

# HP BladeSystem PC Blade Switch Overview



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# HP BladeSystem PC Blade Switch Overview

## Wire-Speed Performance

The HP BladeSystem PC Blade Layer 2 switches deliver advanced security and enterprise-class management features. These switches deliver impressive switching capacities of up to 12.8 Gbps and can be deployed in a wide number of different network deployment scenarios, including Fast Ethernet, edge client connectivity, and wiring closet deployments. Because these switches adhere stringently to industry standards, they can be deployed with other industry-standard compliant networking devices.

## Easy, Powerful Management

The HP BladeSystem PC Blade Switch supports a number of industry-standard management interfaces such as web-based management, Command Line Interface (CLI), and Simple Network Management Protocol (SNMP v1/v2c/v3). For large network environments, HP's SIM™ provides management control to more easily configure large numbers of deployed switches. HP Systems Insight Manager merges the best features of Insight Manager, Tootools, and Servicecontrol Manager to deliver unified management of HP hardware products

## Robust Security

Advanced security features of the HP BladeSystem PC Blade Switches help protect the network from accidental or malicious interference. MAC-based port security and MAC-based Access Control Lists (ACLs) are designed to prevent unauthorized MAC addresses from accessing the network. SNMPv3, SSL and SSH encryption offer the added security of encrypting switch management traffic. RADIUS and TACACS+ support enables centralized, remote authentication of administrative access to the switch. Management access filtering provides a mechanism to limit network hosts that have access to the switches using a wide array of options, such as MAC address, IP address, and VLAN. Edge authentication using IEEE 802.1x provides a meaningful security solution which is centralized and easier to manage than standard ACLs. Now, users can be added to a RADIUS database and allowed access to the network. Others, who do not have proper credentials, will not have access to the network.

## Advanced Switching Features

The HP BladeSystem PC Blade Switches support a variety of standards-based advanced switching features, allowing a network administrator to optimize traffic flow in the network. Up to 256 VLANs are supported, enabling limitation of broadcast domains as well as improved network security. These switches support the industry-standard IEEE 802.1p protocol and prioritize traffic based upon Layer 2 and Layer 3 information. Other advanced features include port mirroring, dynamic link aggregation (LACP), STP and IP multicast support. These capabilities help increase deployment flexibility, better enable CCI deployments and help protect networking infrastructure investments.



## High Availability

The HP BladeSystem PC Blade Switches offers several high availability features to meet enterprise networking needs. Multiple Spanning Tree Protocol and Rapid Spanning Tree Protocol support help improve network availability. These industry standard protocols provide redundancy in the event of network outages even across large networks with many VLANs.

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## HP BladeSystem PC Blade Switch Key Features

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### Port configuration

- 42 10/100BASE-T ports
- 4 RJ-45 10/100/1000BASE-T ports
- 4 SFP slots for fiber media support (disables Copper)
- 802.3u & 802.3ab Auto-negotiation for speed, duplex mode and 802.3x flow control; Auto MDI/MDIX on uplink ports
- Port mirroring; Broadcast storm control; Cable Tester

### Performance

- Switching capacity 12.8 Gbps
- Forwarding rate 9.5 Mpps
- Up to 8,000 MAC addresses

### Management

- Web-based management interface
- Industry-standard CLI accessible via Telnet or Local Serial Port
- SNMPv1, SNMPv2c and SNMPv3 supported; four RMON groups supported (history, statistics, alarms and events)
- TFTP transfers of firmware and configuration files
- Dual firmware images on-board
- Multiple configuration file upload/download supported
- Statistics for error monitoring and performance optimization including port summary tables
- BootP/DHCP IP address management supported
- Secure Telnet (SSH)

### Quality of service

- Layer 2 trusted mode (IEEE 802.1p tagging); Layer 3 trusted mode (DSCP); 4 priority queues per port; Adjustable Weighted-Round-Robin (WRR) and strict queue scheduling
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<b>Security</b>	<ul style="list-style-type: none"> <li>• IEEE 802.1x based edge authentication</li> <li>• Switch access password protection</li> <li>• User-definable settings for enabling or disabling Web, SSH, Telnet, SSL management access</li> <li>• Port-based MAC address alert and lock-down</li> <li>• IP address filtering for management access via Telnet, HTTP, HTTPS/SSL, SSH and SNMP</li> <li>• RADIUS and TACACS+ remote authentication for switch management access</li> <li>• SSLv3 and SSHv2 encryption for switch management traffic; Management access filtering via management access profiles</li> </ul>
<b>VLAN</b>	<ul style="list-style-type: none"> <li>• VLAN support for tagging and port-based as per IEEE 802.1Q; Up to 256 VLANs supported</li> <li>• Dynamic VLAN with GVRP support; Private VLANs</li> </ul>
<b>Switching features</b>	<ul style="list-style-type: none"> <li>• Link aggregation with up to four aggregated links and up to four member ports per aggregated link (IEEE 802.3ad); LACP support (IEEE 802.3ad)</li> </ul>
<b>Availability</b>	<ul style="list-style-type: none"> <li>• Spanning Tree (IEEE 802.1D) and Rapid Spanning Tree (IEEE 802.1w) with Fast Link Support</li> <li>• Multiple Spanning Trees (IEEE 802.1s)</li> <li>• Static IP multicast; IGMP snooping for IP multicast support</li> </ul>
<b>Peripheral products</b>	<ul style="list-style-type: none"> <li>• HP SX SFP Transceiver (available as an option)</li> </ul>
<b>Layer 2 multicast</b>	<ul style="list-style-type: none"> <li>• Static IP multicast; IGMP snooping for IP multicast support</li> </ul>

## HP BladeSystem PC Blade Switch - HP e-Class GbE Switch Feature Comparison

Switch	HP eClass GbE Switch (previous generation)	HP BladeSystem PC Blade Switch (current generation)
<b>Form Factor</b>	Integrated within enclosure	Integrated within enclosure
<b>Switch Architecture</b>	Dual 24 port 10/100	Single 42 port 10/100
<b>Uplink Ports</b>	2x - 2 Gbs Copper	4 Gbs Copper + 4 SFP slots
<b>Modular Uplink ports</b>	No	Yes
<b>Blade Ports</b>	40 - 10/100 (2x 20 - 10/100)	40 - 10/100
<b>Interconnect Ports</b>	2 - 100Mbs	None needed
<b>IA Ports</b>	1 - 100Mbs	1 - 100Mbs
<b>Patch Panel support</b>	Yes (40 RJ45 connectors)	Yes (40 RJ45 connectors)
<b>RoHS Compliant</b>	No	Yes
<b>NonBlocking</b>	No	Yes
<b>MAC address</b>	2x 8191	8K+
<b>VLANs supported</b>	256	1024
<b>Layer</b>	Layer 2	Layer 2+ minimum
<b>Spanning Tree Support</b>		
<b>802.1d (STP)</b>	Yes	Yes
<b>802.1s (MSTP)</b>	No	Yes
<b>802.1w (RSTP)</b>	No	Yes
<b>802.1Q VLAN</b>	Yes	Yes
<b>802.1P QOS</b>	No	Yes
<b>802.1x Authentication</b>	Yes	Yes
<b>IP Ping/802.2 Link Test</b>	Yes	Yes
<b>802.3ad Link Aggregation</b>	Yes	Yes
<b>802.3x Flow Control (TX &amp; RX)</b>	Yes	Yes
<b>Auto-Neg. 802.3u, 802.3ab</b>	Yes	Yes
<b>GVRP</b>	Yes	Yes
<b>Port Mirroring</b>	Yes	Yes
<b>Port base QoS</b>	Yes	Yes
<b>DHCP Relay</b>	No	Yes
<b>Layer 4 packet Class.</b>	No	Yes



# HP BladeSystem PC Blade Switch Q&A

**Q:** What is it?

**A:** The HP BladeSystem PC Blade switch provides signal aggregation for all 20 Blade PCs within a HP BladeSystem PC Blade enclosure.

**Q:** Why should a customer want it?

**A:** The HP PC Blade Switch is required hardware for a Consolidated Client Infrastructure deployment.

**Q:** What does it cost?

**A:** As product has not yet launched, pricing is TBD. Pricing will be similar to the existing HP e-Class GbE Interconnect Switch.

**Q:** How is it ordered?

**A:** You can order the HP BladeSystem PC Blade Switch in two ways, either preinstalled in a PC Blade enclosure (PN: PX829AW), or as a switch-only SKU (PN: PX830AW).

**Q:** What alternatives exist?

**A:** The existing HP e-Class GbE Interconnect Switch will still be available during product transition.

**Q:** What are the advantages of using a HP BladeSystem PC Blade Switch in a PC Blade Enclosure?

**A:** The advantages are:

- Pre-configured, optimized, and tested specifically for HP blade PCs
- Up to 98% network cable reduction at rear of PC blade enclosure
- RDP and HP SIM integration
- Occupies no additional rack space
- Redundant power and cooling

**Q:** What advantages does the New HP BladeSystem PC Blade switch have over the existing PC Blade Switch?

**A:** The advantages are:

- Support up to four Fiber-Optic Ethernet uplinks
- More Spanning Tree Protocols supported
- Easier to set up and configure
- Improved management tools



## Industry Standard, HP, and Cisco Terminology Reference

The table below provides groups of related terminology and protocols that are commonly used by HP, Cisco, and the network market in general.

Industry Standard Term/Protocol	HP Term(s)/Protocol(s)	Cisco Term(s)/Protocol(s)	Other Term(s)/Protocol(s)
VLAN tagging	VLAN tagging, tagged port	trunking, VLAN trunking, VLAN trunks, 802.1Q trunk	
port mirroring	port mirroring	port mirroring, SPAN, RSPAN	analyzer port
spanning tree	spanning tree, STP	spanning tree, STP	
IEEE 802.1D	IEEE 802.1D	IEEE 802.1D	mono-spanning tree, single spanning tree domain
IEEE 802.1s	IEEE 802.1s	IEEE 802.1s	multiple spanning tree, spanning tree domain per VLAN
IEEE 802.1W	IEEE 802.1W	STP UplinkFast, IEEE 802.1W, Backbone Fast	rapid spanning tree protocol
	STP PortPass	STP PortFast	STP fast forward, STP direct
	PVST Interop	PVST or PVST+, Per VLAN Spanning Tree or Per VLAN Spanning Tree Plus	PVST, Per VLAN Group Spanning Tree (Nortel)
trunking, link aggregation	trunking, port trunking, link aggregation	EtherChannel, Fast EtherChannel, Giga EtherChannel, channeling, link aggregation	multi-link trunking
IEEE 802.3ad without LACP, static 802.3ad	IEEE 802.3ad without LACP, static 802.3ad	EtherChannel, Fast EtherChannel, Giga EtherChannel, channeling, link aggregation	static IEEE 802.3-2000, IEEE 802.3-2000 without LACP
IEEE 802.3ad, dynamic 802.3ad, LACP (Link Aggregate Control Protocol)	IEEE 802.3ad, dynamic 802.3ad, LACP (Link Aggregate Control Protocol)	IEEE 802.3ad, dynamic 802.3ad, LACP (Link Aggregate Control Protocol)	IEEE 802.3-2000, dynamic 802.3-2000, IEEE 802.3-ad with LACP, IEEE 802.3-2000 with LACP

<b>Industry Standard Term/Protocol</b>	<b>HP Term(s)/Protocol(s)</b>	<b>Cisco Term(s)/Protocol(s)</b>	<b>Other Term(s)/Protocol(s)</b>
RADIUS, AAA Server	RADIUS, AAA Server	TACACS, TACACS+, RADIUS, Kerberos	authorization, authentication, and accounting
NTP (network time protocol) SNTP (simple network time protocol)	SNTP, NTP	NTP	network time service
QoS IEEE 802.1p	QoS IEEE 802.1p	QoS, QoS IEEE 802.1p	CoS IEEE 802.1p, quality of service, class of service, bandwidth reservation
multicast service, IGMP v1/v2, IGMP snooping	IGMP v1/v2, IGMP snooping	IGMP v1/v2, IGMP snooping GMRP, RGMP	Multicasting
access control list (ACL), port security, filtering	filters, packet filtering, priority MAC, MAC address filtering	ACL, traffic filter, port security	IP ACL, restricted access
GVRP (GARP VLAN registration protocol)	GVRP	GVRP, VTP (VLAN trunk protocol), VTP domain	Dynamic VLAN registration and creation

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430700-001, 4/2006

