Overview

The HP 6125XLG Ethernet Blade Switch is the next generation Ethernet blade switch from HP Networking. Built with the enterprise data center in mind, the HP 6125XLG is architected to deliver 880G of switching performance for the most demanding applications. The HP 6125XLG is based on HP Comware v7 network operating system, which delivers enterprise grade resiliency The 6125XLG is designed for data center convergence with full support for IEEE Data Center Bridging (DCB) for lossless Ethernet, and Fibre Channel over Ethernet (FCoE) protocols. With support for IETF industry standard TRILL (Transparent Interconnection of Lots of Links), the HP 6125XLG delivers loop free large Layer 2 networks with multi-path support. With HP's Intelligent Resilient Framework (IRF) multiple switches can be virtualized and managed as a single entity with HP's Intelligent Management Center (IMC). The HP 6125XLG is the industry's first blade witch with VEPA (Virtual Ethernet Port Aggregation) support, enabling customers to unify the management of their physical and virtual networks. Combine these features with Virtual Application Network (VAN) and your data center provides the benefits of versatility of a true Virtualized Network. HP 6125XLG Ethernet Blade Switch provides flexibility, versatility, and resiliency making it the optimal choice for any blade switching environment.
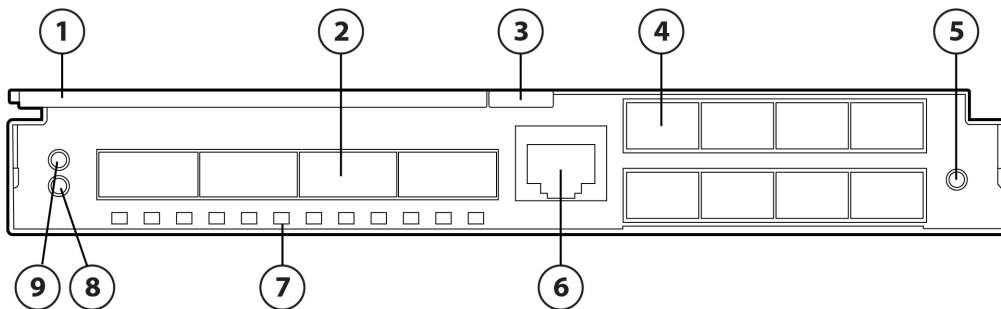

Figure 1 HP 6125XLG Blade Switch

1. Ejector Lever
2. Four (4) 40 GbE (QSFP+) ports
3. Release tab
4. Eight (8) 10 GbE (SFP+) ports
5. Reset button
6. Console port
7. Port LED
8. Health LED
9. Unit ID (UID) LED

Models

HP 6125XLG Ethernet Blade Switch	711307-B21
HP 6125XLG Ethernet Blade Switch with TAA	737230-B21

Overview

Compatibility

HP ProLiant Servers	HP ProLiant BL420c Gen8
	HP ProLiant BL460c Gen8
	HP ProLiant BL465c Gen8
	HP ProLiant BL660c Gen8
	HP ProLiant BL460 G7
	HP ProLiant BL465 G7
	HP ProLiant BL490 G7
	HP ProLiant BL620 G7
	HP ProLiant BL680 G7
	HP ProLiant BL685 G7
	NOTE: Some servers listed above may be discontinued.
HP Integrity Servers	HP Integrity BL860c i2 Server Blade
	HP Integrity BL860c i4 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 c7000 Enclosure

Standard Features

Performance
- 240Gb uplink bandwidth / 160Gb available server side bandwidth
- Dedicated 4x10Gb internal cross-connect ports between adjacent switches
- Non-blocking architecture
- Wire-speed switching and IPv4/IPv6 routing on all ports
- Supports FCoE (NPV)
- Combine up to 4 (8 future) switches into a single virtual switch
- QSFP+ ports support 4 x 10Gb with optional breakout cable
- SFP+ ports support either 1Gb or10Gb depending on module inserted
- Any port can be used for IRF connections
- Cut-through switching
- Hardware-based wire-speed access control lists (ACLs)
- Data Center Bridging (DCBX)
- Support for VEPA (IEEE 802.1Qbg)

Management
- Remote configuration and management CLI
- Standards-based SNMP management via SNMPv1, v2c and v3
- Out of band management via Onboard Administrator
- Virtual Application Network (VAN)
- RJ45 console port
- sFlow
- Manager and operator privilege levels
- Command authorization via RADIUS
- Complete session logging for problem resolution
- LLDP Discovery protocol
- IPv6 management
- Multiple 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
- Endpoint Admission Defense (EAD)
- RADIUS/TACACS+
- Secure management via SSHv2 and SNMPv3
- Unicast Reverse Path Forwarding (URPF)

Standard Features

Layer 2 Switching	• 128K MAC addresses • 4094 VLANs • IEEE 802.1ad QinQ VLANs • Jumbo frame support • Port Aggregation • Spanning Tree Protocol, MSTP, RSTP, STP Root Guard • IP Multicast Snooping and data-driven IGMP • Transparent Interconnect of Lots of Links (TRILL)
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 (with eight queues) - classifies traffic using multiple match criteria based on Layer 2, 3 and 4 information and 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 • 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

Standard Features

Security
- IPsec
- IKE (Internet Key Exchange)
- Disable password recovery

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

Optimized Care	**HP Proactive Care 3-Year 6-hour Call-to-Repair Response** 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 **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
Standard Care	**HP Proactive Care 3-Year 24x7 4-hour Response** 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.

Service and Support

Related Services	**HP Installation and Startup Service for HP BladeSystem c-Class Enhanced Network**
	HP Provides for the configuration and testing of BladeSystem Ethernet interconnect switches to facilitate proper implementation of network protocols and access to advanced features. http://h20195.www2.hp.com/V2/GetPDF.aspx/4aa0-5969ENW.pdf
	HP Proactive Care Personalized Support - Environmental Option
	The Personalized Support option provides an assigned Account Support Manager who can bring best practices from across the industry plus extra technical skills to your IT team. This option is only available as an add-on to HP Proactive Care Support.
	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://hp.com/go/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
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.
	Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

Service and Support

Service Coverage	The HP 6125XLG includes 3-years hardware support with next business day onsite response during standard business hours. If you have requirements for longer durations of service, faster response times or more comprehensive support, HP Care Pack services for the HP 6125XLG are available to uplift or extend your coverage.
For more information	To learn more about HP BladeSystem services, please contact your HP sales representative or HP Authorized ServiceONE Channel Partner. Or visit: www.hp.com/services/bladesystem

Related Options

SFP Options	HP X120 1G SFP LC SX 850nm Transceiver	JD118B
	HP X120 1G SFP LC LX 1310nm Transceiver	JD119B
	HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
	HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HP X125 1G SFP LC LH70 1550nm Transceiver	JD063B
	HP X120 1G SFP LC RJ45 T Transceiver	JD089B
	HP BLc 1Gb SFP LC SX 850nm Transceiver	453151-B21
	NOTE: Using these transceivers/cables will display a console warning on the switch. It is recommended that the warnings be disregarded when using these transceivers/cables.	
	HP BLc 1Gb SFP LC RJ45 T Transceiver	453154-B21
	NOTE: Using these transceivers/cables will display a console warning on the switch. It is recommended that the warnings be disregarded when using these transceivers/cables.	

SFP+ Options	HP X130 10G SFP+ LC SR 850nm Transceiver	JD092B
	HP X130 10G SFP+ LC LRM 1310nm Transceiver	JD093B
	HP X130 10G SFP+ LC LR 1310nm Transceiver	JD094B
	HP X130 10G SFP+ LC ER 1550nm Transceiver	JG234A
	HP BladeSystem c-Class 10G SFP+ LC SR 850nm Transceiver	455883-B21
	NOTE: Using these transceivers/cables will display a console warning on the switch. It is recommended that the warnings be disregarded when using these transceivers/cables.	
	HP BladeSystem c-Class 10G SFP+ LC LR 1310nm Transceiver	455886-B21
	NOTE: Using these transceivers/cables will display a console warning on the switch. It is recommended that the warnings be disregarded when using these transceivers/cables.	

QSFP+ Options	HP X140 40G QSFP+ MPO SR4 850nm Transceiver	JG325A

Direct Attach Cables	HP X240 10G SFP+ SFP+ 0.65m DAC Cable	JD095C
	HP X240 10G SFP+ SFP+ 1.2m DAC Cable	JD096C
	HP X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
	HP X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
	HP X240 10G SFP+ SFP+ 7m DAC Cable	JC784C
	HP X240 40G QSFP+ to QSFP+ 1m Direct Attach Copper Cable	JG326A
	HP X240 40G QSFP+ to QSFP+ 3m Direct Attach Copper Cable	JG327A
	HP X240 40G QSFP+ to QSFP+ 5m Direct Attach Copper Cable	JG328A
	HP X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
	HP X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
	HP X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A
	HP BladeSystem c-Class 10G SFP+ SFP+ 3m DAC Cable	487655-B21
	NOTE: Using these transceivers/cables will display a console warning on the switch. It is recommended that the warnings be disregarded when using these transceivers/cables.	
	HP BladeSystem c-Class 10G SFP+ SFP+ 7m DAC Cable	487658-B21
	NOTE: Using these transceivers/cables will display a console warning on the switch. It is recommended that the warnings be disregarded when using these transceivers/cables.	

Related Options

HP BladeSystem c-Class 10G SFP+ LC SR 850nm Transceiver   455883-B21
NOTE: Using these transceivers/cables will display a console warning on the switch. It is
recommended that the warnings be disregarded when using these transceivers/cables.
NOTE: The transceivers and cables listed above have been qualified and certified to
work with this product. Other transceivers 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 HP 6125XLG Proactive Care Service   U8K29E
HP 3-year 6-hour, 24x7, Call to Repair HP 6125XLG Proactive Care Service   U8K35E

Installation Services
HP Installation of ProLiant Add On/In Options Service   UH745E
HP Enhanced Network Installation and Startup Service for HP BladeSystem   UE603E
NOTE: Additional HP Care Pack services can be found at: http://hp.com/go/cpc

Technical Specifications

Shipping Dimensions	Length	11.54 in (293 mm)	
	Width	14.57 in (370 mm)	
	Height	3.54 in (95 mm)	
Shipping Weight	2.1 kg (4.62 lbs)		
Product Specifications Hardware	Performance	880Gbps throughput (8x10Gb and 4x40Gb uplink ports)	
		16x10Gb downlink (server) port	
		4 x10Gbps cross-connect ports	
		Forwarding rate	14.8 million pps per 10 Gig port
			59.2 million pps per 40 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/Cut Through
		Latency	1us (store and forward mode
		MAC Addresses	Supports 128K MAC addresses per switch in a BladeSystem Enclosure
		Forwarding Table Age Time (Maximum age)	10 to 1,000,000 seconds (default: 300 seconds)
		VLAN IDs	4094
		Jumbo Frame	10K Bytes
		IGMP Groups	1024
		Memory	2 GB Main, 512MB flash and 9MB packet buffer
	Connectors and Cabling	**Connector**	4 QSFP+ (40Gb/4 x10Gb/IRF)
			8 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 QSFP+ port link/activity, green SFP+ port link/activity, green	
	Dimensions	**Length**	10.54 in (267.7 mm)
		Width	7.59 in (192.8 mm)
		Height	1.1 in (27.9 mm)
	Weight	2.0 kg (4.41 lbs)	

Technical Specifications

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 10% to 90%
Power Specification	**Power Requirements**	95W

Standards Support

General protocols
IEEE 802.1ag Service Layer OAM
IEEE 802.1D MAC Bridges
IEEE 802.1p Priority
IEEE 802.1Q VLANs
IEEE 802.1Qbg Virtual Edge Bridging
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 802.1AX / 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)

FCoE
802.1Qaz DCBx
802.1Qaz ETS
802.1Qbb PFC

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

Technical Specifications

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

Layer 3
Static routes
RIP / RIPng
OSPF / OSPFv3
BGP / BGP+
IPv6 tunneling
PIM-SM
PIM-SSM
PIM-DM
IGMP
ECMP
Policy-based routing
DHCP and DHCPv6 client

MIBs
IEEE 8021ag CFM-MIB
IEEE 8021Q CFM-MIBv2
IEEE 8021AB LLDP-MIB
IEEE 8021AB LLDP-EXT-DOT1-MIB
IEEE 8021AB LLDP-EXT-DOT3-MIB
ANSI/TAA 1057 LLDP-EXT-MED-MIB
IEEE 8023 LAG-MIB
RFC 1213 MIB
RFC 1493 BRIDGE-MIB
RFC 2096 IP-FORWARD-MIB
RFC 2233 IF-MIB
RFC 2273 SNMP-NOTIFICATION-MIB
RFC 2571 SNMP-FRAMEWORK-MIB
RFC 2572 SNMP-MPD-MIB
RFC 2573 SNMP-TARGET-MIB
RFC 2674 P-BRIDGE-MIB
RFC 2674 Q-BRIDGE-MIB
RFC 3414 SNMP-USER-BASED-SM-MIB
RFC 3415 SNMP-VIEW-BASED-ACM-MIB
RFC 3417 SNMPv2-TM-MIB
RFC 3418 SNMPv2-MIB
RFC 3826 SNMP-USM-AES-MIB
RFC 4022 TCP-MIB
RFC 4044 FC-MGMT-MIB
RFC 4113 UDP-MIB
RFC 4133 ENTITY-MIB
RFC 4273 BGP4-MIB
RFC 4747 T11-FC-VIRTUAL-FABRIC-MIB
RFC 4750 OSPF-MIB
RFC 4750 OSPF-TRAP-MIB

Technical Specifications

RFC 4936 T11-FC-ZONE-SERVER-MIB
SFLOW-MIB (V5)

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

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

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.