

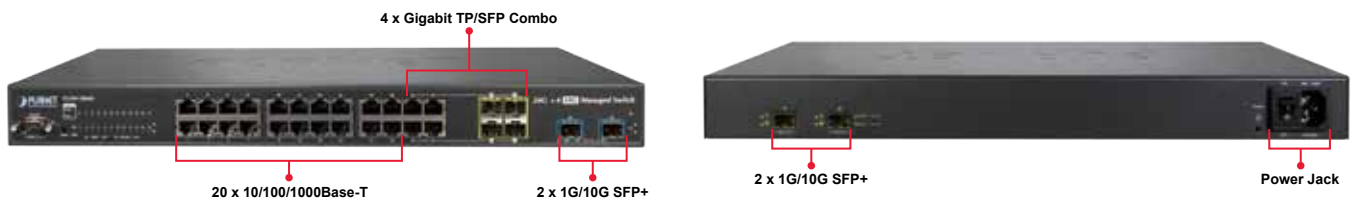
24-Port 10/100/1000Mbps with 4 Shared SFP + 4-Port 10G SFP+ Managed Switch

Cost-effective 10Gbps Uplink Capacitated Managed Switch Solution for SMB

The XGSW-28040 is PLANET's first Layer 2 IPv6 / IPv4 management Gigabit switch built in with four 10Gbps uplink slots to greatly support SMB network achieve 10Gbps high performance in a cost-effective way because 10GbE interface usually could be available in Layer 3 Switch but Layer 3 Switch could be too expensive to SMB. The four 10Gbps SFP+ interfaces in the XGSW-28040 is in the same size as commonly seen Gigabit SFP slot and also is the main standard for 10Gbps transceiver. The XGSW-28040 can work with PLANET ENW-9800



Dual 10Gbps SFP+ PCI Express Server Adapter series or the third brand 10Gbps server adapter to help SMB build up 10Gbps Ethernet network providing 10Gbps NAS (Network Attached Storage) or heavy transmission of video streaming service at affordable price. Each of the SFP+ slot supports **Dual-Speed, 10GBase-SR/LR or 1000Base-SX/LX**; that means, the administrator now can flexibly choose the suitable SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the network efficiently.



IPv6 Managed Gigabit Switch Solution for SMB

Nowadays, lots of electronic products or mobile devices can access to 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 XGSW-28040 which can work with original IPv4 network structure and also support IPv6 network structure in the future. With easy and friendly management interfaces and plenty of management functions included, the XGSW-28040 is the best choice for ISP to build the IPv6 FTTx edge service and for SMB to connect with the IPv6 network.

High Performance

The XGSW-28040 provides 24 10/100/1000Mbps Gigabit Ethernet ports with 4 shared 100/1000X SFP slots plus 4 10G/1G SFP+ slots. It boasts high performance architecture of switch that is capable for providing the non-blocking switch fabric and wire-speed throughput as high as 128Gbps, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands.

Robust Layer 2 Features

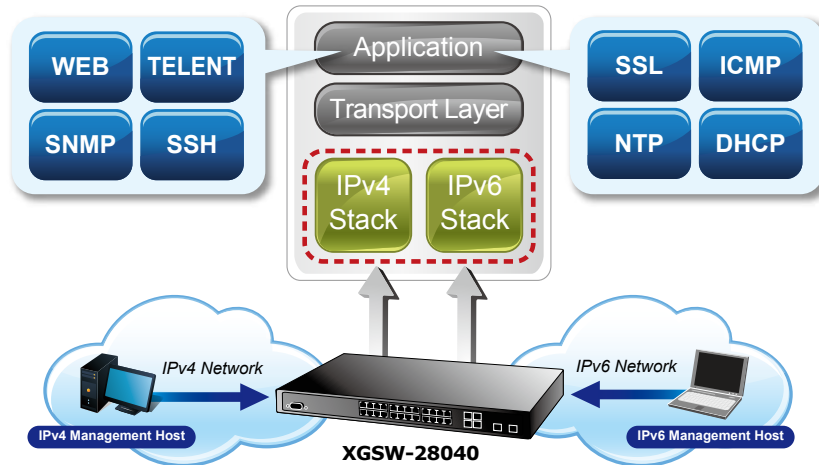
The XGSW-28040 can be programmed for advanced switch management functions such as dynamic Port link aggregation, Q-in-Q VLAN, private VLAN, Rapid Spanning Tree protocol, Layer 2 to Layer 4 QoS, bandwidth control and IGMP/MLD Snooping. In addition, it provides 802.1Q Tagged VLAN, and allows maximally up to 255 VLAN groups. Via aggregation of supporting ports, the XGSW-28040 allows the operation of a high-speed trunk combining multiple ports. It enables maximum up to 14 groups of 8 ports for trunking, and supports fail-over as well.

Excellent Traffic Control

The XGSW-28040 is loaded with powerful traffic management and QoS features to enhance connection services by SMB. The QoS features include wire-speed Layer 4 traffic classifiers and bandwidth limiting that are particular useful for multi-tenant unit, multi business unit, Telco, or Network Service Provide applications. It 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 Management

For efficient management, the XGSW-28040 Managed Ethernet Switch is equipped with console, WEB and SNMP management interfaces. With the built-in Web-based management interface, the XGSW-28040 offers an easy-to-use, platform-independent management and configuration facility. It also supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the XGSW-28040 can be accessed via Telnet and the console port. Moreover, the XGSW-28040 enables secure remote management by supporting SNMP v3 connection which encrypts the packet content at each session.

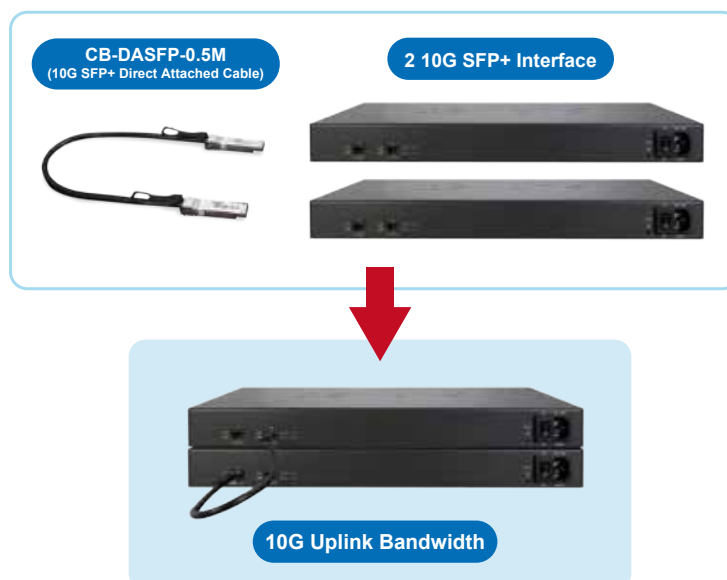


Powerful Security

The XGSW-28040 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, communication between edge ports can be prevented to ensure user privacy. The network administrators can now construct highly secured corporate networks with considerably less time and effort than before.

Flexibility and Extension Solution

The four mini-GBIC SFP slots built in the XGSW-28040 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 to extend the network efficiently. 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 distribution SMB.



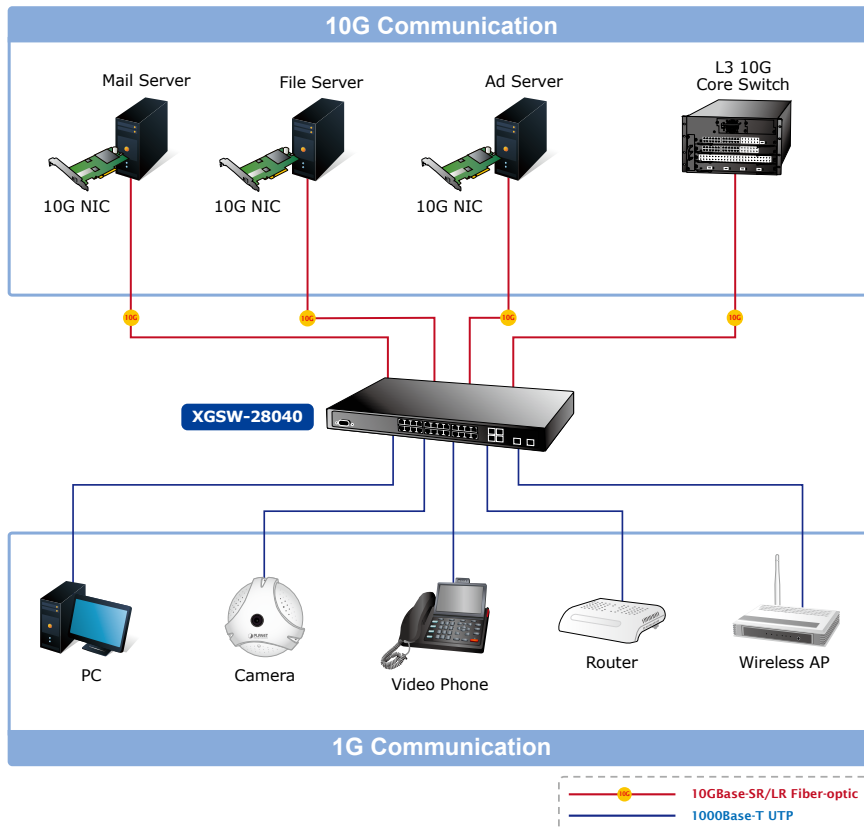
APPLICATIONS

Excellent Solution for Core / Data Center Security and QoS Switch

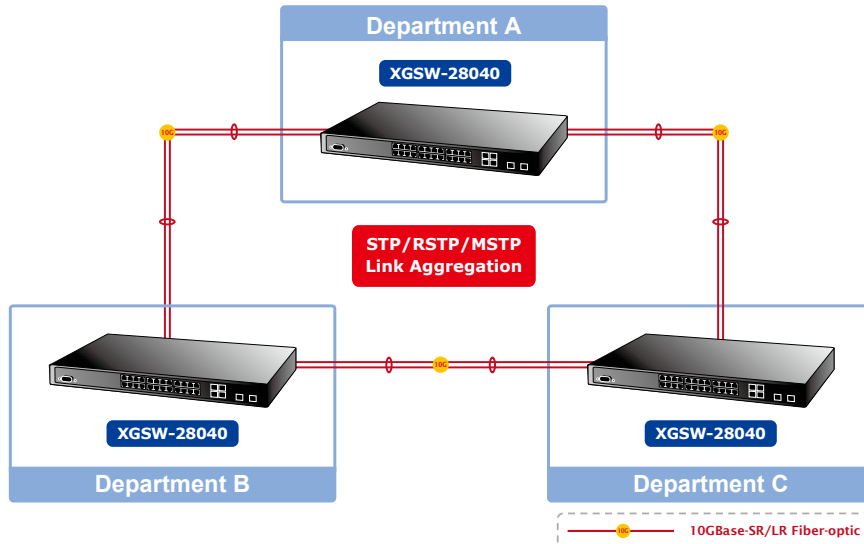
The XGSW-28040 performs 128 Gigabits per second non-blocking switch fabric so it can easily provide a local 10Gbps high bandwidth Ethernet network for backbone of your department. With the four built-in SFP+ ports, the XGSW-28040 provides the uplink to the backbone network through the 10G Ethernet LR/ SR SFP+ modules. It further improves the network efficiency and protects the network clients by offering the security and QoS features.

By means of improving the technology of Optical Fiber Ethernet with highly-flexible, highly-extendable and easy-installation features, the XGSW-28040 offers up to 10Gbps data exchange speed via Optical Fiber interface and the transmission distance can extend to 10km. The XGSW-28040 is the ideal solution for SMB to build redundant connection and establish high bandwidth for server farm.

High Performance Server Service



High Bandwidth Redundant Connection



KEY FEATURES

PHYSICAL PORT

- **24-Port 10/100/1000Base-T** RJ-45 copper
- **4 100/1000Base-X mini-GBIC/SFP** slots, shared with Port-21 to Port-24 compatible with 100Base-FX SFP
- **4 10GBase-SR/LR SFP+** slots, compatible with 1000Base-SX/LX/BX SFP
- RS-232 DB9 console interface for 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 / Unicast
- Supports **VLAN**
 - IEEE 802.1Q Tagged VLAN
 - Up to 256 VLANs groups, out of 4095 VLAN IDs
 - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
 - Private VLAN Edge (PVE)
 - Protocol-Based VLAN
 - MAC-Based VLAN
 - Voice VLAN
- 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
 - 802.3ad Link Aggregation Control Protocol (LACP)
 - Cisco ether-channel (Static Trunk)
 - Maximum 14 trunk groups, up to 8 ports per trunk group
 - Up to 16Gbps bandwidth (Duplex Mode)
- Provides Port Mirror (many-to-1)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops

QUALITY OF SERVICE

- 8 priority queues on all switch ports
- Traffic classification
 - IEEE 802.1p CoS
 - IP TOS / DSCP / IP Precedence
 - IP TCP/UDP port number
 - Typical network application

- Strict priority and Weighted Round Robin (WRR) CoS policies
- Traffic-policing policies on the switch port
- DSCP remarking

MULTICAST

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

SECURITY

- IEEE 802.1x Port-Based / MAC-Based network access authentication
- Built-in RADIUS client to cooperate with the RADIUS servers
- 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 untrusted DHCP messages
- **Dynamic ARP Inspection** discards ARP packets with invalid MAC address to IP address binding
- **IP Source Guard** prevents IP spoofing attacks
- 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 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
- DHCP 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

SPECIFICATION

Product	24-Port 10/100/1000Mbps with 4 Shared SFP + 4-Port 10G SFP+ Managed Switch
Model	XGSW-28040
Hardware Specification	
Copper Ports	24 10/100/1000Base-T RJ-45 Auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	4 100/1000Base-X SFP interfaces, shared with Port-21 to Port-24 Compatible with 100Base-FX SFP
SFP+ Slots	4 10GBase-SR/LR SFP+ interface (Port-25 to Port-28) Compatible with 1000Base-SX/LX/BX SFP
Console	1 x RS-232 DB9 serial port (115200, 8, N, 1)
Switch Architecture	Store-and-Forward
Switch Fabric	128Gbps / non-blocking
Throughput	95Mpps@64Bytes
Address Table	16K entries, automatic source address learning and ageing
Share Data Buffer	1392 kilobytes
Flow Control	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex
Jumbo Frame	10Kbytes
Reset Button	< 5 sec: System reboot > 5 sec: Factory Default
Dimension (W x D x H)	440 x 200 x 44.5 mm, 1U high
Weight	2840g
LED	Power, System, FAN 1 & 2 Alert, 1000 Link/Act and 10/100 Link/Act for per Gigabit port, 10G Link/Act and 1G Link/Act for per 10G port
Power Requirement	100~240V AC, 50/60Hz
Power Consumption	Max 45.3 watts / 154.7BTU
ESD Protection	6KV DC
Layer 2 Function	
Basic Management Interfaces	Console, Telnet, Web Browser, SNMP v1, 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
Port Status	Display each port's speed duplex mode, link status, Flow control status, Auto negotiation status, trunk status
Port Mirroring	TX / RX / Both Many-to-1 monitor
VLAN	802.1Q Tagged Based VLAN, up to 256 VLAN groups Q-in-Q tunneling Private VLAN Edge (PVE) MAC-Based VLAN Protocol-Based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 256 VLAN groups, out of 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP / Static Trunk Support 14 groups of 8-Port trunk support
QoS	Traffic classification based, Strict priority and WRR 8-Level priority for switching - Port Number - 802.1p priority - 802.1Q VLAN tag - DSCP/TOS field in IP Packet
IGMP Snooping	IGMP (v1/v2/v3) Snooping, up to 255 multicast Groups IGMP Querier mode support
MLD Snooping	MLD (v1/v2) Snooping, up to 255 multicast Groups MLD 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, 2, 3 and 9)	RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-2933 IGMP-STD-MIB RFC-3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB
Standards Conformance		
Regulation Compliance	FCC Part 15 Class A, CE	
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 802.3ae 10Gb/s Ethernet 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 RFC 3376 IGMP version 3 RFC 2710 MLD version 1 RFC 3810 MLD version 2
Environment		
Operating	Temperature: 0 ~ 50 Degree C Relative Humidity: 5 ~ 95% (non-condensing)	
Storage	Temperature: -20 ~ 70 Degree C Relative Humidity: 5 ~ 95% (non-condensing)	

ORDERING INFORMATION

XGSW-28040	24-Port 10/100/1000Mbps with 4 Shared SFP + 4-Port 10G SFP+ Managed Switch
-------------------	--

AVAILABLE 10GBASE-X MODULES FOR XGSW-28040

MTB-LR	SFP+ Port 10GBase-LR mini-GBIC module (Single mode / 1310nm / max. 10km)
MTB-SR	SFP+ Port 10GBase-SR mini-GBIC Module (Multi-mode / 850nm / max. 300m)
CB-DASFP-0.5M	10G SFP+ Direct Attached Copper Cable - 0.5M

AVAILABLE 1000BASE-X MODULES FOR XGSW-28040

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

AVAILABLE 100BASE-X MODULES FOR XGSW-28040

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

10G SERVER ADAPTER

ENW-9801	10Gbps SFP+ PCI Express Server Adapter
ENW-9802	Dual 10Gbps - CX4 and SFP+ PCI Express Server Adapter