

4-slot Multi-layer IPv6/IPv4 Routing Chassis Switch

XGS3-42000R



Outlines

- ◆ Product Overview
- ◆ Product Benefits
- ◆ Product Features
- ◆ Applications
- ◆ Appendix



Product Overview



Product Overview

Incredibly Huge Bandwidth!

60 x 10G SFP+

156 SFP

6 x 40G QSFP+

160 TP

Total 1728 Gbps



560Gbps Each
(XG53-S20X2Q)

Product Overview

◆ Chassis-based IPv6/IPv4 10G Routing Switch

Redundant
Power System

Redundant
Management
System

High Performance

High Density

Flexible

Scalable

Reliable

160
10/100/1000
Copper Ports



60 x 10G
SFP+ Ports

6 x 40G
QSFP+ Ports

156 x Gigabit
Fiber Ports

Product Overview

◆ Difference between Version 1 and 2

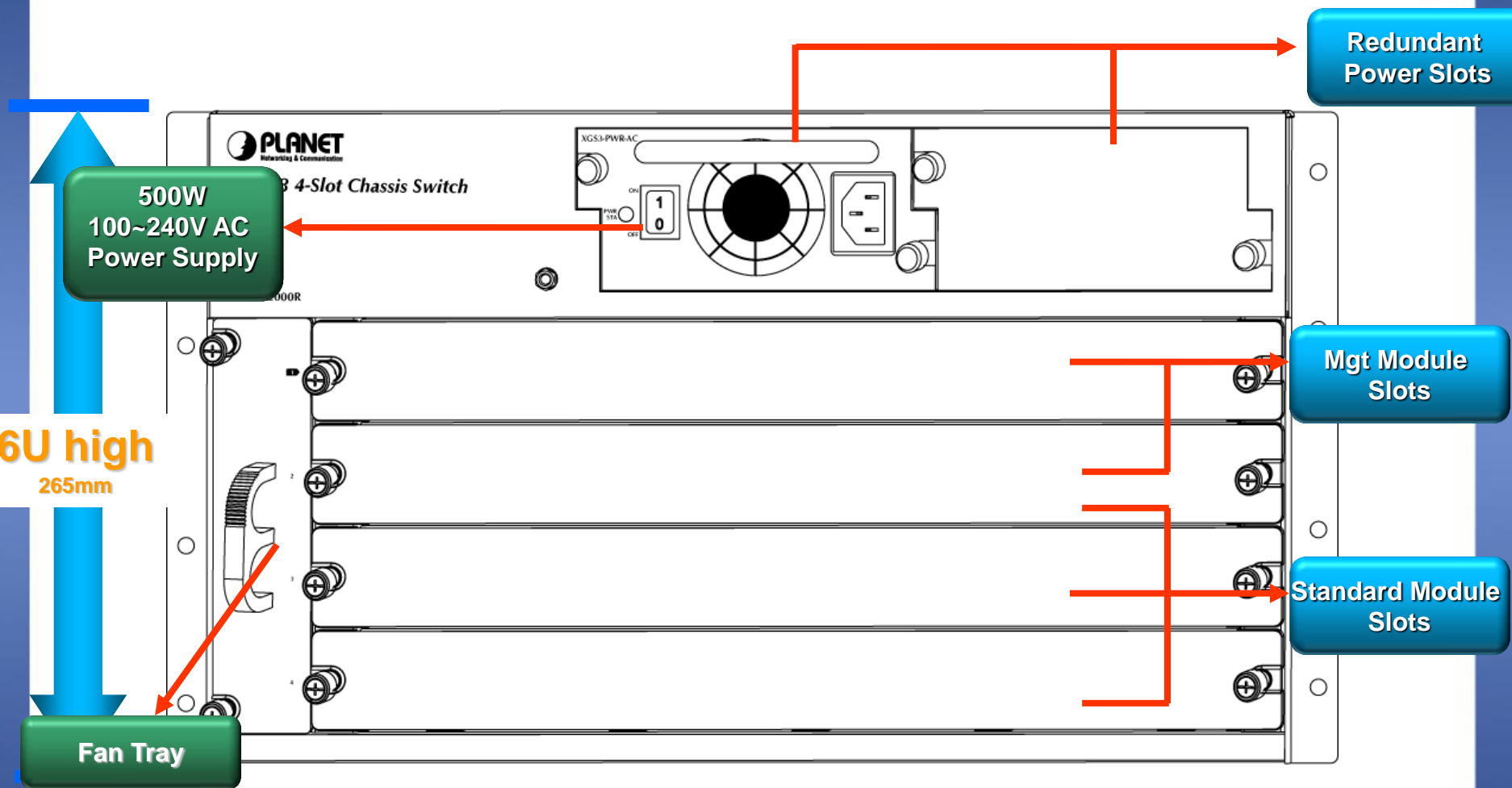
Model	XGS3-42000R (v2)	XGS3-42000R (v1)
Photo		
10/100/1000T RJ45	160	168
100/1000X SFP	156	48 (Only 1000X)
1G/10G SFP+	60	13 (XFP)(Only 10G)
40G QSFP+	6	---
USB Port	1 x Backup	---
Switch Capacity	432Gbps	376Gbps
Power Input	2 AC (Each 500 watts)	2 AC (Each 400 watts)

Hardware Introduction



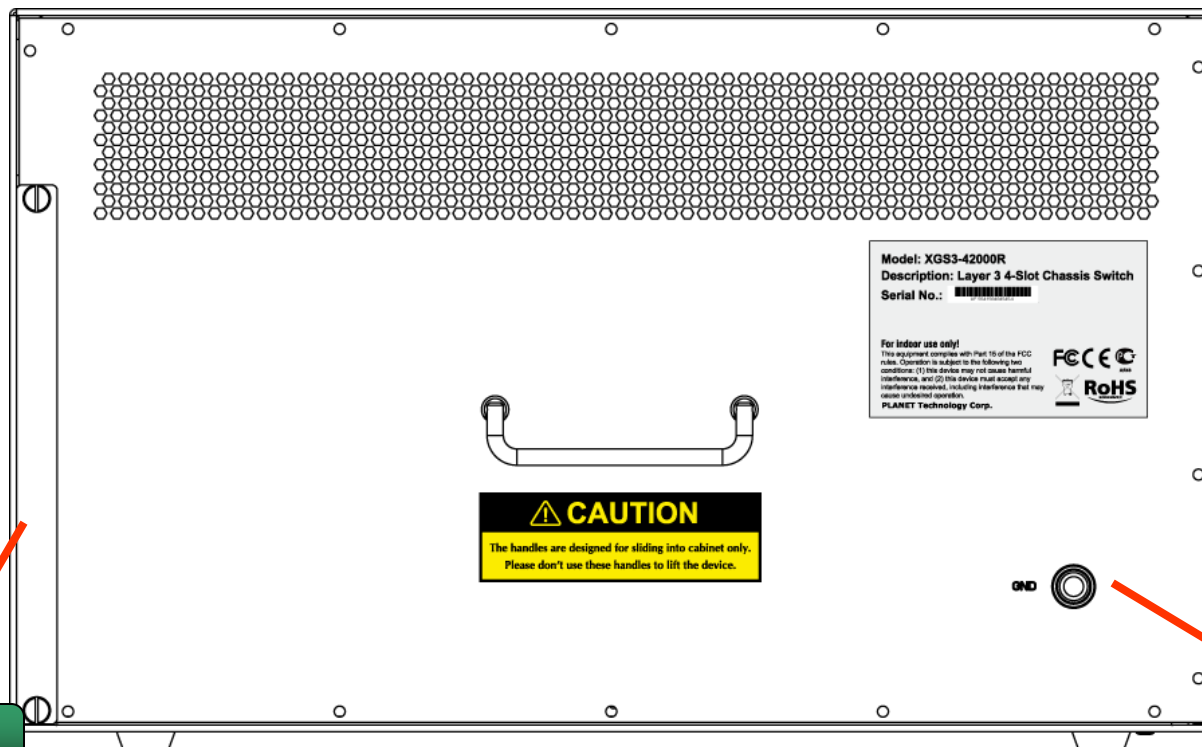
Hardware Introduction -- The Chassis

◆ Front Panel of XGS3-42000R



Hardware Introduction -- The Chassis

◆ Rear Panel of XGS3-42000R



Dust Gauze

Grounding






Hardware Introduction – Optional Modules

◆ Management Modules

- ✓ Drive all the management features of the chassis

◆ Standard Modules

- ✓ Provide port density and port flexibility of the chassis for different network applications

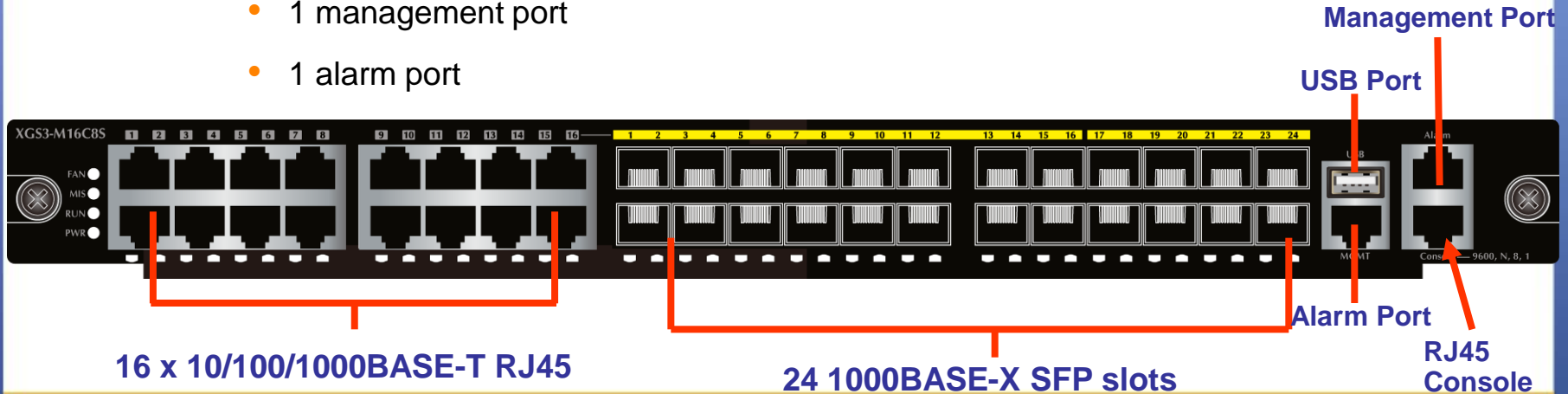
Module		Type	10/100/1000 BASE-T	100/1000 BASE-X SFP	1/10G BASE-X SFP+	40G BASE-X QSFP+
XGS3-M16C8S		Management	16	24 (16 Shared)	--	--
XGS3-S16C8S4X		Standard	16	24 (16 Shared)	4	4
XGS3-S48G		Standard	48	--	--	--
XGS3-S20X2Q		Standard	--	--	20	2
XGS3-S44S4X		Standard	--	44	4	--

Hardware Introduction – Optional Modules

◆ Management Modules

✓ XGS3-M16C8S

- 16-port **10/100/1000BASE-T** RJ45
- 24 Gigabit **mini-GBIC/SFP** slots
 - Shared with Port-1 and Port-16
 - Compatible with **100BASE-X SFP** modules
- 1 USB port
- 1 RJ45 serial console interface
- 1 management port
- 1 alarm port

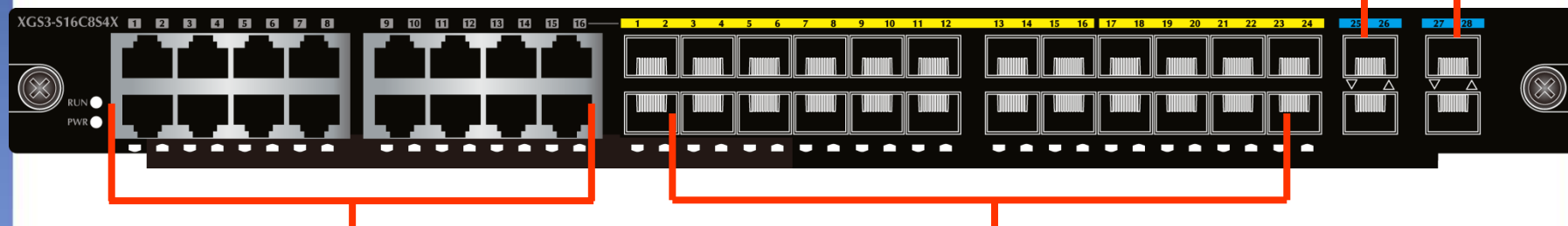


Hardware Introduction – Optional Modules

◆ Standard Modules

✓ XGS3-S16C8S4X

4 1/10GBASE-X SFP+ slots



16-slot 10/100/1000BASE-T RJ45

24 100/1000BASE-X SFP Slots

✓ XGS3-S48G



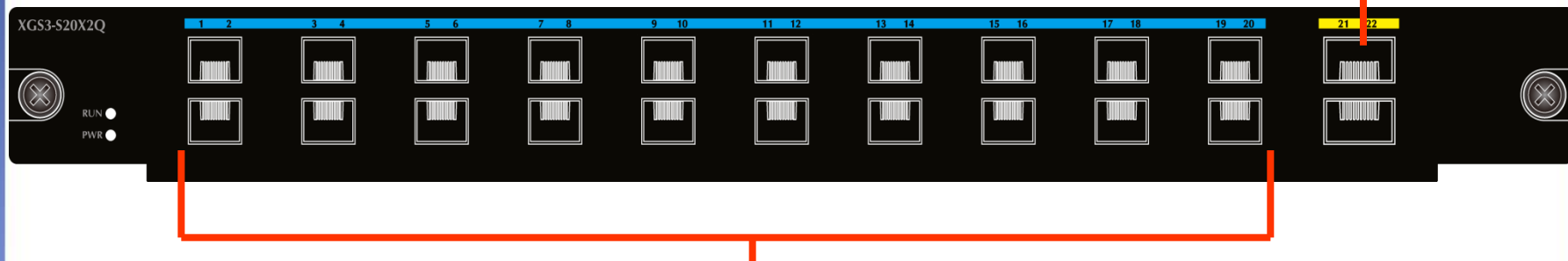
48 10/100/1000BASE-T RJ-45

Hardware Introduction – Optional Modules

◆ Standard Modules

✓ XGS3-S20X2Q

2 40GBASE-X QSFP+ slots



20 1/10GBASE-X SFP+ Slots

✓ XGS3-S44S4X

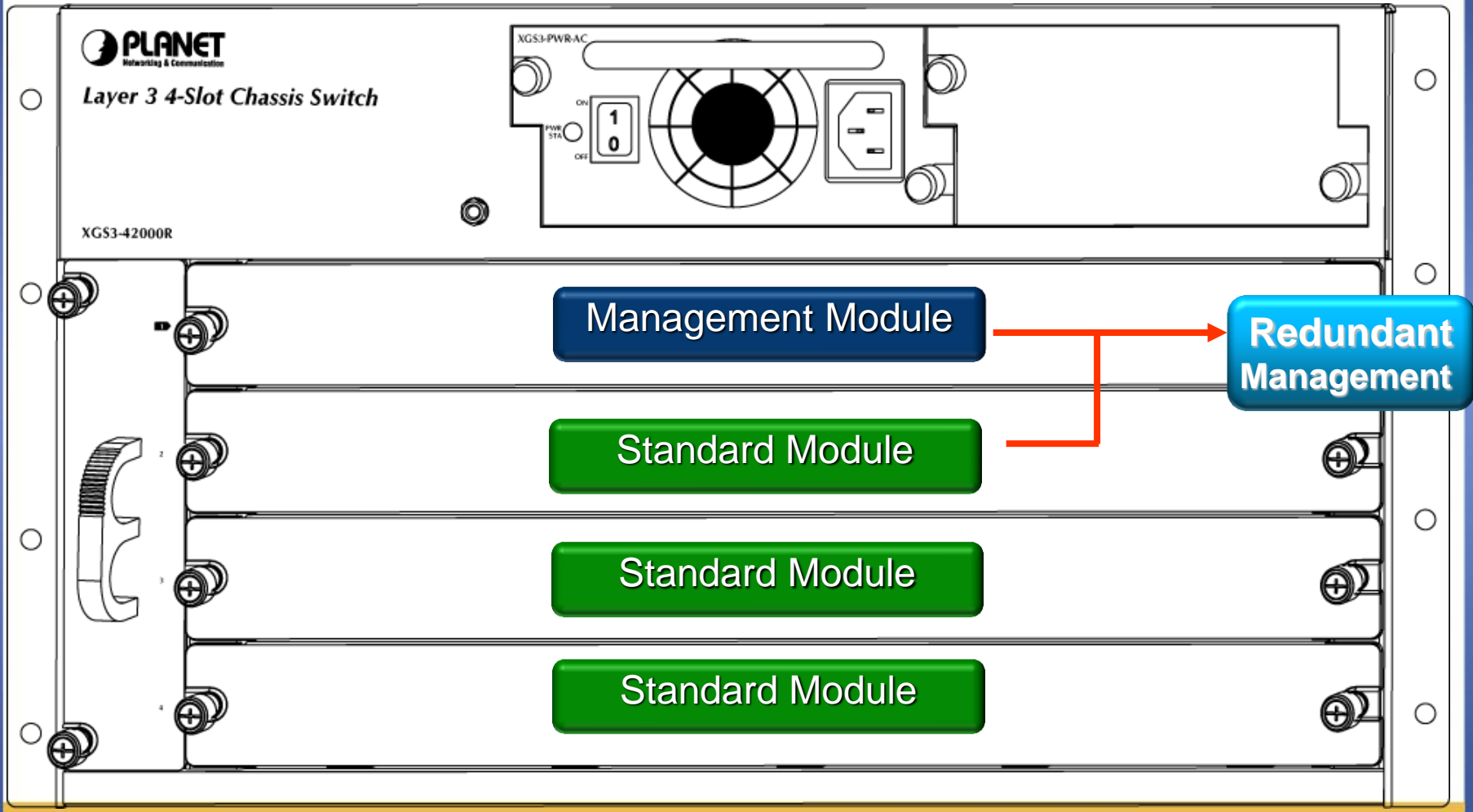


44 100/1000BASE-X SFP Slots

4 1/10GBASE-X SFP+ Slots

Hardware Introduction – Optional Modules

- ◆ Flexible modules installed by request



Product Benefits



Product Benefits

- ◆ **High-performance Full Wire-speed Forward**
- ◆ **Hardware IPv6 Technology**
- ◆ **Abundant IPv6/IPv4 Routing Protocols**
- ◆ **Strong IPv6/IPv4 Multicast Protocols**
- ◆ **High Security and Reliability**
- ◆ **Advanced Secure Network Management**
- ◆ **Centralized Single IP Management**

Product Benefits – *ISP/Telecom*

◆ Abundant IPv6 Support

- ✓ Hardware-based **IPv6 routing** for maximum performance
- ✓ Meet the need for larger addressing and higher security

◆ Rich IPv6/IPv4 Routing Protocol

- ✓ **RIP v1/v2, RIPng** and **OSPF v2/v3** provide dynamic routing by exchanging routing information with other Layer 3 switches and routers.
- ✓ **VRRP** prevents your system from failing by dynamically backing up multiple L3 switches for routing.
- ✓ **Policy-based Route** is important for customer when they need multi exit application.

Product Benefits – *ISP/Telecom*

◆ Strong Multicast

- ✓ Rich L2 multicast features such as **IGMPv1/v2/v3** and snooping
- ✓ L3 multicast protocols such as **DVMRP**, **PIM-DM**, **PIM-SM** and **PIM-SSM**

◆ Performance

- ✓ The **10 Gigabit Ethernet** connectivity via a hot-pluggable 10 Gigabit SFP+ transceiver
- ✓ **Q-in-Q** for MAN (Metro Area Network) applications

Product Benefits – *Campus/Enterprise*

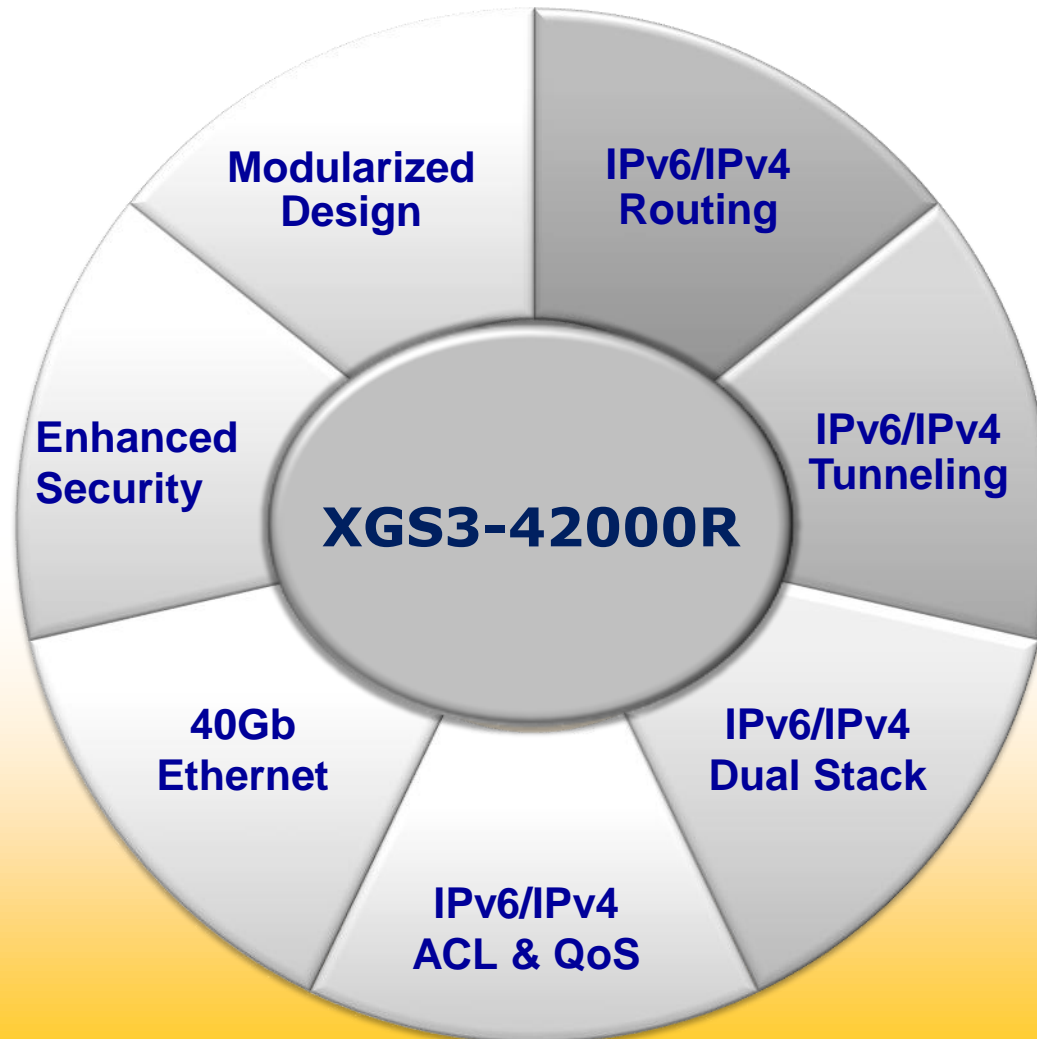
- ◆ **Cost-Effective IPv6 Managed Core Layer Switch**
 - ✓ **IPv4/IPv6 Dual Stack** helps to connect to IPv6 network now and in the future

- ◆ **Full Secure Management**
 - ✓ **SSH / SSL / SNMPv3** protocols ensure security management
 - ✓ **SNMP, RMON and Trap alarm** for Centralized Network Management

- ◆ **Excellent Layer 2/3/4 and IPv6/IPv4 Traffic Control**
 - ✓ **Layer 2/3/4 QoS Traffic Control**
 - ✓ **Layer 2/3/4 ACL Security**

- ◆ **Reliable**
 - ✓ **Redundant Management Modules**
 - ✓ **Redundant AC Power Supplies** for non-stop operation

Product Key Features



Product Features



Product Features – Software Overview

	IPv6		IPv4	
Layer 3 IP Routing	<ul style="list-style-type: none"> ➤RIPng ➤OSPFv3 ➤BGP4+ ➤VRRP3 	<ul style="list-style-type: none"> ➤Configured Tunnels ➤ISATAP ➤CIDR ➤IPv6 6 to 4 Tunnel ➤Configured Tunnel 	<ul style="list-style-type: none"> ➤RIP v1/v2 ➤OSPF v2 ➤BGP4 ➤VRRP 	<ul style="list-style-type: none"> ➤ Policy-based Routing (PBR) ➤ Multi-netting, Super-netting (CIDR) ➤ ARP, ARP Proxy
L3 Multicast Routing	<ul style="list-style-type: none"> ➤PIM-DM6/PIM-SM6 ➤PIM-SSM6 ➤IPv6 DCSCM ➤MLD v1/v2 	<ul style="list-style-type: none"> ➤ MLD Snooping ➤ Multicast Receive Control ➤ ANYCAST RIPv6 	<ul style="list-style-type: none"> ➤IGMP v1/v2/v3 ➤PIM-DM / PIN-SM ➤DVMRP 	
Layer 2	<ul style="list-style-type: none"> ➤802.1Q Tagged VLAN ➤Q-in-Q VLAN ➤GVRP ➤Private VLAN 	<ul style="list-style-type: none"> ➤STP ➤RSTP ➤MSTP 	<ul style="list-style-type: none"> ➤BPDU Guard ➤BPDU Filtering ➤Root Guard 	<ul style="list-style-type: none"> ➤Static Trunk ➤IEEE 802.3ad LACP
L2 Multicast	<ul style="list-style-type: none"> ➤ IGMP Snooping v1, v2 and v3 ➤ IGMP Querier 	<ul style="list-style-type: none"> ➤IGMP Snooping filtering 	<ul style="list-style-type: none"> ➤ DCSCM ➤ Multicast source control 	<ul style="list-style-type: none"> ➤ Resist illegal multicast source ➤ Multicast user control

Product Features – Software Overview

	IPv6	IPv4
QoS	<ul style="list-style-type: none"> ➢ Priority by ➢ 802.1p CoS ➢ IP TOS / DSCP / Precedence 	<ul style="list-style-type: none"> ➢ IP TCP/UDP port number ➢ Bandwidth control ➢ Ingress Shaper and Egress Rate Limit ➢ Traffic-policing policies on the switch port ➢ DSCP remarking
Security	<ul style="list-style-type: none"> ➢ IEEE 802.1x Port-Based authentication ➢ MAC-based authentication 	<ul style="list-style-type: none"> ➢ RADIUS/TACACS+ ➢ IPv6/IPv4 Access Control List (ACL) ➢ IP-based filtering ➢ MAC-based filtering ➢ Time-based ACL ➢ Management Source IP Filter ➢ DHCP Snooping ➢ ARP Inspection ➢ IP Source Guard
Management	<ul style="list-style-type: none"> ➢ WEB-based ➢ Telnet/Console Command Line ➢ SNMP v1 and v2c ➢ SSH/SSL ➢ Single IP Management 	<ul style="list-style-type: none"> ➢ SNMPv3 ➢ SNMP RMON 1, 2, 3 and 9 ➢ SNMP trap ➢ IPv4/IPv6 Dual Stack ➢ IPv6 IP Address/NTP/DNS management ➢ DHCPv6 ➢ DHCP Server v6 ➢ ND (Neighbor Discovery) ➢ NTP (Network Time Protocol) ➢ Syslog Server ➢ Link Layer Discovery Protocol (LLDP) Protocol

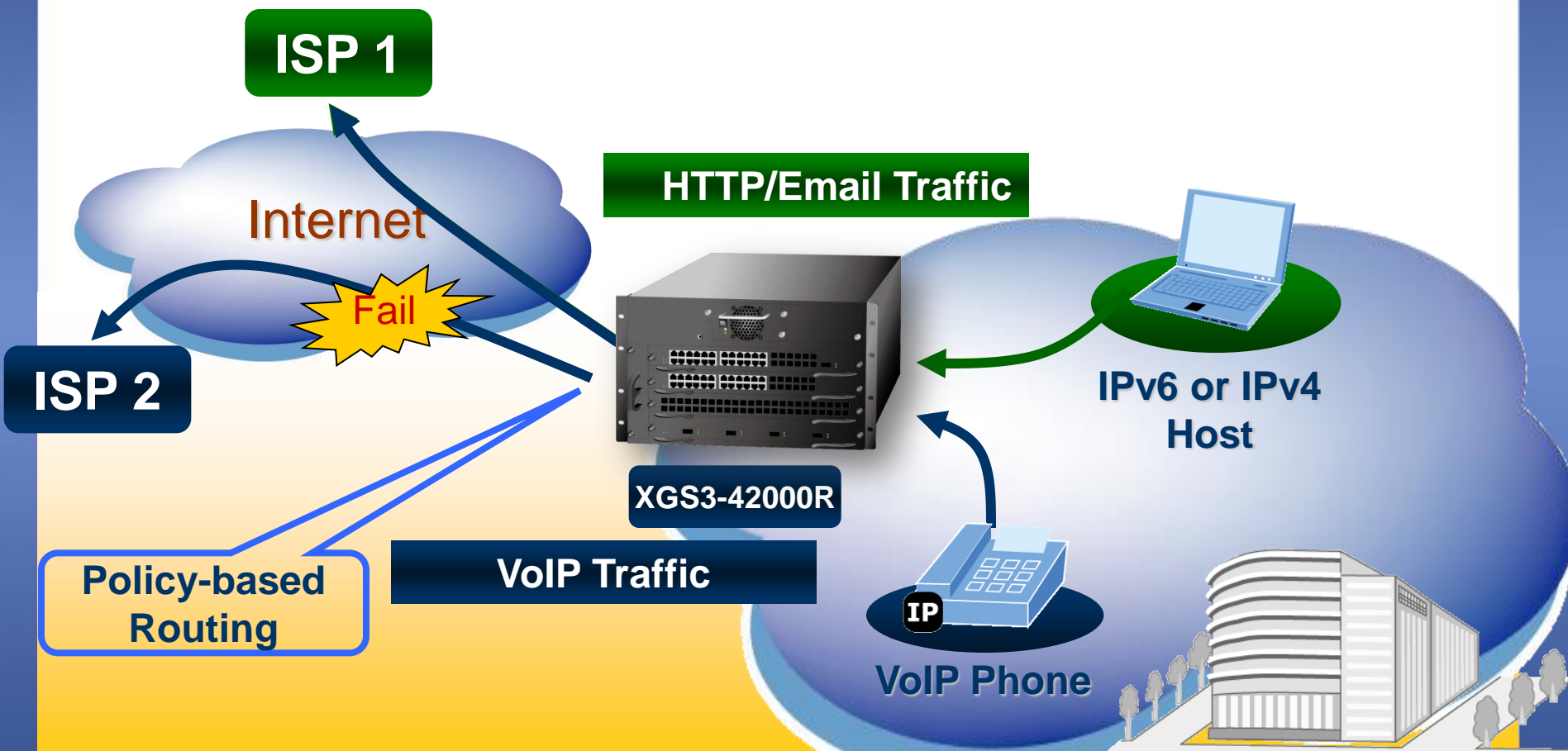
Product Features -- PBR

◆ PBR (Policy-based Routing)

- ✓ PBR is a method which determines the next hop of the data packets by policy messages such as:
 - Source address
 - Destination address
 - IP priority
 - TOS value
 - IP protocol
 - Source port no
 - Destination port no

Product Features -- PBR

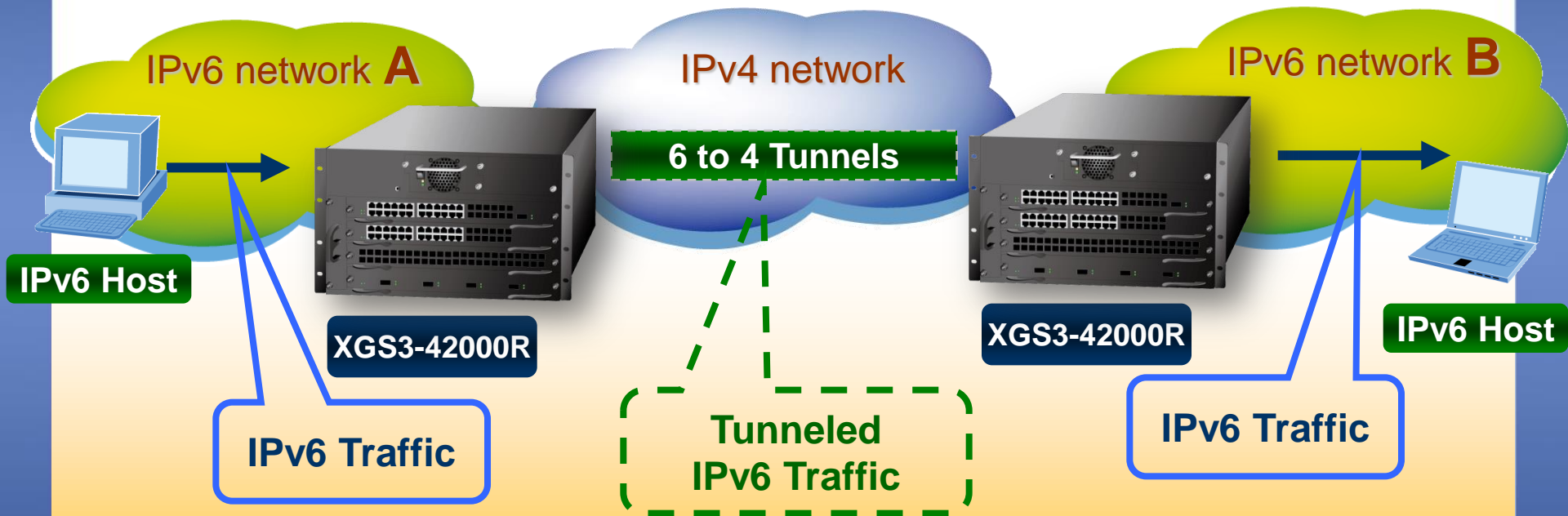
- ◆ IPv6/IPv4 Policy-based Routing



Product Features – 6 to 4 Tunnels

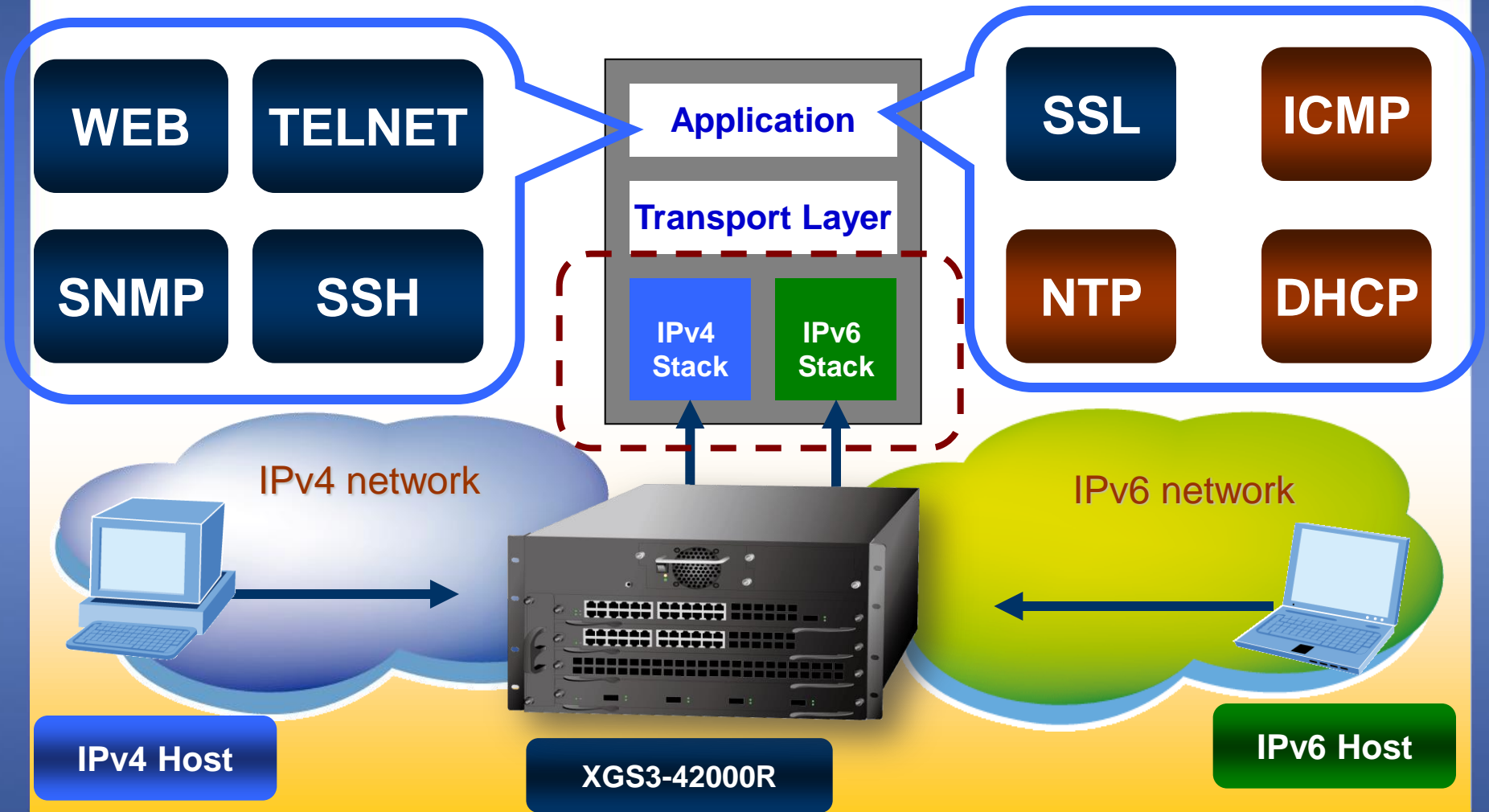
◆ IPv6 6 to 4 Tunnels

- ✓ IPv6 over IPv4 Tunnel



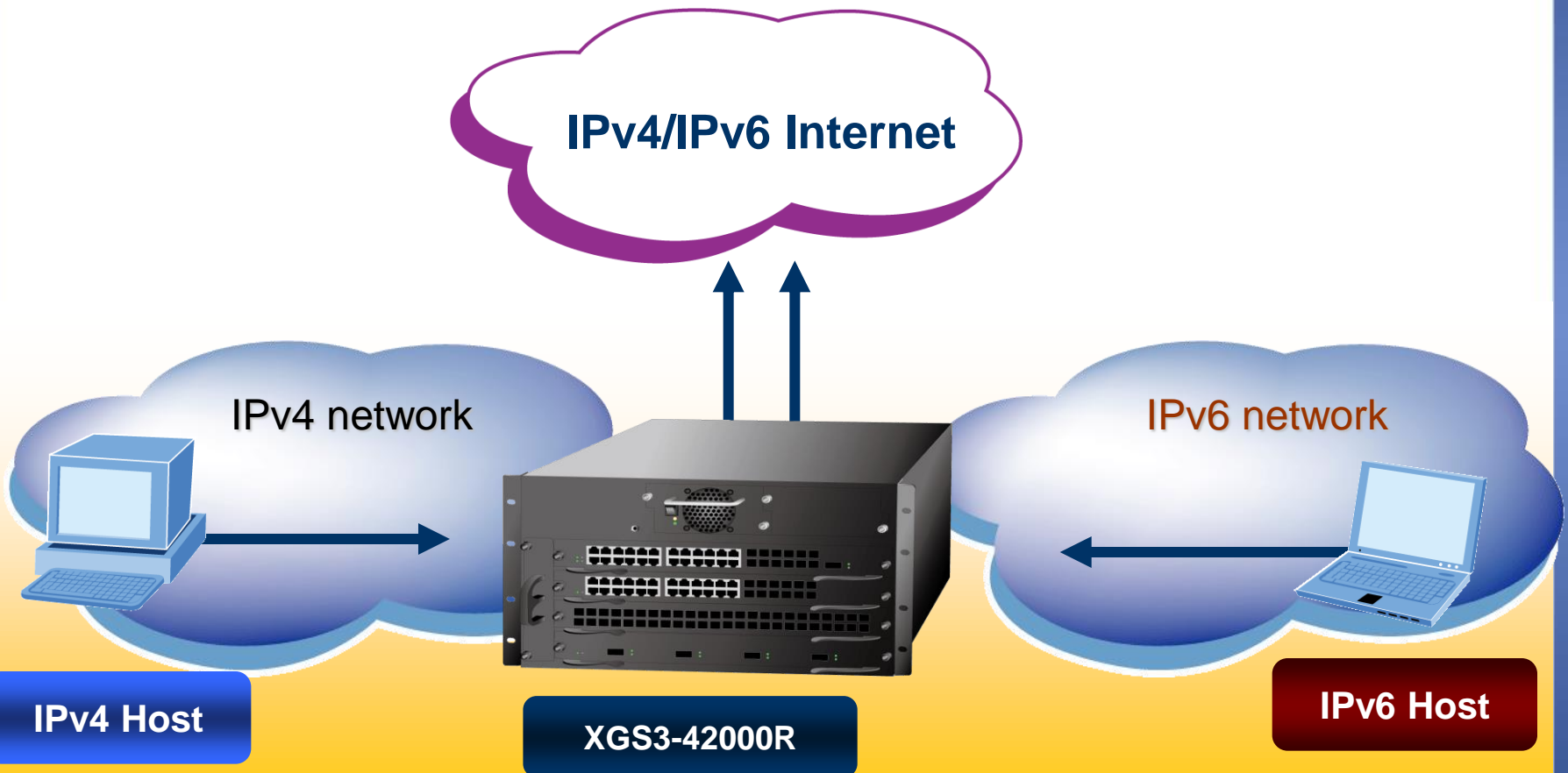
Product Features – *Dual Stack*

◆ IPv6/IPv4 Dual Stack



Product Features – IPv6

◆ IPv6/IPv4 Routing

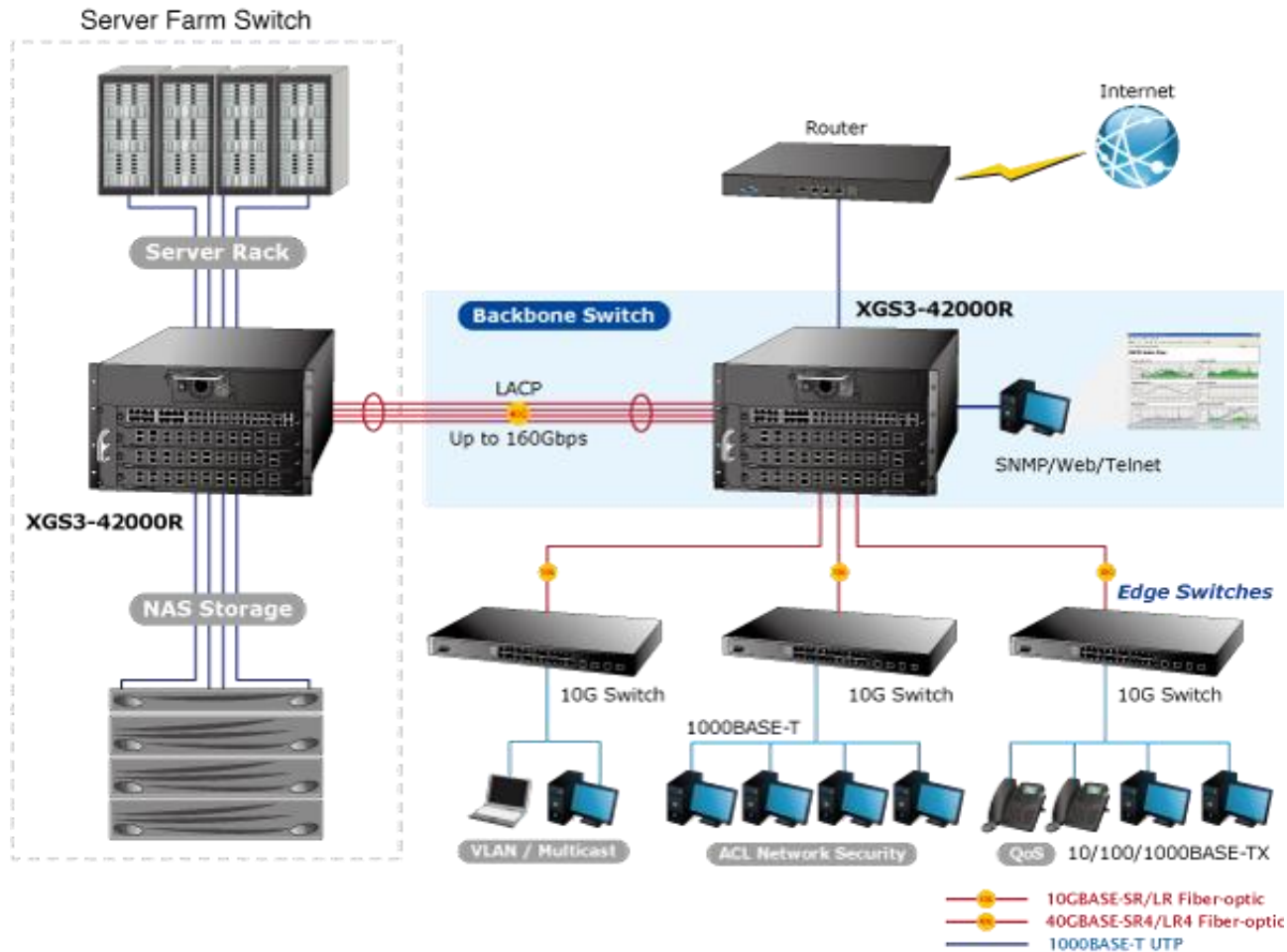


Applications



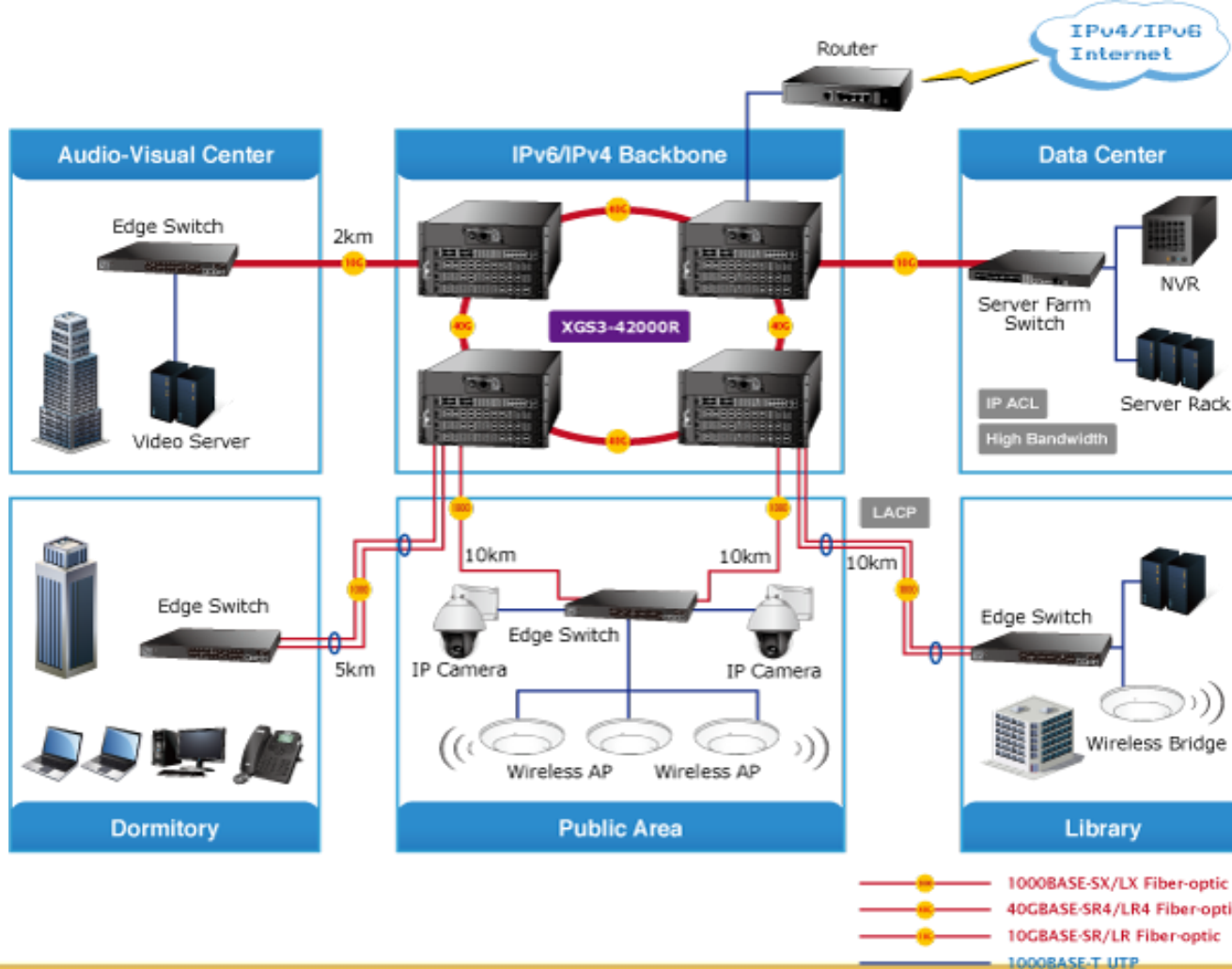
Applications

- ◆ **Reliable, High-performance and High-density Enterprise Backbone Switch Solution**



Applications

◆ Carrier Class Backbone Switch for Campus and Community



Comparison



Product Comparison

Model Name	PLANET XGS3-4200Rv2	Allied Telesis AT-SB4004	HP Procurve 4204vl (J8770A)
			

Hardware

Total Number of Slots	4	6	4
Max. Management Module	2	2	1
Max. Standard Module (Line Card)	3	4	3
Management Module Redundancy	■	■	--
Number of Power Supply Bay	2	2	2
Switch Capacity	432Gbps	96Gbps	
Max. 40G Ports	6	--	--
Max. 10G Ports	60	3 (XFP)	4
Max. 10/100/1000 Ports	160	96	96
Max. 1000 SFP Slots	156	96	16
Redundant Power	2 x AC	2 x AC or 2 x DC	1 AC
IPv6 Routing	■	■	--

Product Comparison



Model Name		PLANET XGS3-42000Rv2	Allied Telesis AT-SB4004	HP Procurve 4204vl
IPv4 Routing				
Routing Interface		VLAN Routing	VLAN Routing	VLAN Routing
IP Routing	Static Route	■	■	■
	RIP v1 / v2	■	■	-
	OSPFv2	■	■	-
	BGP4	■	--	-
	IGMP	V1, V2, V3	V1, V2, V3	-
Multicast Routing	DVMRP	■	■	-
	PIM-DM	■	■	-
	PIM-SM	■	■	-
	PIM-SSM	■	-	-
Policy-based Routing		■	-	-
VRRP		■	■	-
CIDR (Classless Inter-Domain Routing)		■	-	-
MRPP (Multi-layer Ring Protection Protocol)		■	-	-
IPv6 Features				
RIPng		■	N / A	-
OSPFv3		■	N / A	-
MBGP4+		■	N / A	-
IPv6 Tunnel (6 to 4 Tunnels)		■	N / A	-

Product Comparison

Model Name		PLANET XGS3-42000Rv2	Allied Telesis AT-SB4004	HP Procurve 4204vl
Layer 2 Features				
Bandwidth Control		In / Out	In / Out	In / Out
Link Aggregation	Static	128 Trunks / 8 Ports	5 Trunks / 8 Ports	60 Trunks / 8 Ports
	LACP	128 Trunks / 8 Ports	32 Trunks / 16 Ports	60 Trunks / 8 Ports
VLAN	802.1Q	■	■	■
	Portocol-based	■	■	-
	Q-in-Q	■	N / A	-
	GVRP	■	■	■
	Private VLAN	■	-	-
	Voice VLAN	■	-	-
Spanning Tree		802.1d/1w/1s	802.1d/1w	802.1d/1w/1s
STP BPDU Guard		■	-	-
BPDU Filtering		■	-	-
Multicast				
IGMP Snooping		V1, V2, V3	V1, V2	V1, V2, V3
IGMP Query mode		■	N / A	■
IGMP Filtering		■	-	-
MLDv1/v2 (Multicast Listener Discovery)		■	■	-
MLD v1/v2 Snooping		■	■ /	-
MVR (Multicast VLAN Registration)		■	-	-
MSDP (Multicast Source Discovery Protocol)		■	-	-

Product Comparison

Model Name		PLANET XGS3-42000Rv2	Allied Telesis AT-SB4004	HP Procurve 4204vl
QoS				
QoS	L2 802.1p	■ / 8 queue	■ / 8 queue	■ / ? queue
	L3 IP TOS / DSCP	■	■	■
	L4 TCP/UDP Port	■	■	■
	Strict / WRR	■ / ■	■ / ■	■ / ■
Policy-based DiffServ		■	■	-
Security				
Authentication	802.1X Port based	■	■	■
	MAC based	■	-	■
ACL		L2 / L3 / L4	L2 / L3 / L4	N / A
Time-based ACL		■	-	-
Port Security		■	■	■
IP / MAC Security		MAC Filter / IP-MAC Port Binding	IP-MAC Port Binding	MAC Filtering / MAC Binding / Static MAC
SSH / SSL		■ / ■	■ / ■	■ / ■
RADIUS		■	■	■
TACACS+		■	■	■
DHCP Snooping		■	-	-
IP Source Guard		■	-	-
ARP Inspection		■	-	-
DoS Protection		■	-	-

Product Comparison



Model Name		PLANET XGS3-42000Rv2	Allied Telesis AT-SB4004	HP Procurve 4204vl
Management				
Management & Configuration		Web, Telnet, Console	Web, Telnet, Console	Web, Telnet, Console
Stacking		IP Stacking, up to 24 units	-	Virtual Stack of up to 16 units
IPv6 Management		■	-	-
SNMP	V1, V2c	■	■	■
	V3	■	■	■
	RMON	4 Groups	4 Groups	4 Groups
Log		Logs, Syslog	System Log	System Log, Syslog
DHCP Relay		■	-	-
DHCP Option 82		■	-	-
DHCP Server		IPv6 / IPv4	-	-
sFlow		■	-	■
Other Management		SNTP, LLDP	-	LLDP
Physical				
AC Power		Internal 100~240V AC	Internal 100~240V AC	Internal 100~240V AC
DC Power		N / A		

Appendix



Sales Target

◆ Target Markets

- ✓ ISP, Telecom, Network Service Provider
- ✓ Tender Market
- ✓ Government, Campus, Hospital
- ✓ Enterprise Secure Office, Factory

◆ Recommended Solutions

- ✓ The following are **Multi-layer Telecom Management Switches**:
 - XGS3-24042v2 and XGS3-24242v2
- ✓ The following are **Layer 3 Enterprise Management Switches**:
 - SGS-6340-16XR, SGS-6340-20S4C4X, SGS-6340-24P4S, SGS-6340-24T4S and SGS-6340-48T4S

Appendix

◆ Available Modules

Module	Photo	Description
XGS3-M16C8S		XGS3-42000R Management Module with 24-port Gigabit (16-port TP/SFP combo + 8-port 100/1000X SFP)
XGS3-S16C8S4X		XGS3-42000R Standard Ethernet Module with 24-port Gigabit (16-port TP/SFP combo + 8-port 100/1000X SFP) + 4-port 10G SFP+
XGS3-S48G		XGS3-42000R Standard Ethernet Module with 48-port 10/100/1000BASE-R RJ45
XGS3-S20X2Q		XGS3-42000R Standard Ethernet Module with 20-Port 10G SFP+ + 2-Port 40G QSFP+
XGS3-S44S4X		XGS3-42000R Standard Ethernet Module with 44-Port 100/1000BASE-X SFP + 4-Port 10G SFP+
XGS3-PWR-AC		500-watt AC Power Supply for XGS3-42000R

Appendix

◆ Available **40Gigabit Ethernet** Direct Attached Cable Modules: ✓ 40Gigabit Ethernet Direct Attached Cable

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
CB-DAQSFP-0.5M	40G	Copper	--	0.5m	--	-40 ~ 75 degrees C
CB-DAQSFP-2M	40G	Copper	--	2m	--	-40 ~ 75 degrees C

◆ Available **10Gigabit Ethernet** Fiber Optic SFP Modules: ✓ 10Gigabit Ethernet Transceiver (10GBASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MTB-SR	10G	LC	Multi Mode	300m	850nm	0 ~ 60 degrees C
MTB-LR	10G	LC	Single Mode	10km	1310nm	0 ~ 60 degrees C
MTB-TSR	10G	LC	Multi Mode	300m	850nm	-40 ~ 75 degrees C
MTB-TLR	10G	LC	Single Mode	10km	1310nm	-40 ~ 75 degrees C

◆ Available **10Gigabit Ethernet** Fiber Optic SFP Modules: ✓ 10Gigabit Ethernet Transceiver (10GBASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MTB-LA20 MTB-LB20	10G 10G	WDM (LC)	Single Mode	20km	1270nm	1330nm	0 ~ 60 degrees C
					1330nm	1270nm	
MTB-LA40 MTB-LB40	10G 10G	WDM (LC)	Single Mode	40km	1270nm	1330nm	0 ~ 60 degrees C
MTB-LA60 MTB-LB60	10G 10G	WDM (LC)	Single Mode	60km	1270nm	1330nm	0 ~ 60 degrees C

Appendix

◆ Available Gigabit Ethernet Fiber Optic SFP Modules:

✓ Gigabit Ethernet Transceiver (1000BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-GT	1000	Copper	--	100m	--	0 ~ 60 degrees C
MGB-SX	1000	LC	Multi Mode	550m	850nm	0 ~ 60 degrees C
MGB-SX2	1000	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C
MGB-LX	1000	LC	Single Mode	10km	1310nm	0 ~ 60 degrees C
MGB-L30	1000	LC	Single Mode	30km	1310nm	0 ~ 60 degrees C
MGB-L50	1000	LC	Single Mode	50km	1550nm	0 ~ 60 degrees C
MGB-L70	1000	LC	Single Mode	70km	1550nm	0 ~ 60 degrees C
MGB-L120	1000	LC	Single Mode	120km	1550nm	0 ~ 60 degrees C
MGB-TSX	1000	LC	Multi Mode	550m	850nm	-40 ~ 75 degrees C
MGB-TLX	1000	LC	Single Mode	10km	1310nm	-40 ~ 75 degrees C
MGB-TL30	1000	LC	Single Mode	30km	1310nm	-40 ~ 75 degrees C
MGB-TL70	1000	LC	Single Mode	70km	1550nm	-40 ~ 75 degrees C

Appendix

◆ Available Gigabit Ethernet Fiber Optic SFP Modules:

✓ Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-LA10 MGB-LB10	1000	WDM (LC)	Single Mode	10km	1310nm	1550nm	0 ~ 60 degrees C
					1550nm	1310nm	
MGB-LA20 MGB-LB20	1000	WDM (LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
					1550nm	1310nm	
MGB-LA40 MGB-LB40	1000	WDM (LC)	Single Mode	40km	1310nm	1550nm	0 ~ 60 degrees C
					1550nm	1310nm	
MGB-LA60 MGB-LB60	1000	WDM (LC)	Single Mode	60km	1310nm	1550nm	0 ~ 60 degrees C
					1550nm	1310nm	
MGB-TLA10 MGB-TLB10	1000	WDM (LC)	Single Mode	10km	1310nm	1550nm	-40 ~ 75 degrees C
					1550nm	1310nm	
MGB-TLA20 MGB-TLB20	1000	WDM (LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 degrees C
					1550nm	1310nm	
MGB-TLA40 MGB-TLB40	1000	WDM (LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 degrees C
					1550nm	1310nm	
MGB-TLA60 MGB-TLB60	1000	WDM (LC)	Single Mode	60km	1310nm	1550nm	-40 ~ 75 degrees C
					1550nm	1310nm	

Appendix

◆ Available **Fast Ethernet** Fiber Optic SFP Modules:

✓ Fast Ethernet Transceiver (100BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MFB-FX	100	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C
MFB-F20	100	LC	Single Mode	20km	1310nm	0 ~ 60 degrees C
MFB-F40	100	LC	Single Mode	40km	1310nm	0 ~ 60 degrees C
MFB-F60	100	LC	Single Mode	60km	1310nm	0 ~ 60 degrees C
MFB-F120	100	LC	Single Mode	120km	1310nm	0 ~ 60 degrees C
MFB-TFX	100	LC	Multi Mode	2km	1310nm	-40 ~ 75 degrees C
MFB-TF20	100	LC	Single Mode	20km	13100nm	-40 ~ 75 degrees C

✓ Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MFB-FA20	100	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
MFB-FB20	100	WDM(LC)	Single Mode	20km	1550nm	1310nm	0 ~ 60 degrees C
MFB-TFA20	100	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 degrees C
MFB-TFB20	100	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 75 degrees C
MFB-TFA40	100	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 degrees C
MFB-TFB40	100	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 75 degrees C



ACTIVATING IP POWER