

24-Port 10/100/1000Mbps with 4 Shared SFP Managed Switch



Cost-effective IPv6 Managed Gigabit Switch Solution for SMB

Nowadays, lots of electronic products or mobile devices can browse the Internet, which means the need of IP Address increases. However, the current IPv4 network infrastructure is not capable enough to provide IP Address to each single users/clients. The situation forces the ISP to build up the **IPv6 (Internet Protocol version 6)** network infrastructure speedily. To fulfill the demand, PLANET releases the **IPv6 management Gigabit Ethernet Switch**, the WGSW-24040 series which supports both IPv4 and IPv6 management functions. It can work with original network structure (IPv4) and also support the new network structure (IPv6) in the future. With easy and friendly management interfaces and plenty of management functions included, the WGSW-24040 series is the best choice for ISP to build the IPv6 FTTx edge service and for SMB to connect with the IPv6 network.

Diversity for Multiple Applications

PLANET WGSW-24040 series is a 19" rack mount sized, **Layer 2 / Layer 4 Full Managed** Gigabit Switch which can handle extremely large amounts of data in a secure topology linking to an Enterprise backbone or high capacity network server with 48Gbps switching fabric. The powerful features of QoS and network security offered by the WGSW-24040 series performs effective data traffic control for ISPs and Enterprises VoIP, video streaming and multicast applications. It is ideal for the remote access layer of campus or enterprise networks and the aggregation layer of IP metropolitan networks.

High Performance

The WGSW-24040 series provides 24 10/100/1000Mbps Gigabit Ethernet ports with 4 shared Gigabit SFP slots. It boasts high performance architecture of switch that is capable to provide the non-blocking switch fabric and wire-speed throughput as high as 48Gbps, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands.

Robust Layer 2 Features

The WGSW-24040 series can be programmed for advanced switch management functions such as dynamic Port link aggregation, **Q-in-Q VLAN**, private VLAN, **Multiple Spanning Tree protocol (MSTP)**, Layer 2 to Layer 4 QoS, bandwidth control and IGMP Snooping. The WGSW-24040 series provides 802.1Q Tagged VLAN, and the VLAN groups allowed will be maximally up to 256. Via aggregation of supporting ports, the WGSW-24040 series allows the operation of a high-speed trunk combining multiple ports. It enables maximum up to 12 groups of 16 ports for trunk and supports fail-over as well.

Enhanced Security

The WGSW-24040 series offers comprehensive **Layer 2 to Layer 4 Access Control List (ACL)** for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. Its protection mechanism also comprises of **802.1x Port-Based** and **MAC-Based** user and device authentication. With the **private VLAN** function, communications between edge ports can be protected to ensure user privacy. The WGSW-24040 series Net Security also provides **DHCP Snooping**, **IP Source Guard** and **Dynamic ARP Inspection** functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. The network administrators can now construct highly secured corporate networks with considerably less time and effort than before.

Excellent Traffic Control

The WGSW-24040 series is loaded with powerful traffic management and QoS features to enhance services offered by telecoms. The QoS features includes wire-speed Layer 4 traffic classifiers and bandwidth limiting that are particularly useful for multi-tenant unit, multi business unit, Telco, or Network Service Provider applications. The WGSW-24040 series also empowers the enterprises to take full advantages of the limited network resources and guarantees the best performance in VoIP and Video conferencing transmission.

Efficient and Secure Management

For efficient management, the WGSW-24040 series Managed Ethernet Switch is equipped with console, WEB and SNMP management interfaces. With the built-in Web-Based management interface, the WGSW-24040 series offers an easy-to-use, platform-independent management and configuration facility. The WGSW-24040 series supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the WGSW-24040 series can be accessed via Telnet and the console port. Moreover, the WGSW-24040 series offers secure remote management by supporting **SSH**, **SSL** and **SNMPv3** connection which encrypt the packet content at each session.

Flexibility and Extension Solution

The four mini-GBIC slots built in the WGSW-24040 series support Dual-Speed, **100Base-FX** and **1000Base-SX/LX** SFP (Small Form-factor Pluggable) fiber-optic modules, that means, the administrator now can flexibly choose the suitable SFP transceiver according to the transmission distance or the transmission speed required. The distance can be extended from 550 meters (Multi-Mode fiber) up to above 10/50/70/120 kilometers (Single-Mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

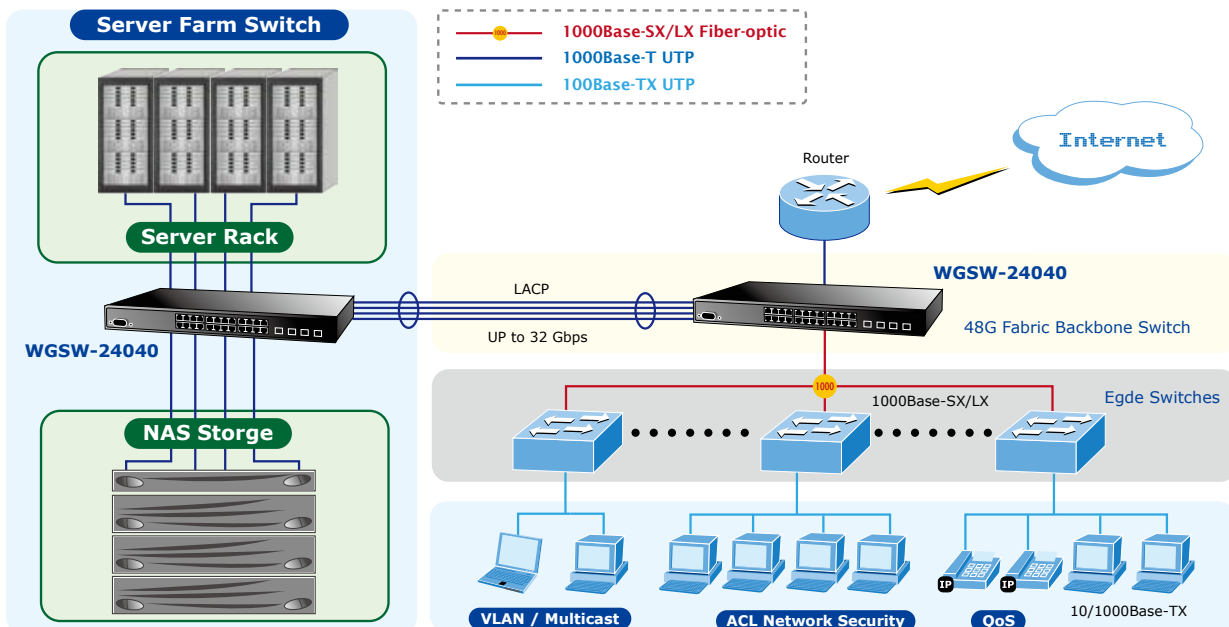
AC / DC Power Redundant to Ensure Continuous Operation (WGSW-24040R)

Particularly for the WGSW-24040R, it is equipped with one 100~240V AC power supply unit and one DC -48V connector to provide an enhanced reliable and scalable redundant power supply installation. The continuous power system is specifically designed to fulfill the demands of high tech facilities requiring the highest power integrity. The -48V DC power supply implemented makes the WGSW-24040R the telecom level device that can be located at the electronic room.

APPLICATIONS

High Performance Backbone / Server Farm Switch

Gigabit Ethernet supported equipments have become the fundamental unit of Enterprises and Network servers. With up to 48 Gigabits per second of non-blocking switch fabric, the WGSW-24040 series can easily provide the high bandwidth required from now on. It can easily provide a local high bandwidth Gigabit Ethernet network for backbone of enterprises or Telecoms. With its port trunking function, a 16 GB fat pipe is provided to connect to the backbone if required. It is ideal to be used as a server farm switch connecting servers.,The WGSW-24040 series can offer the uplink to the edge network through Gigabit Ethernet LX/SX SFP modules with the four SFP ports.

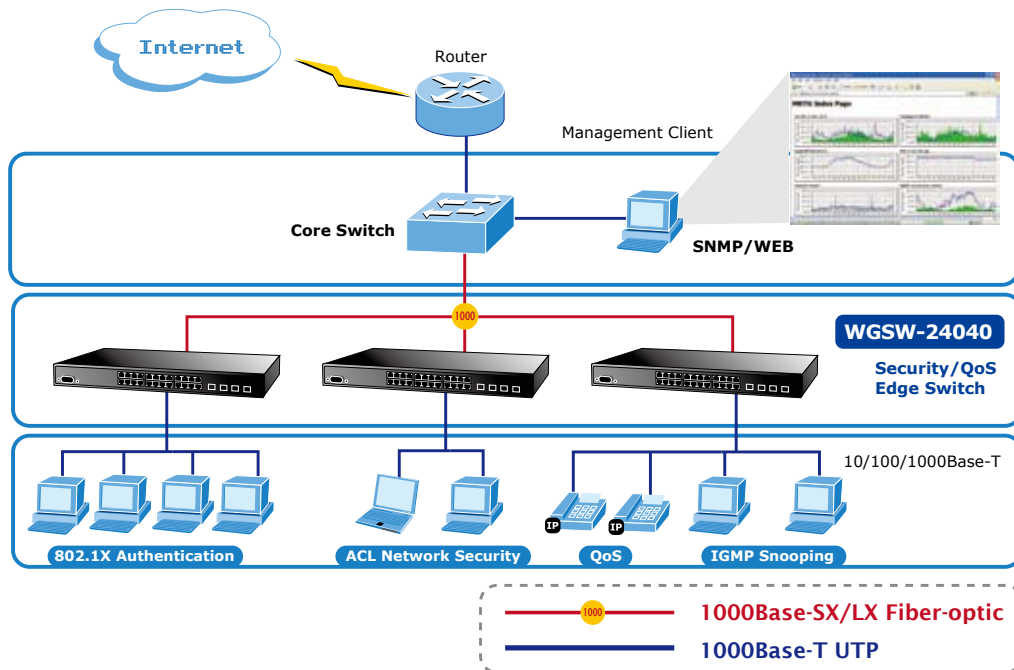


Department / Edge Security and QoS Switch

The WGSW-24040 series connects up to 24 high speed workstations in the Ethernet environment, in which its two SFP Mini-GBIC interfaces uplink to a department backbone. Moreover, the Switch provides 16 Gigabit per second switch fabric and high bandwidth for backbone connection. The WGSW-24040 series improves the network efficiency and safeguards the network clients with the powerful features:

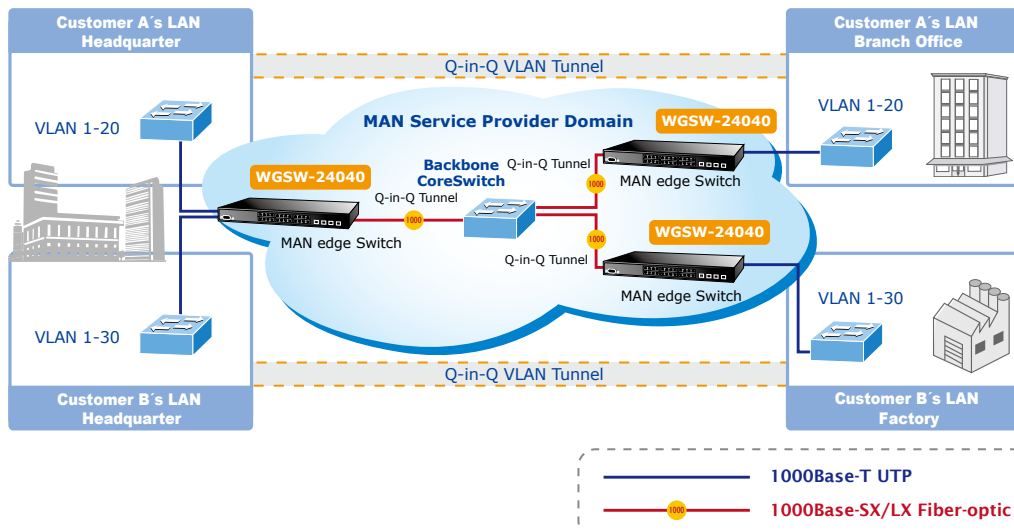
- Layer 2 to Layer 4 security
- IPv6 / IPv4 management
- QoS
- 802.1x Port-Based and MAC-Based network access authentication security
- Multicast IGMP Snooping

The advanced functionality of the WGSW-24040 series eliminates traditional issues associated with the use of Ethernet. Users can be separated with advanced VLAN functionality to enhance security. It makes the WGSW-24040 series one of the best and most cost-effective switch solutions for SMB.



FTTX / MAN Application

The WGSW-24040 series applies the **double tag VLAN (Q-in-Q)** technology to provide low cost and easy operation for service providers carrying traffic for multiple customers across their networks. It features SNMPv3 and RMON Groups. The **SNMPv3** security structure consists of security models, with each model having its own security levels. With four Dual-Speed SFP slots built in, the deployment distance of the WGSW-24040 series can be extended from 550 meters (Multi-mode fiber) up to above 10/50/70/120 kilometers (Single-mode fiber), which provides a high-performance edge service for FTTX solutions. To build a network solution of FTTH (Fiber to the Home) or FTTC (Fiber to the Curb) for ISPs, and FTTB (Fiber to the Building) for enterprises, the various distances of SFP (small-form factor) and Bidi (WDM) transceivers are optional for customers' choices. For security and various applications, the 24 Gigabit ports of the WGSW-24040 series can be configured with VLAN settings and connect to different units, offices, flowers, houses and departments.



KEY FEATURES

PHYSICAL PORT

- **24-Port 10/100/1000Base-T** Gigabit RJ-45 copper
- **4 100/1000Base-X** mini-GBIC/SFP slots, shared with Port-21 to Port-24
- RS-232 DB9 console interface for Switch basic management and setup

LAYER 2 FEATURES

- Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
- High performance of Store-and-Forward architecture and runt/ CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support:
 - Broadcast / Multicast / Unknown-Unicast
- Supports **VLAN**
 - IEEE 802.1Q Tagged VLAN
 - Up to 256 VLANs groups, out of 4041 VLAN IDs
 - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
 - Private VLAN Edge (PVE)
- Supports **Spanning Tree Protocol**
 - STP, IEEE 802.1D Spanning Tree Protocol
 - RSTP, IEEE 802.1w Rapid Spanning Tree Protocol
 - MSTP, IEEE 802.1s Multiple Spanning Tree Protocol, spanning tree by VLAN
 - BPDU Guard
- Supports Link Aggregation
 - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
 - Cisco ether-channel (Static Trunk)
 - Maximum 12 trunk groups, up to 16 ports per trunk group
 - Up to 32Gbps bandwidth (Duplex Mode)
- Provide Port Mirror (many-to-1)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

QUALITY OF SERVICE

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 4 priority queues on all switch ports
- Traffic classification:
 - IEEE 802.1p CoS
 - TOS / DSCP / IP Precedence of IPv4/IPv6 packets
 - IP TCP/UDP port number
 - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing policies on the switch port
- QoS Control List Wizard makes QoS creation and configuration easier and more quickly
- DSCP remarking
- Voice VLAN

MULTICAST

- Supports IGMP Snooping v1, v2 and v3
- Querier mode support
- IGMP Snooping port filtering and throttling
- Multicast VLAN Registration (MVR)

SECURITY

- IEEE 802.1x Port-Based / MAC-Based network access authentication
- Built-in RADIUS client to co-operate with the RADIUS servers
- TACACS+ login users access authentication
- RADIUS / TACACS+ users access authentication
- IP-Based Access Control List (ACL)
- MAC-Based Access Control List
- Source MAC / IP address binding
- **DHCP Snooping** to filter un-trusted DHCP messages
- **Dynamic ARP Inspection** discards ARP packets with invalid MAC address to IP address binding
- **IP Source Guard** prevents IP spoofing attacks
- Auto DoS rule to defend DoS attack
- IP address access management to prevent unauthorized intruder

MANAGEMENT

- Switch Management Interfaces
 - Console / Telnet Command Line Interface
 - Web switch management
 - SNMP v1, v2c, and v3 switch management
 - SSH / SSL secure access
- Four RMON groups (history, statistics, alarms, and events)
- **IPv6** IP Address / NTP / DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload/download via HTTP / TFTP
- DHCP Relay and Relay Option 82
- User Privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) Protocol
- Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- Reset button for system reboot or reset to factory default
- PLANET Smart Discovery Utility for deploy management
- ICMPv6

REDUNDANT POWER SYSTEM (WGSW-24040R)

- 100~240V AC / -48V DC Dual power redundant
- Active-active redundant power failure protection
- Backup of catastrophic power failure on one supply

SPECIFICATION

Product	24-Port 10/100/1000Mbps with 4 Shared SFP Managed Switch	
Model	WGSW-24040	WGSW-24040R
Hardware Specification		
Copper Ports	24 10/ 100/1000Base-T RJ-45 Auto-MDI/MDI-X ports	
SFP/mini-GBIC Slots	4 1000Base-SX/LX/BX SFP interfaces, shared with Port 21 to Port 24 Compatible with 100Base-FX SFP	
Console	1 x RS-232 DB9 serial port (115200, 8, N, 1)	
Switch Processing Scheme	Store-and-Forward	
Switch Fabric	48Gbps / non-blocking	
Address Table	8K entries	
Share Data Buffer	1392 kilobytes	
Flow Control	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex	
Jumbo Frame	10Kbytes	
LED	Power, 1000 Link/Act, 100 Link/Act, SFP Link	
Reset Button	< 5 sec: System reboot > 5 sec: Factory Default	
Dimension (W x D x H)	440 x 200 x 44.5 mm, 1U height	
Weight	3.3 kg	3.4 kg
Power Consumption	Max. 30 watts / 102 BTU	
Power Requirement	AC 100~240V, 50/60Hz	100~240V AC, 50/60Hz -48V DC @ 0.6A, Range: -30 ~ -60V
ESD Protection	6KV DC	
Layer 2 Function		
Basic Management Interfaces	Console, Telnet, Web Browser, SNMPv1, v2c	
Secure Management Interfaces	SSH, SSL, SNMP v3	
Port Configuration	Port disable / enable Auto-Negotiation 10/100/1000Mbps full and half duplex mode selection Flow Control disable / enable Bandwidth control on each port Power saving mode control	
Port Status	Display each port's speed duplex mode, link status, Flow control status Auto negotiation status, trunk status	
VLAN	802.1Q Tagged Based VLAN Port-Based VLAN Q-in-Q Private VLAN Edge (PVE) Up to 256 VLAN groups, out of 4094 VLAN IDs	
Port Trunking	IEEE 802.3ad LACP / Static Trunk Support 12 groups of 16-Port trunk support	
QoS	Traffic classification based, Strict priority and WRR 4-level priority for switching - Port Number - 802.1p priority - 802.1Q VLAN tag DSCP/TOS field in IP Packet Policy-Based QoS	
IGMP Snooping	IGMP (v1/v2) Snooping, up to 255 multicast Groups IGMP Querier mode support	
Access Control List	IP-Based ACL / MAC-Based ACL Up to 256 entries	
SNMP MIBs	RFC-1213 MIB-II IF-MIB RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB RFC-2819 RMON MIB (Group 1) RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-2933 IGMP-STD-MIB () RFC3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB	

Standards Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Safety	UL, cUL (For WGSW-24040)
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/100Base-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x Flow Control and Back pressure IEEE 802.3ad Port trunk with LACP IEEE 802.1D Spanning tree protocol IEEE 802.1w Rapid spanning tree protocol IEEE 802.1s Multiple spanning tree protocol IEEE 802.1p Class of service IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP version 1 RFC 2236 IGMP version 2
Environment	
Operating	Temperature: 0 ~ 50 Degree C Relative Humidity: 20 ~ 95% (non-condensing)
Storage	Temperature: -40 ~ 70 Degree C Relative Humidity: 20 ~ 95% (non-condensing)

ORDERING INFORMATION

WGSW-24040	24-Port 10/100/1000Mbps with 4 Shared SFP Managed Switch
WGSW-24040R	24-Port 10/100/1000Mbps with 4 Shared SFP Managed Switch / 48V DC Redundant Power

RELATIVE PRODUCT

SGSW-24040	24-Port 10/100/1000Mbps with 4 Shared SFP Managed Stackable Switch
SGSW-24040R	24-Port 10/100/1000Mbps with 4 Shared SFP Managed Stackable Switch / 48V DC Redundant Power

AVAILABLE MODULES FOR WGSW-24040 / WGSW-24040R

MGB-GT	SFP-Port 1000Base-T Module
MGB-SX	SFP-Port 1000Base-SX mini-GBIC module
MGB-LX	SFP-Port 1000Base-LX mini-GBIC module
MGB-L30	SFP-Port 1000Base-LX mini-GBIC module-30km
MGB-L50	SFP-Port 1000Base-LX mini-GBIC module-50km
MGB-L70	SFP-Port 1000Base-LX mini-GBIC module-70km
MGB-L120	SFP-Port 1000Base-LX mini-GBIC module-120km
MGB-LA10	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-10km
MGB-LB10	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-10km
MGB-LA20	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-20km
MGB-LB20	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-20km
MGB-LA40	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-40km
MGB-LB40	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-40km
MFB-FX	SFP-Port 100Base-FX Transceiver (1310nm) -2km
MFB-F20	SFP-Port 100Base-FX Transceiver (1310nm) - 20km
MFB-F40	SFP-Port 100Base-FX Transceiver (1310nm) - 40km
MFB-F60	SFP-Port 100Base-FX Transceiver (1310nm) - 60km
MFB-FA20	SFP-Port 100Base-BX Transceiver (WDM,TX:1310nm) -20km
MFB-FB20	SFP-Port 100Base-BX Transceiver (WDM,TX:1550nm) -20km