

Overview

The innovative features of HP Networking products are now available in a hybrid 1Gb/10Gb blade switch format. The HP 6125G/XG brings the resiliency of IRF (intelligent Resilient Networking) stacking and the stability of the Comware operating system to the c-Class BladeSystem. With sixteen 1Gb downlink (server) ports, a combination of 1Gb and 10Gb uplink ports, and a 10Gb cross-link port, the HP 6125G/XG reduces cost, while increasing datacenter efficiency and capability. Switches can be combined at the enclosure, rack or datacenter level into a single virtual switch, and managed through a single IP address. Comware OS provides a common level of features, service and security levels from edge to core. And all network elements can be managed through IMC (Intelligent Management Center) providing comprehensive single pane provisioning of the entire network. Truly versatile, the HP 6125G/XG supports IPv6, full layer 3 routing and distributed trunking. If you're looking for a switch that delivers excellent investment protection, flexibility, and scalability for mixed bandwidth applications, the 6125G/XG is the optimal choice for any data center.

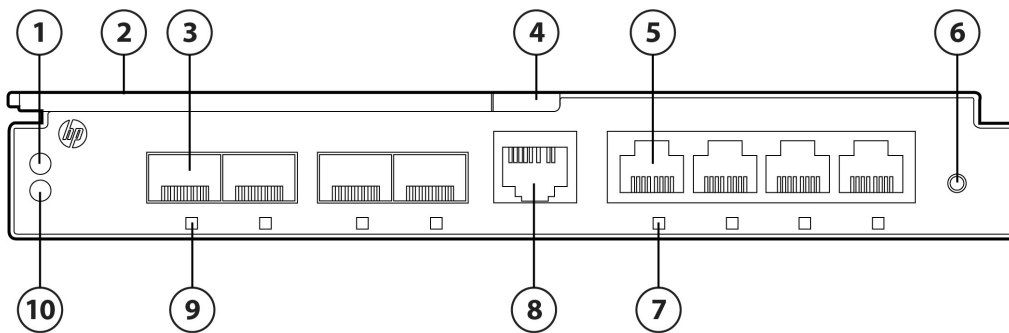


Figure 1 HP 6125G/XG Blade Switch

- | | |
|---|--|
| 1. Unit ID (UID) LED | 6. Reset button |
| 2. Ejector lever | 7. 10/100/1000Base-T Ethernet port LED |
| 3. SFP+ port | 8. Console port |
| 4. Release tab | 9. SFP+ port LED |
| 5. 10/100/1000Base-T auto-sensing Ethernet port | 10. Health LED |

Models

HP 6125G/XG Ethernet Blade Switch	658250-B21
HP 6125G/XG Ethernet Blade Switch with TAA	737226-B21

Overview

Compatibility

HP ProLiant Servers

HP ProLiant BL2x220c G7
HP ProLiant BL2x220c G5
HP ProLiant BL260c G5
HP ProLiant BL280c G6
HP ProLiant BL420c Gen8
HP ProLiant BL460c Gen8
HP ProLiant BL460c G7
HP ProLiant BL460c G6
HP ProLiant BL460c G5
HP ProLiant BL460c
HP ProLiant BL465c Gen8
HP ProLiant BL465c G7
HP ProLiant BL465 G6
HP ProLiant BL465 G5
HP ProLiant BL465c
HP ProLiant BL480c
HP ProLiant BL490c G7
HP ProLiant BL490c G6
HP ProLiant BL495c G6
HP ProLiant BL495c G5
HP ProLiant BL660c Gen8
HP ProLiant BL620c G7
HP ProLiant BL680c G5
HP ProLiant BL680c G7
HP ProLiant BL685c G7
HP ProLiant BL685 G6
HP ProLiant BL685 G5
HP ProLiant BL685c

NOTE: Some servers listed above may be discontinued.

HP Integrity Servers

HP Integrity BL860c Server Blade
HP Integrity BL860c i2 Server Blade
HP Integrity BL860c i4 Server Blade
HP Integrity BL870c Server Blade
HP Integrity BL870c i2 Server Blade
HP Integrity BL870c i4 Server Blade
HP Integrity BL890c i2 Server Blade
HP Integrity BL890c i4 Server Blade

NOTE: Some servers listed above may be discontinued.

ProLiant BL c-Class

Server Blade Enclosures

HP BladeSystem c3000 Enclosure
HP BladeSystem c7000 Enclosure

Standard Features

Standard Features

Performance

- Non blocking architecture
- Wire speed switching and IPv4/IPv6 routing on all ports
- Separate 10Gb Internal cross connect between switches
- Combine up to 10 switches into a single virtual switch
- RJ45 ports support 1Gb
- SFP+ ports support either 1Gb or 10Gb depending on module inserted
- Any SFP+ port can be used for IRF connections
- Mix any combination of HP 6125G and HP6125G/XG in a single IRF domain
- Store and Forward Switching
- Hardware-based wire-speed access control lists (ACLs)

Management

- Remote configuration and management through Web browser or CLI
- Secure Web-based management through HTTPS
- Standards based SNMP management via SNMPv1, v2c and v3
- OOBM via Onboard Administrator
- GUI Management via Intelligent Management Center
- RJ45 console port
- sFlow and RMON network monitoring
- Manager and operator privilege levels
- Command authorization via RADIUS
- Complete session logging for problem resolution
- LLDP Discovery protocol
- IPv6 management
- Dual flash images
- Multiple configuration files
- Syslog
- Network Time Protocol (NTP)

Management

- IEEE 802.1X user authentication
- MAC-based authentication with RADIUS server
- Access Control Lists (ACLs)
- Secure FTP
- STP Root Guard
- DHCP Protection from unauthorized DHCP servers
- IP Source Guard
- Dynamic ARP protection to prevent eavesdropping
- Guest VLAN
- Endpoint Admission Defense (EAD)
- RADIUS/TACACS+
- Secure management via SSHv2 and SNMPv3
- Unicast Reverse Path Forwarding (URPF)

Standard Features

Layer 2 Switching

- 32K MAC addresses
- 4094 VLANs
- IEEE 802.1ad QinQ VLANs
- Jumbo packet support
- GVRP VLAN Registration Protocol
- Port Aggregation
- Spanning Tree Protocol, PVST, MSTP, RSTP, STP Root Guard
- Smart Link fast uplink failure recovery
- IP Multicast Snooping and data-driven IGMP
- Policy Based Routing

Layer 3 Routing

- IPv4 routing protocols - static routes, RIP, OSPF and BGP
- IPv6 routing protocols - static routes, RIPng, OSPFv3 and BGP+
- IPv6 tunneling
- IP Multicast - PIM-SSM, PIM-DM, PIM-SM, IGMP for IPv4 and IPv6
- Equal-Cost Multipath (ECMP)
- Policy-based routing
- DHCP and DHCPv6 client
- VRRP

Quality of Service (QoS)

- Advanced classifier-based QoS - classifies traffic using multiple match criteria based on Layer 2, 3 and 4 information; applies QoS policies such as priority level and rate limit to selected traffic on a per-port or per-VLAN basis
- Traffic policing - supports Committed Access Rate (CAR) and line rate
- Powerful QoS feature - creates traffic classes based on access control lists (ACL), IEEE 802.1p precedence, IP, DSCP or Type of Service (ToS) precedence; supports filter, redirect, mirror or remark; supports the following congestion actions: strict priority (SP) queuing, weighted round robin (WRR), weighted fair queuing (WFQ), and weighted random early discard (WRED)
- Storm restraint - allows limitation of broadcast, multicast, and unknown unicast traffic rate to cut down on unwanted broadcast traffic on the network

Resiliency and High Availability

- Intelligent Resilient Framework (IRF) - Creates virtual resilient switching fabrics, where two or more switches perform as a single Layer 2 switch and Layer 3 router; Switches do not have to be co-located and can be part of a disaster recovery system; Servers or switches can be attached using standard LACP for automatic load balancing and high availability; Simplifies network operation by eliminating Spanning Tree, ECMP and VRRP
- Device Link Detection Protocol (DLDP) - Monitors Link connectivity and shuts down ports at both ends if unidirectional traffic is detected
- Rapid Ring Protection Protocol (RRPP) - Connects multiple switches in a high-performance ring using standard Ethernet technology; traffic can be rerouted around the ring in less than 50 ms upon failure
- Smart Link - Allows 50 ms failover between links
- Virtual Router Redundancy Protocol (VRRP)

Monitoring and Diagnostics

- OAM (802.3ah) - Detects data link layer problems in the "last mile"; monitors link status between two devices
- CFD (802.1ag) - Connectivity Fault Detection (CFD) provides L2 link OAM mechanism used for link connectivity detection and fault location
- Mirroring - Port mirroring enables traffic on a port to be simultaneously sent to a network analyzer for monitoring; Flow-based mirroring

Service and Support

Service and Support

HP Technology Services

When you buy HP BladeSystem Options for your HP BladeSystem, it is also good time to think about services. HP Technology Services offers you technical consultants and support expertise to solve your most complex infrastructure problems, giving you one call to make, fast answers, and global reach. We help keep your business running, boost availability, and avoid downtime.

Protect your business beyond warranty with HP Care Pack Services

HP Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business needs.

HP Foundation Care services offer scalable reactive support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for your IT and business needs. HP Collaborative Support offers hardware and basic software support with enhanced call management. If you are running business critical environments, HP offers Proactive Care. This service helps you deliver high levels of system availability through proactive service management and advanced technical response.

Recommended HP Care Pack Services for your HP product

Recommended Services **3-Year HP 24x7 4 hour response, Proactive Care Service***

This service gives you combined reactive and proactive support including rapid access to our Advanced Solution Center to manage and prevent problems and a Technical Support Specialist with a broad level of technical knowledge that will engage with additional technical expertise as needed from HP's vast global resources.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf>

HP Installation of ProLiant Add On Options Service

This easy-to-buy, easy-to-use HP Care Pack service helps ensure that your new HP hardware is installed smoothly, efficiently, and with minimal disruption of your IT and business operations

Related HP Care Pack Services to enhance your HP product experience

Related Services

3-Year HP 6 hour Call to Repair Response, Proactive Care*

Combined reactive and proactive support for hardware and software helping optimize your systems and delivering high levels of availability through proactive service management and advanced technical response. Hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request. A Technical Account Manager, as your single point of contact, will own your call or issue end to end until resolved.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf>

3-Year HP 6-hour Onsite Call-to-Repair, HP Collaborative Support

Combined hardware and basic software support giving customers a single point of contact for server problem diagnosis, hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request to the HP Global Solution Center, and basic software problem diagnosis, fault isolation, and resolution if available to HP and call management with 3rd party software manufacturers if needed.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-8232ENW.pdf>

Service and Support

Additional Services

HP Proactive Select Service

Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. <http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf>

NOTE: Additional HP Care Pack services can be found at: <http://h20558.www2.hp.com/portal/site/cpc>

Insight Online/Insight Remote Support

HP Insight Remote Support provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. This comes at no additional cost with your HP solution. Learn more about Insight Remote Support <http://www.hp.com/go/insightremotesupport> and Insight Online <http://h18013.www1.hp.com/products/servers/management/insight-online/index.html>

NOTE: Insight Remote Support is a prerequisite for HP Proactive Care referenced in Additional Services above.

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more <http://www.hp.com/go/hpsc>

HP's Support Center Mobile App allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.

HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

NOTE: HP Support Center Mobile App above is subject to local availability.

Parts and materials

HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Supplies and consumable parts will not be provided as part of this service; standard warranty terms and conditions apply. Parts and components that have exceeded their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual or the technical product data sheet will not be provided, repaired or replaced as part of this service.

Service Coverage

HP Care Pack services for the c7000 and c3000 enclosures cover the enclosure, power supplies and fans. HP qualified rack options are covered by these services when installed within the same rack. HP supported c-Class enclosure devices including pass thru and Ethernet interconnect are also covered by the c7000 and c3000 enclosures Care Pack services.

For more information

To learn more on HP BladeSystem services, please contact your HP sales representative or HP Authorized ServiceONE Channel Partner. Or visit: www.hp.com/services/bladesystem

For more information

To learn more on services for HP ESSN Options, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant> or www.hp.com/services/bladesystem

Related Options

SFP Options

HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HP X125 1G SFP LC LH70 Transceiver	JD063B
HP X120 1G SFP RJ45 T Transceiver	JD089B
HP X120 1G SFP LC SX Transceiver	JD118B
HP X120 1G SFP LC LX Transceiver	JD119B
HP BLc Virtual Connect 1Gb RJ-45 Small Form Factor Pluggable Option Kit	453154-B21
HP BLc Virtual Connect 1Gb SX Small Form Factor Pluggable Option Kit	453151-B21

SFP+ Options

HP X130 10G SFP+ LC SR Transceiver	JD092B
HP X130 10G SFP+ LC LRM Transceiver	JD093B
HP X130 10G SFP+ LC LR Transceiver	JD094B

Direct Attach Cables

HP X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HP X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
HP X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C

NOTE: The transceivers and cables listed above have been qualified and certified to work with this product. Transceiver and DAC cables from any manufacturer will be accepted, but they will not be supported by HP.

Service and Support Offerings

Hardware Services On-site Service

HP 3 year 4 hour 24x7 c7000 Enclosure Proactive Care Service	U3C33E
HP 3 year 6 hour Call To Repair 24x7 c7000 Enclosure Proactive Care Service	U3C36E
HP 3 year 6 hour Call To Repair 24x7 c7000 Enclosure Collaborative Support	U1M16E

Installation Services

HP Installation of ProLiant Add On/In Options Service	UH745E
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Additional HP Care Pack services can be found at:

<http://h20558.www2.hp.com/portal/site/cpc>

NOTE: For more HP BladeSystem information, customer/resellers can contact:

<http://www.hp.com/services/bladessystemservices>

Technical Specifications

Shipping Dimensions	Length	11.54 in (293 mm)	
	Width	14.57 in (370 mm)	
	Height	3.54 in (95 mm)	
Shipping Weight		1.9 kg (4.19 lbs)	
Product Specifications Hardware	Performance	44 Gbps uplink port bandwidth; 16 Gbps downlink (server) port bandwidth; 10Gbps cross-link bandwidth	
		Forwarding rate 1.5 million pps per Gigabit port, (64-byte packets) and 14.8 million pps per 10 Gig port	
		Non-blocking, full-wire speed for all connections Auto-MDI/MDIX, auto-negotiation and auto-sensing with full-duplex support.	
	Forwarding Mode	Store and forward	
	MAC Addresses	Supports 32K MAC addresses per switch in a BladeSystem Enclosure	
	Forwarding Table Age Time	10 to 1,000,000 seconds (default: 300 seconds)	
		(Maximum age)	
	VLAN IDs	4094	
	Jumbo Frame	9220 Byte	
	IGMP Groups	1024	
	Memory	1 GB Main, 256MB flash and 3MB packet buffer	
	Connectors and Cabling	Connector	4 RJ-45 4 SFP+/SFP (1Gb/10Gb/IRF) 1 RJ45 Management
		Cable Support	FCC Class A ICES-003 Class A AS/NZS 3548 Class A VCCI Class A
Indicators		Module health, amber/green Module locator (UID), blue 10/100/100Base-T port speed/link/activity, amber/green SFP port link/activity, green SFP+ port link/activity, green	
Dimensions		Length	10.5 in (267.7 mm)
	Width	7.5 in (192.79 mm)	
	Height	1.1 in (27.94 mm)	
Weight		1.32 kg (2.9 lbs)	
Environmental Ranges	Temperature Range	Operating	50° to 95° F (10° to 35° C)
		Non-operating	-40° to 158° F (-40° to 70° C)
	Relative Humidity (non-condensing)	Operating 5% to 95%	
	Power Specification	Power Requirements	41W

Standards Support

General protocols



Technical Specifications

- IEEE 802.1ag Service Layer OAM
- IEEE 802.1D MAC Bridges
- IEEE 802.1p Priority
- IEEE 802.1Q VLANs
- IEEE 802.1s (MSTP)
- IEEE 802.1v VLAN classification by Protocol and Port
- IEEE 802.1w Rapid Reconfiguration of Spanning Tree
- IEEE 802.1X PAE
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- IEEE 802.3ae 10-Gigabit Ethernet
- IEEE 802.3x Flow Control
- RFC 768 UDP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 854 TELNET
- RFC 925 Multi-LAN Address Resolution
- RFC 951 BOOTP
- RFC 1058 RIPv1
- RFC 1350 TFTP Protocol (revision 2)
- RFC 1519 CIDR
- RFC 1542 BOOTP Extensions
- RFC 2131 DHCP
- RFC 2453 RIPv2
- RFC 3768 VRRP
- RFC 4675 RADIUS VLAN & Priority
- 802.1r - GARP Proprietary Attribute Registration Protocol (GPRP)

IP Multicast

- RFC 2934 Protocol Independent Multicast MIB for IPv4
- RFC 3376 IGMPv3 (host joins only)
- RFC 3618 Multicast Source Discovery Protocol (MSDP)
- RFC 3973 Draft 2 PIM Dense Mode
- RFC 4601 PIM Sparse Mode

IPv6

- RFC 4443 ICMPv6
- RFC 4541 IGMP & MLD Snooping Switch
- RFC 4861 IPv6 Neighbor Discovery
- RFC 4862 IPv6 Stateless Address Auto-configuration

MIBs

- IEEE 8021-PAE-MIB
- IEEE 8021-CFM-MIB
- IEEE 8023-LAG-MIB
- RFC 1213 MIB II
- RFC 1493 Bridge MIB
- RFC 1657 BGP-4 MIB
- RFC 1724 RIPv2 MIB
- RFC 1850 OSPFv2 MIB

Technical Specifications

RFC 2011 SNMPv2 MIB for IP
RFC 2013 SNMPv2 MIB for UDP
RFC 2096 IP Forwarding Table MIB
RFC 2233 Interface MIB
RFC 2273 SNMP-NOTIFICATION-MIB
RFC 2452 IPV6-TCP-MIB
RFC 2454 IPV6-UDP-MIB
RFC 2465 IPv6 MIB
RFC 2466 ICMPv6 MIB
RFC 2571 SNMP Framework MIB
RFC 2572 SNMP-MPD MIB
RFC 2573 SNMP-Notification MIB
RFC 2618 RADIUS Client MIB
RFC 2620 RADIUS Accounting MIB
RFC 2665 Ethernet-Like-MIB
RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
RFC 2688 MAU-MIB
RFC 2787 VRRP MIB
RFC 2819 RMON MIB
RFC 2925 Ping MIB
RFC 2933 IGMP MIB
RFC 3414 SNMP-User based-SM MIB
RFC 3415 SNMP-View based-ACM MIB
RFC 3418 MIB for SNMPv3
RFC 3636 IEEE 802.3 MAU MIB
RFC 3826 AES for SNMP's USM MIB
RFC 4133 Entity MIB (Version 3)
RFC 4878 Ethernet OAM MIB
LLDP-EXT-DOT1-MIB
LLDP-EXT-DOT3-MIB
LLDP-MIB

Safety and Compliance	Complies with UL 60950-1, CAN/CSA C22.2 No. 60950-1 and EN 60950-1. UL certified.
Safety Certifications	CE Marking RoHS 6/6 compliant

Electromagnetic	FCC Part 15 Class A
Emissions Certifications	EN 55022: 1998 (CISPR22)
FCC Part 15 Class A	EN 55024: 1998 (CISPR24) VCCI Class A AS/NZS 3548 Class A CE CNS 13438 Class A MIC MIC

Technical Specifications

**Environment-friendly
Products and Approach****End-of-life Management
and Recycling**

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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