## Overview

Designed for the c-Class BladeSystem enclosure, the HP 6120XG Blade Switch provides sixteen 10Gb downlinks and eight 10G SFP+ uplinks (including a dual personality CX4 and SFP+ 10G uplink, and two 10Gb cross-connects). A robust set of industry standard enhanced Layer 2 switching functions, QOS metering, security and High Availability features round out this extremely capable switch. The 6120XG is perfectly suited for datacenters migrating to 10G high performance architectures. With support of dual speed on 10G uplinks and Converged Enhanced Ethernet (CEE) capability, the 6120XG provides future proofing and investment protection. The 6120XG blade switch provides consistency and interoperability across existing network investments to help reduce the complexity of network management through resilient core-to-edge connectivity and automated provisioning technologies. With a variety of connection interfaces, the 6120XG switch offers excellent investment protection, flexibility, and scalability, as well as ease of deployment and reduced operational expense.
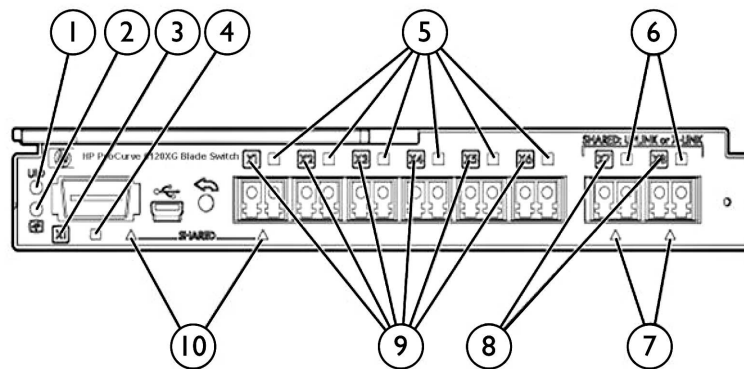
Figure 1 HP 6120XG Blade Switch

1. Switch locator UID
2. Switch status indicator
3. 10Gb CX4 backlit port number and status indicator LED
4. 10Gb CX4 link indicator
5. SFP+/SFP link indicators

6. SFP+/SFP link indicators
7. Active multiplexed port indicators
8. Backlit port number and status indicator LED
9. Backlit port number and status indicator LED
10. Active multiplexed port indicator

What's New

- Support for Converged Enhanced Ethernet
- Support for sFlow
- Support for Uplink Failure Detection
- The 6120XG now supports Cut Through Mode at 10GbE

Overview

At A Glance

Performance:

- Non blocking architecture
- Configurable for Store and Forward Switching or Cut Through Switching
- Wirespeed 16 x 10Gb downlinks to server NICs
- Wirespeed 2 x 10Gb cross connects for redundancy
- Wirespeed 1 x 10Gb copper uplinks CX-4 for uplinking to data center switches
- Wirespeed 8 x 10Gb SR, LR, or LRM fiber and copper SFP+ uplinks
- Line Rate, full-duplex 240Gbps bridging fabric

Management:

- Offers simplified management through CLI option
- Can be managed through HTTP, HTTPS,
- Standards based SNMP management via tools such as PCM and PCM+
- OOBM via Onboard Administrator
- USB console port
- Web and telnet management options available
- Automated provisioning via Datacenter Connection Manager (DCM)

Security:

- Port security based on 802.1x, web, mac authentication limits access to unwanted users
- Secured access through SSH and HTTPS (SSL), SFTP
- Offers RADIUS Authentication
- Offers TACACS+ Authentication
- Port security and mac address lockout for access control
- STP root guard and per-port broadcast throttling for protection against misbehaved traffic.

Models

HP 6120XG Blade Switch   516733-B21

Compatibility

HP ProLiant Servers
HP ProLiant BL685c G7
HP ProLiant BL685c G6
HP ProLiant BL685c G5
HP ProLiant BL680c G7
HP ProLiant BL680c G5
HP ProLiant BL660c Gen8
HP ProLiant BL620c G7
HP ProLiant BL495c G6
HP ProLiant BL495c G5
HP ProLiant BL490c G7
HP ProLiant BL490c G6
HP ProLiant BL480c
HP ProLiant BL465c Gen8
HP ProLiant BL465c G7
HP ProLiant BL465c G6
HP ProLiant BL465c G5
HP ProLiant BL460c Gen8
HP ProLiant BL460c G7
HP ProLiant BL460c G6
HP ProLiant BL460c G5
HP ProLiant BL460c
HP ProLiant 420c Gen8
HP ProLiant BL280c G6
HP ProLiant BL260c G5
HP ProLiant BL2x220c G7
HP ProLiant BL2x220c G5
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.

HP ProLiant BL c-Class Server Blade Enclosures
HP BladeSystem c3000 Enclosure
HP BladeSystem c7000 Enclosure

Compatibility

Required Network Cabling	10Gb	Multimode fiber cable; 62.5/125 or 50/125 microns Singlemode fiber cable: 9/125 micron

The following CX4 cable lengths have been qualified and can be purchased directly from HP. Please see the Related Options section of this QuickSpecs:

HP BladeSystem c-Class .5m 10-GbE CX4 Cable
HP BladeSystem c-Class 1m 10-GbE CX4 Cable
HP BladeSystem c-Class 3m 10-GbE CX4 Cable
HP BladeSystem c-Class 15m 10-GbE CX4 Cable

Maximum Distances	Multimode OM1 62.5/125 micron	Multimode OM2 50/125 micron	Multimode OM3 50/125 micron	Singlemode 9 micron
SR	2 - 26m/33m*	2 - 82m	2 - 300m	2 - 300m
LR	LR			2 -10km
LRM	0.5 - 220m	0.5 - 220m	0.5 - 220m	

* 26m at 160MHz and 33m at 200MHz.
NOTE: For additional information on 10Gb cable specifications go to:
http://www.hewlett-packard.com/rnd/pdfs/10gig_cabling_technical_brief.pdf

Service and Support

Service and Support	HP Care Pack Services: Packaged server and storage services for increased uptime, productivity and ROI
	When you buy HP server and storage products and solutions, it's also a good time to think about what levels of support you may need. Our portfolio of service options reduce deployment and management worries while helping you get the most out of your server and storage investments. We take a holistic approach to your environment, bridging servers, blades, storage, software and network infrastructures with our packaged HP Care Pack Services for servers and storage.
	Protect your business beyond warranty When it comes to robustness and reliability, standard computing equipment warranties have matured along with technology. Good news that can also create problems stemming from depending on standard warranties designed to only protect against product defects and some downtime causes. Using a standard approach to warranty uplifts, such as HP Care Pack Services, helps reduce downtime risks and provides operational consistency for mission-critical and standard business computing.
	HP Care Pack Services: Upgrading or extending standard server and storage warranties cost effectively HP Care Pack Services offer a standard reactive hardware and software support services suite sold separately, or combined with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of integrated proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition with HP Proactive Select, you can acquire the specific proactive constancy and technical services. HP Proactive Select menu offers a broad set of service options that you can mix and match depending on your specific requirements. Proactive service options include offers for server, storage, network, SAN device, software, environment and education services.
	HP server and storage lifecycle support services offers a full spectrum of customer care-from technology support to complex migrations to complete managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education Services offer flexible, comprehensive training on to help your IT staff get the most out of your server and storage investments. HP Financial solutions extend innovative financing and cost-effective asset management programs-from purchase to equipment retirement.
	Learn more: http://www.hp.com/services/servers and www.hp.com/services/storage
	NOTE: Care Pack Services availability may vary by product and country.
	HP Care Pack Services are sold by HP and HP Authorized Service Partners:
	• Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools. • Customers purchasing from a commercial reseller can find HP Care Pack Services at http://www.hp.com/go/lookuptool

Recommended HP Care Pack Services for optimal satisfaction with your HP product

Recommended Services	**Hardware Options Support**
	HP Care Packs provide support for all HP-branded hardware options qualified for inclusion in your server or storage solution. Any additional HP-qualified options installed within the server are covered at the same service level and for the same period as the server and no additional cost.
	The benefits include:

Service and Support

- Help improve or maintain system uptime
- Convenient onsite support
- Committed response time

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE

3-Year HP Hardware Support Onsite Service, 4-hour response, 24x7

Provides you with rapid remote support and if required an HP authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.

This service provides a trained HP service specialist to perform an installation that meets HP quality standards, for:

- Help improve or maintain system uptime
- Convenient onsite support
- Committed response time

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE

HP Installation and Startup of HP ProLiant Servers

Provides for the installation of your new HP ProLiant server and operating system to assist you in bringing your new HP ProLiant server and operating system into operation in a timely and professional manner.

This service provides a trained HP service specialist to perform an installation that meets HP quality standards, for:

- Delivery of the service at a mutually scheduled time convenient to your organization
- Availability of an HP service specialist to answer basic questions during the onsite delivery of this service
- Custom installation as detailed in "Delivery specifications" or in a Statement of Work (SOW)
- Verification prior to installation that all service prerequisites are met

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982?7572ENN

Optional HP Care Pack Services that will enhance your HP product experience

Optional Services

3-Year HP Hardware Support Onsite Call-to-Repair (CTR) Service, 6- or 24-hour

As an alternative to our recommended support level, for customers who need committed call-to-repair for server hardware.

Provides your IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 or 24 hours of the initial service request to the HP Global Solution Center.

http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf

3-Year HP Support Plus 24

As an alternative to our recommended support level, for customers who need access to responsive 24x7

Service and Support

hardware and software support plus software updates on HP and selected third party products.

For a higher return on your server and storage technology, our 3-year combined reactive support service delivers integrated onsite hardware/software support services available 24x7x365, including access to HP technical resources, 4-hour response onsite hardware support and software updates.

http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EEE

HP Proactive Select Service

Customer needs on demand access to consulting, technical proactive services and education courses

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

eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

Support Portal
The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: http://www.hp.com/support

HP Insight Remote Support software delivers secure remote support for your HP Servers and Storage, 24 X 7, so you can spend less time solving problems and more time focused on your business. You can have your systems remotely monitored for hardware failure using secure technology that's been proven at thousands of companies around the world. In many cases, you can avoid problems before they occur.

Customer Technical Training

HP Education Services
In today's cost-conscious business environment, IT professionals, developers, consultants and users face an interesting challenge: how to keep up with the latest technologies and expand important skills while delivering profitable results on current projects. To help address this challenge, HP offers innovative training solutions that help keep you up-to-date on virtualization, server, storage, Insight Control, Citrix, Microsoft® and open source/Linux-related topics-while spending less time away from business-critical activities.

Service and Support

HP Services Awards	HP Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction.

Additional Services Information	To learn more on HP ProLiant servers, HP BladeSystem servers and HP storage products, please contact your HP sales representative or HP Authorized Channel Partner. Or visit www.hp.com/services/proliant or www.hp.com/services/bladesystem or www.hp.com/services/storage

Related Options

HP Cable and Transceiver Options	HP BladeSystem c-Class .5m 10-GbE CX4 Cable Option	444477-B21
	HP BladeSystem c-Class 1m 10-GbE CX4 Cable Option	444477-B22
	HP BladeSystem c-Class 3m 10-GbE CX4 Cable Option	444477-B23
	HP BladeSystem c-Class 15m 10-GbE CX4 Cable Option	444477-B27
	HP BladeSystem c-Class Small Form-Factor Pluggable .5m 10GbE Copper Cable	487649-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 1m 10GbE Copper Cable	487652-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 3m 10GbE Copper Cable	487655-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 5m 10GbE Copper Cable	537963-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 7m 10GbE Copper Cable	487658-B21
	HP BladeSystem c-Class 10Gb Short Range Small Form-Factor Pluggable Option	455883-B21
	HP BladeSystem c-Class 10Gb Long Range Small Form-Factor Pluggable Option	455886-B21
	HP BladeSystem c-Class 10Gb Long Range Mode Small Form-Factor Pluggable Option	455889-B21
	HP BLc Virtual Connect 1Gb SX Small Form Factor Pluggable Option Kit	453151-B21
	HP BLc Virtual Connect 1Gb RJ-45 Small Form Factor Pluggable Option Kit	453154-B21
	HPN Cable and Transceiver Options	
	HP X132 10G SFP+ LC SR Transceiver	J9150A
	HP X132 10G SFP+ LC LR Transceiver	J9151A
	HP X132 10G SFP+ LC LRM Transceiver	J9152A
	HP X242 SFP+ SFP+ 1m Direct Attach Cable	J9281B
	HP X242 SFP+ SFP+ 3m Direct Attach Cable	J9283B
	HP X242 SFP+ SFP+ 7m Direct Attach Cable	J9285B
	HP X242 SFP+ to SFP+ 10m Direct Attach Copper Cable	J9286B
	HP X242 SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B
HP Software Options	HP 6120XG Switch Converged Enhanced Ethernet License	608074-B21
	NOTE: Converged Enhanced Ethernet requires the purchase of the HP 6120XG Switch CEE License (PN 608074-B21).	

Related Options

HP Care Pack Services

NOTE: The HP Care Pack service part numbers below for ProLiant BL c-Class server blades, cover the server blade and all HP branded hardware options qualified for the server, purchased at the same time or afterwards, internal to the server.

Hardware Services On-site Service

HP 3year 4hour 13x5 c-Class Server Blade HW Support	UE458E
HP 3year 4hour 24x7 c-Class Server Blade Hardware Support	UE459E
HP 3year 6hour 24x7 Call to Repair c-Class Server Blade Hardware Support	UE460E

Support Plus 24

HP 3year SupportPlus24 Microsoft c-ClassServer Blade Service	UE473E

NOTE: HP Care Pack services for the c7000 and c3000 Enclosure 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, Ethernet interconnect and virtual connect modules are also covered by the c7000 and c3000 enclosure Care Pack services.

NOTE: SAN/Fabric switches for the HP c-Class BladeSystem are not covered under the c7000 and c3000 enclosure Care Packs, SAN/Fabric switches carry separate Care Packs. SAN/Fabric Switch Care Pack service level support should always be uplifted to match existing storage or server service level.

Hardware Support Services On-site Service

HP 3 year Next business day c7000 Enclosure Hardware Support	UE477E

NOTE: Uplifts the Ethernet devices to the same level of warranty as the c-class enclosure.

HP 3 year 4 hour 13x5 c7000 Enclosure Hardware Support	UE478E
HP 3 year 4 hour 24x7 c7000 Enclosure Hardware Support	UE479E
HP 3 year 6 hour 24x7 Call to Repair c7000 Enclosure Hardware Support	UE480E

Installation & Start-up Services

HP Startup Blade System c-Class Infrastructure Service	UE602E
HP Startup Blade System c-Class Enhanced Network Service	UE603E
HP Install c-Class Server Blade Service	UE493E
HP Install c-Class Enclosure & ServerBlade Service	UE494E

NOTE: For more information, customer/resellers can contact:
http://www.hp.com/services/bladesystemservices

Technical Specifications

Shipping Dimensions	**Length**	13.88 in (352.55 mm)
	Width	10.63 in (270.00 mm)
	Height	4.75 in (120.65 mm)
Shipping Weight		4.4 lbs (2.0 kg)
Product Specifications Hardware	**Performance**	80 Gbps external port bandwidth per BladeSystem enclosure (160 Gbps full duplex) 480Gb total throughput
		Forwarding rate 357.1million pps (64-byte packets)
		Non-blocking, full-wire speed for all connections Auto-MDI/MDIX, auto-negotiation and auto-sensing with full-duplex support.

	Forwarding Mode	Configurable for Store and forward or Cut Through
	Latency	1.8uS (FIF64 byte packets) (store and forward mode)
	MAC Addresses	Supports 16K MAC addresses per switch in a BladeSystem Enclosure
	Forwarding Table Age Time (Maximum age)	1 to 1,000,000 seconds (default: 300 seconds)
	Jumbo Frame Support	9220 Byte
	Multicast Groups	256
	Memory	512 MB Main, 640MB flash and 2MB packet buffer per interconnect switch
	Routing Table Size	*
Connectors and Cabling	**Connector**	8 10Gb SR, LR, or LRM fiber uplinks SFP+ slots
		1 10Gb CX4
		1 mini USB Management
		16 x 10Gb downlinks midplane
		2 x 10Gb cross connect
	Cable Support	FCC Class A
		ICES-003 Class A
		AS/NZS 3548 Class A
		VCCI Class A
Network Transfer Rate	**10 Base-T (half-duplex)**	10 Mbps
	10 Base-T (full-duplex)	20 Mbps
	100 Base-TX (half-duplex)	100 Mbps
	100 Base-TX (full-duplex)	200 Mbps
	1000 Base-TX (half and full-duplex)	2000 Mbps
	10Gb (full duplex)	20000 Mbps
Indicators		Recessed Momentary Reset Switch

Technical Specifications

Momentary Next/Step Switch
Backlit port number and status indicator LED, one per bulkhead port,
blue/amber/green
Module status indicator, amber/green
Module locator (UID), blue
Link indicator, one per CX4-port, green
Link indicator, one per SFP+-port, green/amber
USB port
Active multiplexed port indicator, green

Dimensions	**Length**	10.5 in (267.7 mm)
	Width	7.5 in (192.79 mm)
	Height	1.1 in (27.94 mm)
Weight		1.27 kg (2.8 lbs)
Environmental Ranges	**Temperature Range**	
	Operating	50° to 95° F (10° to 35° C)
	Non-operating	-40° to 140° F (-40° to 60° C)
	Relative Humidity (non-condensing)	Operating 10% to 90%
Power Specification	**Power Requirements**	12V @ 8.75A (105 W) (per interconnect switch)

Product Specifications Software	**Security Features**	**SSHV2, TACACS and TACACS+**

VLANs can be configured to provide segregation for data - improving bandwidth, performance and limiting traffic to its designated domains. The Switch also provides secured access through SSH v2, protecting against IP spoofing as well as DNS spoofing. Support of HTTPS, RADIUS TACACS and TACACS+ enables users to meet their security requirements.

Spanning Tree Features   **802.1d, 802.1w, 802.1 s**

Industry standard Spanning Tree provides redundancy and the loop avoidance capabilities to keep the network not only up, but operating at peak performance.

Based on the industry standard 802.1w, Rapid Spanning Tree Protocol (RSTP) offers fast convergence - reducing packet loss and downtime in high-availability and high resilient networks. Industry-standard based RSTP offers instant failover to secondary links in an unlikely event of primary link failure. This switch also offers Multiple Spanning Tree Protocol (MSTP; 802.1s) for seamless integration into networks running 802.1s. Multiple Spanning Tree enables networks to utilize individual uplinks for separate VLANs thus improving the overall performance of the network. Up to 16 Spanning Tree Groups (STGs) are supported.

Trunking Features   **802.3 ad**

Reduced downtime in an unlikely event of link failure by supporting link aggregation protocol. This link aggregation is compatible with Cisco Etherchannel® thus providing seamless integration into Cisco® based networks.

Technical Specifications

VLAN Features	VLANs (802.1Q) can be configured to provide segregation for data - improving bandwidth, performance and limiting traffic to its designated domains.
Management Features	This switch provides multiple easy-to-use configuration and management options. The management interface enables administrators to easily configure the most advanced features such as Rapid Spanning Tree and SNMP management by pointing and clicking. The switch also enables sophisticated administrators to configure and manage the switch through SNMP. Full Support is provided for SNMP v1,v2c and v3.
QoS Features	Data can be classified into 2, 4, or 8 hardware priority queues to ensure maximum bandwidth availability for time sensitive and mission critical traffic. Data can be prioritized based on 802.1p CoS and DSCP. Priority can be assigned per vlan, per port, and globally. Data can be easily reclassified from 802.1p to DSCP or from DSCP to 802.1. The HP 6120XG Blade Switch adheres to a strict queue mechanism to ensure important business-sensitive traffic is delivered ahead of other traffic.
Converged Fabric Features	The HP 6120XG supports Converged Enhanced Ethernet (also referred to as Data Center Bridging) on all 24 ports. **NOTE:** Converged Enhanced Ethernet requires the purchase of the following FW license: HP 6120XG Switch CEE License (PN 608074-B21). **NOTE:** Converged Enhanced Ethernet requires the use of a G7 server with a FlexFabric LOM or the addition of the NC551m or NC553m FlexFabric Adapters.

Standards Support

IEEE 802.1D MAC Bridges	Supported 16K MAC entries 2MB Packet memory 640 MB flash memory
IEEE 802.1p Priority	Supported 4 default HW queues to map to 8 802.1p packet priority queues (can be configured for 2, 4, or 8 hardware queues to be mapped to 8 802.1p priority queues)
IEEE 802.1Q VLANs	Supported 1024 VLANs, 4K VLAN IDs 802.1Q Tagged VLAN GVRP is supported for VLAN registration
IEEE 802.1v VLAN classification by Protocol Port	Support is for 3 protocols per port
VLAN Classification by IP, MAC	Not Supported **NOTE:** This is the ability to auto classify VLAN membership of a frame via its IP, or its MAC.
QoS	Supported for DSCP, CoS

Technical Specifications

IEEE 802.1w Rapid Reconfiguration of Spanning Tree	Supported 32 Spanning Tree Instances in FW RPVST+ not supported
IEEE 802.1s Multiple Spanning Tree	Supported 32 MSTP Instances PVSTP+ is not supported
BPDU Protection and STP root guard	Supported BPDU guard STP root guard
IEEE 802.3ad Link Aggregation Control Protocol (LACP)	Supported Up to 24 trunks with 8 members per trunk LACP is supported
IEEE 802.3x Flow Control	Supported Auto Negotiation is also supported
RFC 792 ICMP	Supported
Rate Limiting	Ingress Rate Limiting supported
Broadcast Throttling	Supported One global configuration for all the ports
RFC 951 BOOTP & RFC 1542 BOOTP Extensions	Supported Includes DHCP on OA port
RFC 2030 Simple Network Time Protocol (SNTP)	Supported Includes configurable Daylight Savings Timep supported
RFC 2131 DHCP	Supported
QoS (COS, TOS, DSCP)	Supported
TFTP, SFTP	Supported (FTP not supported)
Uni-Directional Link Detection	Supported
IPv6 Host	Supported
IPv4 Static Routes	Supported (256 routes)
RIPv2	Supported
Uplink Failure Detection	Supported

Converged Enhanced Ethernet

802.1Qaz - Data Center Bridging Capability Exchange Protocol (DCBX)	Proposal 1.01, Nov 2008**
802.1Qbb - Priority-based Flow Control;	Draft 1.2, Dec 2009
802.1Qaz - Enhanced Transmission Selection;	Proposal 1.01, Nov 2008; Draft 1.1, Nov 2009
CEE support on trunked ports	Supported

IP Multicast

Technical Specifications

RFC 3376 IGMPv3 (Data Driven)	Full IGMP v1, v2

Network Management

IEEE 802.1AB Link Layer Discovery Protocol (LLDP)	Supported
ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)	Supported
RFC 3164 BSD syslog Protocol	Supported Up to 6 syslog servers
SNMPv1/v2c/v3	Supported

Device Management

HTML and telnet management	Supported
Authorized Managers List	Supported
Onboard Administrator ISMIC integration (musts per spec)	Supported

Security

IEEE 802.1X Port Based Network Access Control	Supported Up to 32 users on a single port
Web Authentication	Supported **NOTE:** This is used to login to the network port, not to the HTML web agent on the switch.
Mac Authentication	Supported
Concurrent 802.1X, Web, and MAC auth	Supported
TACACS+ & RADIUS	Supported
Secure Sockets Layer (SSL)	Supported
SSHv1/SSHv2 Secure Shell	Supported **NOTE:** Also supports SCP for configuration and FW downloads.
Port Security, MAC Address lock down, MAC Address Lock outs	Supported
DHCP Snooping	Supported
Dynamic ARP protect	Supported
CLI ACLs	Supported
IDM ACLs	Supported

Monitor and Diagnostics

Port Mirroring	Supported
RFC3176 SFlow	Supported
RMON	Supported RMON V1/V2 **NOTE:** Groups supported are Statistics, history, alarms, and events.

Technical Specifications

Safety and Compliance Safety Certifications	TUV to UL 60950-1, and CAN/CSA C22.2 No. 60950-1 and to EN 60950-1
	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.