffic in or out of the switch, SSH v1 and v2 are supported
Secure Sockets Layer (SSL)	SSL encrypts the http traffic, allowing advanced secure access to the browser-based management GUI in the switch
IEEE 802.1X	<ul style="list-style-type: none"> • IEEE802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN, single/multiple host mode and single/multiple sessions • Supports IGMP-RADIUS based 802.1X • Dynamic VLAN assignment
Layer 2 Isolation Private VLAN Edge	PVE (also known as protected ports) provides L2 isolation between clients in the same VLAN. Supports multiple uplinks

Port Security	Locks MAC addresses to ports, and limits the number of learned MAC address
IP Source Guard	Prevents illegal IP address from accessing to specific port in the switch
RADIUS/ TACACS+	Supports RADIUS and TACACS+ authentication. Switch as a client
Storm Control	Prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port
DHCP Snooping	A feature acts as a firewall between untrusted hosts and trusted DHCP servers
ACLs	Supports up to 512 entries. Drop or rate limitation based on: <ul style="list-style-type: none"> • Source and destination MAC, VLAN ID or IP address, protocol, port, • Differentiated services code point (DSCP) / IP precedence • TCP/ UDP source and destination ports • 802.1p priority • Ethernet type • Internet Control Message Protocol (ICMP) packets • TCP flag
Quality of Service	
Hardware Queue	Supports 8 hardware queues
Scheduling	<ul style="list-style-type: none"> • Strict priority and weighted round-robin (WRR) • Queue assignment based on DSCP and class of service
Classification	<ul style="list-style-type: none"> • Port based • 802.1p VLAN priority based • IPv4/IPv6 precedence / DSCP based • Differentiated Services (DiffServ) • Classification and re-marking ACLs
Rate Limiting	<ul style="list-style-type: none"> • Ingress policer • Egress shaping and rate control • Per port
Management	
DHCP Server	Support DHCP server to assign IP to DHCP clients
Zero Touch Upgrade	Upgrade single switch automatically when you get notification
Remote Monitoring (RMON)	Embedded RMON agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to N-1 (N is Switch's Ports) ports can be mirrored to single destination port. A single session is supported.
UPnP	The Universal Plug and Play Forum, an industry group of companies working to enable device-to-device interoperability by promoting Universal Plug and Play
s-Flow	The industry standard for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats

IEEE 802.1ab (LLDP)	<ul style="list-style-type: none"> • Used by network devices for advertising their identities, capabilities, and neighbors on an IEEE 802ab local area network • Support LLDP-MED extensions
Web GUI Interface	Built-in switch configuration utility for browser-based device configuration
CLI	For users to configure/manage switches in command line modes
Dual Image	Independent primary and secondary images for backup while upgrading
SNMP	SNMP version 1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)
Firmware Upgrade	<ul style="list-style-type: none"> • Web browser upgrade (HTTP/ HTTPS) and TFTP • Upgrade through console port as well
NTP	Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched
Other Management	<ul style="list-style-type: none"> • HTTP/HTTPS; SSH • DHCP Client/ DHCPv6 Client • Cable Diagnostics • Ping • Syslog • Telnet Client • IPv6 Management