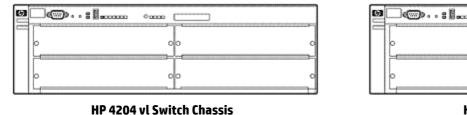
Overview

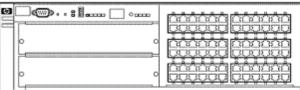


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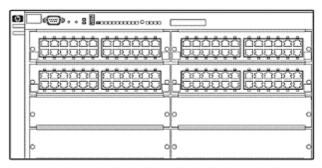
HP 4208 vl Switch Chassis

0,0000 (

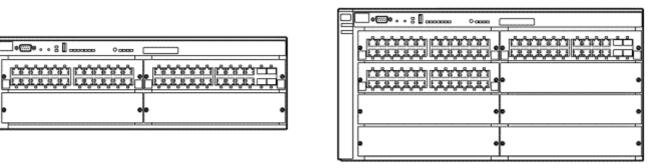
HP 4204-44G-4SFP vl Switch



HP 4202-72 vl Switch



HP 4208-96 vl Switch



HP 4208-68G-4SFP vl Switch

Models	
HP 4204 vl Switch Chassis	J8770A
HP 4202-72 vl Switch	J8772B
HP 4208 vl Switch Chassis	J8773A
HP 4208-96 vl Switch	J8775B
HP 4204-44G-4SFP vl Switch	J9064A
HP 4208-68G-4SFP vl Switch	J9030A



Overview

Key features

- Access layer
- Layer 2 plus Static IP routing
- Scalable 10/100/1000 connectivity
- 10-GbE uplinks

Product overview

The HP 4200 vl Switch Series consists of modular chassis that provide a flexible, cost-effective LAN solution as an alternative to stackables. These switches offer a proven chassis form factor with high quality and reliability in 10/100, 10/100/1000, and 10-Gigabit scalable solutions that integrate easily into any network.

Features and Benefits

Quality of Service (QoS)

- Traffic prioritization (IEEE 802.1p): allows real-time traffic classification into eight priority levels mapped to eight queues
- Class of Service (CoS): sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), Layer 3 protocol, TCP/UDP port number, source port, and DiffServ
- Layer 4 prioritization: enables prioritization based on TCP/UDP port numbers

Management

• Uni-Directional Link Detection (UDLD): monitors cable between two switches and shuts down the ports on both ends if the cable is broken, turning the bi-directional link into uni-directional; this prevents network problems such as loops

Connectivity

• Auto-MDIX: automatically adjusts for straight-through or crossover cables on all 10/100 and 10/100/1000 ports

Performance

• Architecture: up to 76.8 Gbps crossbar switching fabric provides wire-speed intra- and inter-module switching with up to 48 million pps throughput built on HP custom-designed ASIC technology

Resiliency and high availability

- IEEE 802.3ad Link Aggregation Control Protocol (LACP) and HP port trunking: support up to 60 trunks, each with up to 8 links (ports) per trunk
- IEEE 802.1s Multiple Spanning Tree Protocol: provides high link availability in multiple VLAN environments by allowing multiple spanning trees; encompasses IEEE 802.1D Spanning Tree Protocol and IEEE 802.1w Rapid Spanning Tree Protocol
- Hot-swappable modules: permit modules and mini-GBICs to be added or swapped without interrupting the network
- **Optional redundant power supply**: provides uninterrupted power; allows hot-swapping of one of the two supplies when installed

Manageability

- sFlow (RFC 3176): wire-speed traffic accounting and monitoring
- RMON and XRMON: provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- Dual flash images: provides independent primary and secondary operating system files for backup while upgrading



Overview

- Multiple configuration files: allows a configuration file to be stored to flash image
- Friendly port names: allow assignment of descriptive names to ports
- **Stacking capability**: single IP address management for a virtual stack of up to 16 switches, including the HP 2500 Series, 2510 Series, 2600 Series, 2800 Series, 2810 Series, 2900 Series, 3400 cl Series, 3500 yl Series, 4200 vl Series, 6108, 6200 yl, and 6400 cl Series Switches
- Find-Fix-Inform: finds and fixes common network problems automatically, then informs administrator
- Software updates: free downloads from the Web
- Troubleshooting: ingress and egress port monitoring enable network problem solving

Layer 2 switching

- VLAN support and tagging: supports IEEE 802.1Q (4,094 VLAN IDs) and 256 VLANs simultaneously
- GARP VLAN Registration Protocol (GVRP): allows automatic learning and dynamic assignment of VLANs

Layer 3 routing

• **Basic IP routing**: enables automatic routing to the connected VLANs and up to 16 static routes, including one default route, in IP networks

Security

- Multiple user authentication methods:
 - IEEE 802.1X: industry-standard method of user authentication using an IEEE 802.1X supplicant on the client in conjunction with a RADIUS server
 - Web-based authentication: similar to IEEE 802.1X, it provides a browser-based environment to authenticate clients that do not support the IEEE 802.1X supplicant
 - O MAC-based authentication: client is authenticated with the RADIUS server based on the client's MAC address
- Authentication flexibility:
 - Multiple IEEE 802.1X users per port: provides authentication of up to eight IEEE 802.1X users per port; prevents user "piggybacking" on another user's IEEE 802.1X authentication
- Dynamic ARP protection: blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- Port security: allows access only to specified MAC addresses, which can be learned or specified by the administrator
- MAC address lockout: prevents particular configured MAC addresses from connecting to the network
- Secure File Transfer Protocol (FTP): allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of switch configuration file
- **RADIUS/TACACS+**: eases switch management security administration by using a password authentication server
- Source-port filtering: allows only specified ports to communicate with each other
- Secure Shell (SSHv2): encrypts all transmitted data for secure, remote command-line interface (CLI) access over IP networks
- Secure Sockets Layer (SSL): encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- Switch management logon security: can require either RADIUS or TACACS+ authentication for secure switch CLI logon
- Custom banner: displays security policy when users log in to the switch
- **STP BPDU port protection**: blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks

Convergence

- IP multicast (data-driven IGMPv3): automatically prevents flooding of IP multicast traffic
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP): is an automated device discovery protocol for easy mapping by network management applications



Overview

• **LLDP-MED** (Media Endpoint Discovery): is a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones

Warranty and Support

- Lifetime warranty: for as long as you own the product with advance replacement and next-business-day delivery (available in most countries)*
- Electronic and telephone support: limited electronic and telephone support is available from HP; refer to: www.hp.com/networking/warranty for details on the support provided and the period during which support is available
- **Software releases**: refer to: www.hp.com/networking/warranty for details on the software releases provided and the period during which software releases are available for your product(s)

* Hardware warranty replacement for as long as you own the product, with next business day advance replacement (available in most countries) with a five-year hardware warranty replacement for the disk drive included with HP AllianceONE Services zl Module, HP Threat Management Services zl Module, HP PCM+ Agent with AllianceONE Services zl Module, and HP E-MSM765 zl Mobility Controller. For details, refer to the HP Software License, Warranty, and Support booklet at: www.hp.com/networking/warranty.



Configuration

Build To Order:

BTO is a standalone unit with no integration. BTO products ship standalone are not part of a CTO or Rack-Shippable solution.

• 4 Ope	witch Chassis en Module ports 39A HP gl/xl/vl Switch Redundant Pwr Supply included Height	J8770A See Configuration Note:1
	en Module ports 39A HP gl/xl/vl Switch Redundant Pwr Supply included	J8772B See Configuration Note:1
• 8 Ope	Switch Chassis en Module ports 39A HP gl/xl/vl Switch Redundant Pwr Supply included Height	J8773A See Configuration Note:1
• 4 J87	al Module ports - 4 Open Module ports 65B HP 24-port 10/100-TX vl Module included 39A HP gl/xl/vl Switch Redundant Pwr Supply included	J8775B See Configuration Note:1, 2
 4 tota 1 J870 1 J900 4 ope min=0 	G-4SFP vl Switch al Module ports - 2 Open Module ports 68A HP 24-port Gig-T vl Module included 33A HP 20-port Gig-T / 4-port SFP vl Module included n mini-GBIC (SFP) slots 0 \ max=4 SFP Transceivers 39A HP gl/xl/vl Switch Redundant Pwr Supply included Height	J9064A See Configuration Note:1, 2
 8 tota 2 J870 1 J900 4 ope min=00 	G-4SFP vl Switch al Module ports - 5 Open Module ports 68A HP 24-port Gig-T vl Module included 33A HP 20-port Gig-T / 4-port SFP vl Module included n mini-GBIC (SFP) slots 0 \ max=4 SFP Transceivers 39A HP gl/xl/vl Switch Redundant Pwr Supply included Height	J9030A See Configuration Note:1, 2
Configuratio	on Rules:	
Note 1	The following Transceivers install into this switch: HP X121 1G SFP LC SX Transceiver HP X121 1G SFP LC LX Transceiver	J4858C J4859C



Configuration

HP X111 100M SFP LC FX Transceiver	J9054C
HP X122 1G SFP LC BX-D Transceiver	J8177C
HP X112 100M SFP LC BX-D Transceiver	J9099B
HP X112 100M SFP LC BX-U Transceiver	J9100B
HP X121 1G SFP LC LH Transceiver	J4860C
HP X122 1G SFP LC BX-D Transceiver	J9142B
HP X122 1G SFP LC BX-U Transceiver	J9143A
HP X131 10G X2 SC ER Transceiver	J8438A
HP X130 CX4 Optical Media Converter	J8439A
HP X131 10G X2 SC SR Transceiver	J8436A
HP X131 10G X2 SC LR Transceiver	J8437A
HP X131 10G X2 SC LRM Transceiver	J9144A

Note 2 Localization required. (See Localization Menu for list.)

Factory Racked Models

 HP 4204 vl Switch Chassis 4 Open Module ports 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included 3U - Height 	J8770A
HP 4202-72 vl Switch • 2 Open Module ports • 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included • 3U - Height	J8772B
 HP 4208 vl Switch Chassis 8 Open Module ports 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included 3U - Height 	J8773A
 HP 4208-96 vl Switch 8 total Module ports - 4 Open Module ports 4 J8765B HP 24-port 10/100-TX vl Module included 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included 5U - Height 	J8775B See Configuration Note:1
 HP 4204-44G-4SFP vl Switch 4 total Module ports - 2 Open Module ports 1 J8768A HP 24-port Gig-T vl Module included 1 J9033A HP 20-port Gig-T / 4-port SFP vl Module included 4 open mini-GBIC (SFP) slots min=0 \ max=4 SFP Transceivers 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included 	J9064A See Configuration Note:1

- 1 J4839A HP gl/xl/vl Switch Redundant Pwr Supply included
- 3U Height

Configuration

 2 J8768/ 1 J9033/ 4 open m min=0 \ 	odule ports - 5 Open Module ports A HP 24-port Gig-T vl Module included A HP 20-port Gig-T / 4-port SFP vl Module included nini-GBIC (SFP) slots max=4 SFP Transceivers A HP gl/xl/vl Switch Redundant Pwr Supply included	J9030A See Configuration Note:1
Configuration R	ules:	
Note 1	The following Transceivers install into this switch:	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X111 100M SFP LC FX Transceiver	J9054C
	HP X122 1G SFP LC BX-D Transceiver	J8177C
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143A
	HP X131 10G X2 SC ER Transceiver	J8438A
	HP X130 CX4 Optical Media Converter	J8439A
	HP X131 10G X2 SC SR Transceiver	J8436A
	HP X131 10G X2 SC LR Transceiver	J8437A
	HP X131 10G X2 SC LRM Transceiver	J9144A

Enter the following menu selections as integrated to the CTO Model X server above if order is factory built.

Modules

- J8770A Only System (std 0 // max=4) User Selection (min 0 / max=4) per Chassis
- J8772B Only System (std 0 // max=2) User Selection (min 0 / max=2) per Chassis
- J8773B Only System (std 0 // max=8) User Selection (min 0 / max=8) per Chassis
- J8775B Only System (std 4 // max=8) User Selection (min 0 / max=4) per Chassis
- J9064A Only System (std 2 // max=4) User Selection (min 0 / max=2) per Chassis
- J9030A Only System (std 3 // max=8) User Selection (min 0 / max=5) per Chassis

HP 12-port 100FX MTRJ vl Module

J8763A

J8765B

HP 24-port 10/100-TX vl Module

hp

Configuration

HP 24-port Gig	-T vl Module	J8768A
HP 4-port Mini- • min=0 \ n	-GBIC vl Module max=4 SFP Transceivers	J8776A See Configuration Note:1
	-T / 4-port SFP vl Module	J9033A
• min=0 \ I	max=4 SFP Transceivers	See Configuration Note:1
HP 1-port 10Gb	oE X2 vl Module	J8766A
• min=0 \ I	max=1 SFP Transceivers	See Configuration Note:1
Configuration R	Rules:	
Note 1	The following Transceivers install into this switch:	
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X111 100M SFP LC FX Transceiver	J9054C
	HP X122 1G SFP LC BX-D Transceiver	J8177C
HP X112 100M SFP LC BX-D Transceiver		J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
Transceive	ers	
SFP Transceive	ers	
HP X121 1G SF	P LC SX Transceiver	J4858C
HP X121 1G SFF	P LC LX Transceiver	J4859C
	SFP LC FX Transceiver	J9054C
	P LC LH Transceiver	J4860C
	P RJ45 T Transceiver	J8177C
	P LC BX-D Transceiver	J9142B
	P LC BX-U Transceiver	J9143B
	SFP LC BX-D Transceiver SFP LC BX-U Transceiver	J9099B J9100B
	2 SC ER Transceiver	J8438A
	2 SC SR Transceiver	J8436A
	2 SC LR Transceiver	J8437A
	507577	

Internal Power Supplies

HP X131 10G X2 SC LRM Transceiver



J9144A

J4839A

Configuration

System (std 1 // max=2) User Selection (min 0 / max=1) per Chassis

HP gl/xl/vl Switch Redundant Pwr Supply	
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Cables

Multi-Mode Cables

HP .5m Multi-mode OM3 LC/LC FC Cable HP 1m Multi-mode OM3 LC/LC FC Cable HP 2 m Multimode OM3 LC/LC FC Cable HP 5 m Multimode OM3 LC/LC FC Cable HP 15 m Multimode OM3 LC/LC FC Cable HP 30 m Multimode OM3 LC/LC FC Cable HP 50 m Multimode OM3 LC/LC FC Cable HP Premier Flex LC/LC OM4 2f 1m Cbl HP Premier Flex LC/LC OM4 2f 2m Cbl HP Premier Flex LC/LC OM4 2f 5m Cbl	AJ833A AJ834A AJ835A AJ836A AJ837A AJ838A AJ839A QK732A QK733A QK733A QK735A
	QK734A QK735A QK736A QK737A

Switch Enclosure Options

Software

HP IDM v3 Software w/500-user License	J9438A
HP IDM v3 additional 1000-user License	J9440A
HP IDM v3 Software w/Unltd-user License	J9439A



Technical Specifications

(J8770A) Supports a maximum of 95 autosensing 10/100 prots or 96 autosensing 10/100/1000 ports or 16 min-68(Cs or 4 10-GbE ports, or a combination 10/100/1000 ports or 15 min-68(Cs or 4 10-GbE ports, or a combination includes: 1 x J4339 (HP 3/WWith Redundant Power Supply) Physical characteristics Dimension 15 3(3) (4 174 volux 5.25(h) in, (38.86 x 44.2 x 13.34 cm) (30 height) Weight 20.75 lb. (9.41 kg). Fully loaded Memory and processor Pabric Mounting Wouts in an ElA-standard 19 in. telo rack or equipment cabinet (hardware included): horizontal surface Mounts in an ElA-standard 19 in. telo rack or equipment cabinet (hardware included): horizontal surface Mounts in an ElA-standard 19 in. telo rack or equipment cabinet (hardware included): horizontal surface Mounts in an ElA-standard 19 in. telo rack or equipment cabinet (hardware included): horizontal surface mounting 00 yer telo 24 million pps Switch Fabric Speed 38.4 Gbps Environment 0perating feature Nonoperating feature Nonope	HP 4204 vl Switch Chassis	Ports	4 open module slots	
includes: 1 x J4839A (HP gl/XI/VI Switch Redundant Power Supply) Physical characteristics Dimensions 1 5.3(d) x 17.4(w) x 5.25(h) in. (38.65 x 44.2 x 1 5.34(cm) (3U height) Weight 2 0.75 lb. (9.41 kg), Fully loaded Memory and processor Fabric Mounts in an EIA-standard 1 9 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only Performance Eatency Fabric Throughput Performance Eatency Fabric Throughput Performance Environment Derating relative Nonoperating/Storage relative humidity Nonoperating/Storage relative humidity Eatency Fabric Nonoperating/Storage relative humidity Eatency Fabric F	(J8770A)			
Nemory and processor Veight 20.75 lb. (3.41 kpl. dpl. dpdded) Memory and processor Pabric Mish. 64 MB SDRAM; packet buffer size: 36 MB Mounting Mounts in a FLA-standard 1 s in. telco rack or equipment cabinet (hardware included); horizontal sur-Fermuniting on yerper MPC RPC8245 @ 330 MHz, 24 MB Performance Latency <6 μs (FFO) Environment Operating temperate 3.84 Gbps Operating reparting temperate 3.84 Cbps Inmuidity 15% to 95% @ 104°F (40°C), noncondensing humidity 15% to 95% @ 104°F (40°C), noncondensing humidity 15% to 95% @ 104°F (65°C), noncondensing humidity 15% to 95% @ 149°F (65°C), noncondensing relative humidity 15% to 95% @ 149°F (65°C), noncondensing relative humidity 15% to 95% @ 149°F (65°C), noncondensing relative humidity 152 BTU/hr (2270 kJ/hr) Ottage 100-127 / 200-240 VAC Current 8.2/3.8 A None perating feature 152/3.8 A Maximum power rating and maximum heat dissipation 6050 H Vottage 100-127 / 200-240 VAC Rote S0/50 Hz Notes S0/50 Hz Notes </th <th></th> <th>Power supplies</th> <th></th> <th>l/xl/vl Switch Redundant Power Supply)</th>		Power supplies		l/xl/vl Switch Redundant Power Supply)
Memory and processorFabricMotorola PowerPC MPCB245 © 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MBMountingMounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surfacePerformanceLatency<6 µs (FIFO)PerformanceLatency<6 µs (FIFO)EnvironmentOperating temperature temperature324 GbpsDyperating temperature15% to 95% @ 104°F (40°C), noncondensing humidity15% to 95% @ 104°F (40°C), noncondensing humidityNonoperating/Storage relative humidity15% to 95% @ 104°F (65°C), noncondensing relative humidity15% to 95% @ 104°F (65°C), noncondensing relative humidityRosoperating/Storage relative humidity15% to 95% @ 104°F (65°C), noncondensing relative humidity15% to 95% @ 104°F (65°C), noncondensing relative humidityRosoperating/Storage relative humidity15% to 95% @ 104°F (65°C), noncondensing relative humidity15% to 95% @ 104°F (65°C), noncondensing relative humidityRosoperating/Storage relative humidity15% to 95% @ 104°F (65°C), noncondensing relative humidity15% to 95% @ 104°F (65°C), noncondensing relative humidityMotore Voltage15% to 95% @ 104°F (65°C), noncondensing relative humidity15% to 95% @ 104°F (40°C to 70°C)Electrical characteristisMaximum power Maximum heat dissipation15% to 95% @ 104°F (40°C to 70°C)Maximum power voltage15% to 95% @ 104°F (40°C to 70°C)15% to 95% @ 104°F (40°C to 70°C)Maximum power voltage15% to 95% @ 104°F (65°C)15% to 95% @ 104°F (40°C to 70°C)M		Physical characteristics	Dimensions	
MountingMounts in an EIA-standart 19 in. telor acts or equipment cabinet (hardware included); horizontal surfacePerformanceLatency<6 μs (FIFO)			Weight	20.75 lb. (9.41 kg), Fully loaded
included); horizontal surface mounting only Performance Latency		Memory and processor	Fabric	
InvorumentThroughputUp to 24 million ppsSwitch fabric speed38.4 GbpsDerating temperature32" Fto 104"F (0°C to 40°C)Departing relative humidity15% to 95% @ 104"F (40°C), noncondensing lumidityNonoperating/Storage relative humidity40" Fto 158"F (-40"C to 70°C)Nonoperating/Storage relative humidity15% to 95% @ 149"F (65°C), noncondensing relative humidityFlectrical characteristicMaximum heat dissipationKotage09wer: 64.2 dB; DIN 45635T.19 per ISO 7779Flectrical characteristicMaximum heat dissipationVoltage100-127 / 200-240 VACCurrent8.2 / 3.8 ANotes30 %Frequency50 / 60 H2NotesMaximum power rating and maximum heat dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% ratific, all ports play sizapation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% ratific, all ports play sizapation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% ratific, all ports play sizapation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% ratific, all ports playSafetyEx 22.2N0.595: ULG095->FensionsEx 22.2N0.595: ULG095->ImmunityPlayEx 22.2N0.2S5: ULG005-3-Sizapation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% ratific, all ports play Sizapation are he worst-case theoretical maximum numbers provided for planning		Mounting		• •
Switch fabric speed38.4 GbpsEnvironmentOperating temperature32°F to 104°F (0°C to 40°C)Operating relative humidity15% to 95% @ 104°F (40°C), noncondensing humidityNonoperating/Storage relative humidity-40°F to 158°F (-40°C to 70°C)Nonoperating/Storage relative humidity15% to 95% @ 149°F (65°C), noncondensing relative humidityAltitude Acousticup to 15,000 ft. (4.6 km) AcousticAcoustic00+er: 64.2 dB; DIN 45635T.19 per ISO 7779Electrical characteristics Maximum heat dissipation100-127 / 200-240 VAC (2270 kJ/hr)Voltage Current00-127 / 200-240 VAC (23.8 AFrequency50 / 60 HzNotesMaximum power rating dissipation are he worst- case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No.950; UL G093: S5024; IEC/EN 61000-3-3EmissionsCSC Class A; VCCI Class A; USCP 22 Class A; CISPR 22 Class A; EN S5024; IEC/EN 61000-3-3ImmunityEN S5024; IEC/EN 61000-4-2RadiatedIEC 61000-4-3		Performance	Latency	<6 µs (FIFO)
EnvironmentOperating temperature Operating relative humidity32°F to 104°F (0°C to 4°C)Operating relative humidity15% to 95% @ 104°F (40°C), noncondensing (40°C to 70°C) temperature/Storage relative humidity-40°F to 158°F (-40°C to 70°C) temperature/Storage relative humidityNonoperating/Storage relative humidity15% to 95% @ 149°F (65°C), noncondensing (15% to 95% @ 149°F (65°C), noncondensing (16% to 95% @ 149°F (65°C), noncondensing (15% to 95% @ 10° (15% to 95%)SafetySafetySA 22.2 No.950; UL 6095 UL 6000 -3-3ImmunityFig Aprice A1 (15% to 95% (15% to 95%) (15% to 95% (15% to 95%) (15% to 95%) (15% to 95%)Ensisons			Throughput	Up to 24 million pps
Operating relative humidity15% to 95% @ 104°F (40°C), noncondensing -40°F to 158°F (-40°C to 70°C) temperatureNonoperating/Storage relative humidity-40°F to 158°F (-40°C to 70°C) temperatureNonoperating/Storage relative humidity-40°F to 158°F (-40°C to 70°C) temperatureNonoperating/Storage relative humidity15% to 95% @ 149°F (65°C), noncondensingAltiudeup to 15,000 ft. (4.6 km) AcousticPower: 64.2 dB; DIN 45635T.19 per ISO 7779Electrical characteristicsMaximum heat dissipationVoltage100-127 / 200-240 VAC CurrentCurrent8.2 / 3.8 A Maximum power rating dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No. 950; UL 6095U: Fto 6095UEmissionsFCC Class A; VCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN S5024, IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24 ESDExpESDIEC 61000-4-2RatiatedIEC 61000-4-3			Switch fabric speed	38.4 Gbps
Numidity		Environment	Operating temperature	32°F to 104°F (0°C to 40°C)
temperatureNonoperating/Storage relative humidity15% to 95% @ 149°F (65°C), noncondensing relative humidityAltitudeup to 15,000 ft. (4.6 km)AcousticPower: 64.2 dB; DIN 45635T.19 per ISO 7779Electrical characteristiciMaximum heat dissipationUotage100-127 / 200-240 VACCurrent8.2 / 3.8 AMaximum power rating Maximum power rating and maximum heat dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged i, and all modules populated.SafetyCSA 22.2 No.950; UL 6095:EmissionsFCC Class A; VCCI Class A; CLSPR 22 Class A; CLSPR 22 Class A; EN S5024; IEC/EN 61000-3-3ImmunityENS0 5024, CLSPR 24 ESDESDEC 1000-4-2 RadiatedEC 61000-4-2				15% to 95% @ 104°F (40°C), noncondensing
relative humidityAltitudeup to 15,000 ft. (4.6 km)AcousticPower: 64.2 dB; DIN 45635T.19 per ISO 7779Electrical characteristicsMaximum heat dissipation2152 BTU/hr (2270 kJ/hr)Voltage100-127 / 200-240 VACCurrent8.2 / 3.8 AMaximum power rating Maximum power rating630 WFrequency50 / 60 HzNotesMaximum power rating and maximum heat dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No. 950; UL 6095UEmissionsFCC Class A; VCCI Class A; CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IU/EN 61000-3-2;ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3				-40°F to 158°F (-40°C to 70°C)
AcousticPower: 64.2 dB; DIN 45635T.19 per IS0 7779Electrical characteristicsMaximum heat dissipation2152 BTU/hr (2270 kJ/hr)Voltage100-127 / 200-240 VACCurrent8.2 / 3.8 AMaximum power rating Frequency630 WFrequency50 / 60 HzNotesMaximum power rating and maximum heat dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No. 950; UL 6095; EN 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; CISPR 22 Class A; EN S5024; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24 ESDEDIEC 61000-4-2RadiatedIEC 61000-4-3				15% to 95% @ 149°F (65°C), noncondensing
Electrical characteristicsMaximum heat dissipation2152 BTU/hr (2270 kJ/hr)Voltage100-127 / 200-240 VACVoltage8.2 / 3.8 ACurrent8.2 / 3.8 AMaximum power rating630 WFrequency50 / 60 HzNotesMaximum power rating and maximum heat dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCS 22.2 No.950; UL 6095: > EmissionsEmissionsCS 22.2 No.950; UL 6095: > EN 60950: SD24; IEC/EN 61000-3-3ImmunityENSn 5024; CISPR 22 Class A; CISPR 22 Class A; CISPR 22EnditedEC 1000-4-2RadiatedEC 1000-4-3			Altitude	up to 15,000 ft. (4.6 km)
idisipation Voltage 10-127/200-240 VAC Current 20/2002 AAC Auximum power ration Auximum power ration Frequency 20/2002 AAC Auximum power rating and maximum head Subserver Auximum power rating and head Subserver Au			Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779
Current8.2 / 3.8 AMaximum power rating630 WFrequency50 / 60 HzNotesMaximum power rating and maximum heat dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No. 950; UL 6095)EmissionsFCC Class A; VCCI Class A; VCCI Class A; CISPR 22 Class A; CISPR 22 Class A; EN S5024; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3		Electrical characteristics		2152 BTU/hr (2270 kJ/hr)
Maximum power rating630 WFrequency50 / 60 HzNotesMaximum power rating and maximum heat dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No. 950; UL 60950; EN 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IE/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3			Voltage	100-127 / 200-240 VAC
Frequency50 / 60 HzNotesMaximum power rating and maximum heat dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No. 950; UL 6095EmissionsFCC Class A; VCCI Class A; EN 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-3ImmunityENESDEN 55024, CISPR 24RadiatedIEC 61000-4-2IEC 61000-4-3			Current	8.2 / 3.8 A
NotesMaximum power rating and maximum heat dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.SafetyCSA 22.2 No. 950; UL 60950; EN 60950EmissionsFCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-3ImmunityENEN 55024, CISPR 24ESDIEC 61000-4-2RadiatedIEC 61000-4-3			Maximum power rating	630 W
 dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. Safety CSA 22.2 No. 950; UL 60950; EN 60950 Emissions FCC Class A; VCCI Class A; CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3 Immunity EN ESD IEC 61000-4-2 IEC 61000-4-3 			Frequency	50 / 60 Hz
Emissions FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3 Immunity EN EN 55024, CISPR 24 ESD IEC 61000-4-2 IEC 61000-4-2 Radiated IEC 61000-4-3			Notes	dissipation are he worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged
55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3 Immunity EN EN 55024, CISPR 24 ESD IEC 61000-4-2 Radiated IEC 61000-4-3		Safety		
ESD IEC 61000-4-2 Radiated IEC 61000-4-3		Emissions		
Radiated IEC 61000-4-3		Immunity	EN	EN 55024, CISPR 24
			ESD	IEC 61000-4-2
EFT/Burst IEC 61000-4-4			Radiated	IEC 61000-4-3
			EFT/Burst	IEC 61000-4-4



Technical Specifications

		Surge	IEC 61000-4-5
		Conducted	
			IEC 61000-4-6
		Power frequency magnetic field	IEC 61000-4-8
		Voltage dips and interruptions	IEC 61000-4-11
		Harmonics	EN 61000-3-2, IEC 61000-3-2
		Flicker	EN 61000-3-3, IEC 61000-3-3
	Management	configuration menu; o	luded); command-line interface; Web browser; ut-of-band management (DB-9 serial port console); IB; Repeater MIB; Ethernet Interface MIB
	Notes	number ends with the When using mini-GBIC	s with this product, mini-GBICs with revision "B" (product letter "B", e.g., J4858B, J4859B) or later are required. s with this product, mini-GBICs with revision "B" or later with the letter "B" or later, e.g., J4858B, J4859C) are
	Services	 3-year, 4-hour onsite, 3-year, 4-hour onsite, support (UE243E) 3-year, 24x7 SW phon Installation with minin Installation with HP-p 4-year, 4-hour onsite, 4-year, 4-hour onsite, 4-year, 4-hour onsite, (UR878E) 4-year, 24x7 SW phon 5-year, 4-hour onsite, 5-year, 24x7 SW phon 5-year, 4-hour onsite, 5-year, 4-hour onsite, 5-year, 24x7 SW phon 3 Yr 6 hr Call-to-Repai 4 Yr 6 hr Call-to-Repai 5 Yr 6 hr Call-to-Repai 7 Refer to the HP websit the service-level described 	ir Onsite (UW348E)
HP 4202-72 vl Switch (J8772B)	Ports	_	0 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type ype: Auto-MDIX; Duplex: half or full
		Supports a maximum	of 120 autosensing 10/100 ports or 48 Gigabit ports or GbE ports, or a combination



Technical Specifications

Power supplies	2 power supply slots includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply)		
Physical characteristics	Dimensions	15.3(d) x 17.4(w) x 5.25(h) in. (38.86 x 44.2 x 13.34 cm) (3U height)	
	Weight	23.81 lb. (10.8 kg), Fully loaded	
Memory and processor	Fabric	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB	
Mounting	Mounts in an EIA-standard included); horizontal surfa	19 in. telco rack or equipment cabinet (hardware ce mounting only	
Performance	Latency	<6 μs (FIFO)	
	Throughput	up to 22.4 million pps	
	Switch fabric speed	33.6 Gbps	
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)	
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing	
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing	
	Altitude	up to 15,000 ft. (4.6 km)	
	Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779	
Electrical characteristics	Maximum heat	2152 BTU/hr (2270 kJ/hr)	
	dissipation		
	Voltage	100-127 / 200-240 VAC	
	Current	8.2 / 3.8 A	
	Maximum power rating	630 W	
	Frequency	50 / 60 Hz	
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.	
Safety	CSA 22.2 No. 950; UL 6095	D; EN 60950	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3		
Immunity	EN	EN 55024, CISPR 24	
	ESD	IEC 61000-4-2	
	Radiated	IEC 61000-4-3	
	EFT/Burst	IEC 61000-4-4	
	Surge	IEC 61000-4-5	
	Conducted	IEC 61000-4-6	



HP 4200 vl Switch Series

		Power frequency magnetic field	IEC 61000-4-8
		Voltage dips and interruptions	IEC 61000-4-11
		Harmonics	EN 61000-3-2, IEC 61000-3-2
		Flicker	EN 61000-3-3, IEC 61000-3-3
	Management	configuration menu; out-c	d); command-line interface; Web browser; of-band management (DB-9 serial port console); Repeater MIB; Ethernet Interface MIB
	Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	
	Services	3-year, 4-hour onsite, 24x 3-year, 4-hour onsite, 24x support (UE249E) 3-year, 24x7 SW phone su Installation with minimum Installation with HP-provid 4-year, 4-hour onsite, 13x 4-year, 4-hour onsite, 24x (UR894E) 4-year, 24x7 SW phone su 5-year, 4-hour onsite, 24x 5-year, 4-hour onsite, 24x (UR898E) 5-year, 24x7 SW phone su 3 Yr 6 hr Call-to-Repair On 4 Yr 6 hr Call-to-Repair On 5 Yr 6 hr Call-to-Repair On Refer to the HP website at the service-level description	isite (UW354E)
HP 4208 vl Switch Chassis	Ports	8 open module slots	
(J8773A)			92 autosensing 10/100 ports or 192 autosensing nini-GBICs or 4 10-GbE ports, or a combination
	Power supplies	2 power supply slots includes: 1 x J4839A (HP g	l/xl/vl Switch Redundant Power Supply)
	Physical characteristics	Dimensions	15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (5U height)
		Weight	26.85 lb. (12.18 kg), Fully loaded



Technical Specifications

Momory and processor	Fabric	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB	
Memory and processor	rabiic	flash, 64 MB SDRAM; packet buffer size: 36 MB	
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only		
Performance	Latency	<6 μs (FIFO)	
	Throughput	up to 48 million pps	
	Switch fabric speed	76.8 Gbps	
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)	
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing	
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing	
	Altitude	up to 15,000 ft. (4.6 km)	
	Acoustic	Power: 63.1 dB; DIN 45635T.19 per ISO 7779	
Electrical characteristics	Maximum heat dissipation	2152 BTU/hr (2270 kJ/hr)	
	Voltage	100-127 / 200-240 VAC	
	Current	8.2 / 3.8 A	
	Maximum power rating	630 W	
	Frequency	50 / 60 Hz	
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.	
Safety	CSA 22.2 No. 950; UL 6095	0; EN 60950	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3		
Immunity	EN	EN 55024, CISPR 24	
	ESD	IEC 61000-4-2	
	Radiated	IEC 61000-4-3	
	EFT/Burst	IEC 61000-4-4	
	Surge	IEC 61000-4-5	
	Conducted	IEC 61000-4-6	
	Power frequency magnetic field	IEC 61000-4-8	
	Voltage dips and interruptions	IEC 61000-4-11	
	Harmonics	EN 61000-3-2, IEC 61000-3-2	
	Flicker	EN 61000-3-3, IEC 61000-3-3	



Fechnical Specificat	ions		
	Management	configuration menu	ncluded); command-line interface; Web browser; ; out-of-band management (DB-9 serial port console); : MIB; Repeater MIB; Ethernet Interface MIB
	Notes	number ends with t When using mini-GE	BICs with this product, mini-GBICs with revision "B" (product he letter "B", e.g., J4858B, J4859B) or later are required. BICs with this product, mini-GBICs with revision "B" or later ds with the letter "B" or later, e.g., J4858B, J4859C) are
	Services	3-year, 4-hour onsi 3-year, 4-hour onsi support (UE246E) 3-year, 24x7 SW ph Installation with mi Installation with HP 4-year, 4-hour onsi 4-year, 4-hour onsi (UR910E) 4-year, 24x7 SW ph 5-year, 4-hour onsi 5-year, 4-hour onsi 5-year, 4-hour onsi 5-year, 4-hour onsi 5-year, 24x7 SW ph 3 Yr 6 hr Call-to-Reg 4 Yr 6 hr Call-to-Reg 5 Yr 6 hr Call-to-Reg Refer to the HP web the service-level de	te, 13x5 coverage for hardware (UE244E) te, 24x7 coverage for hardware (UE245E) te, 24x7 coverage for hardware, 24x7 software phone one support, software updates (UF787E) nimum configuration, system-based pricing (U4827E) -provided configuration, system-based pricing (U4831E) te, 13x5 coverage for hardware (UR908E) te, 24x7 coverage for hardware (UR909E) te, 24x7 coverage for hardware, 24x7 software phone one support, software updates (UR911E) te, 13x5 coverage for hardware (UR912E) te, 24x7 coverage for hardware (UR913E) te, 24x7 coverage for hardware (UR913E) te, 24x7 coverage for hardware, 24x7 software phone one support, software updates (UR915E) bair Onsite (UW350E) bair Onsite (UW351E) bair Onsite (UW351E) bair Onsite (UW352E) ssite at: www.hp.com/networking/services for details on scriptions and product numbers. For details about services in your area, please contact your local HP sales office.
HP 4208-96 vl Switch	Included accessories	4 HP 24-port 10/10	0-TX vl Modules (J8765B)
(J8775B)	Ports	4 open module slot	5
			100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type a Type: Auto-MDIX; Duplex: half or full
			m of 192 autosensing 10/100 ports or 96 autosensing or 16 mini-GBICs or 4 10-GbE ports, or a combination
	Power supplies	2 power supply slot includes: 1 x J4839/	A (HP gl/xl/vl Switch Redundant Power Supply)
	Physical characteristics	Dimensions	15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (5U height)
		Weight	32.3 lb. (14.65 kg), Fully loaded
	Memory and processor	Fabric	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB flash, 64 MB SDRAM; packet buffer size: 36 MB



Technical Specifications

-			
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only		
Performance	Latency	<6 μs (FIFO)	
	Throughput	up to 48 million pps	
	Switch fabric speed	76.8 Gbps	
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)	
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing	
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing	
	Altitude	up to 15,000 ft. (4.6 km)	
	Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779	
Electrical characteristics	Maximum heat dissipation	2152 BTU/hr (2270 kJ/hr)	
	Voltage	100-127 / 200-240 VAC	
	Current	8.2 / 3.8 A	
	Maximum power rating	630 W	
	Frequency	50 / 60 Hz	
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.	
Safety	CSA 22.2 No. 950; UL 60950	0; EN 60950	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3		
Immunity	EN	EN 55024, CISPR 24	
	ESD	IEC 61000-4-2	
	Radiated	IEC 61000-4-3	
	EFT/Burst	IEC 61000-4-4	
	Surge	IEC 61000-4-5	
	Conducted	IEC 61000-4-6	
	Power frequency magnetic field	IEC 61000-4-8	
	Voltage dips and interruptions	IEC 61000-4-11	
	Harmonics	EN 61000-3-2, IEC 61000-3-2	
	Flicker	EN 61000-3-3, IEC 61000-3-3	



Technical Specificat	ions		
	Management	configuration menu; o	uded); command-line interface; Web browser; ut-of-band management (DB-9 serial port console); IB; Repeater MIB; Ethernet Interface MIB
	Notes	number ends with the When using mini-GBIC	s with this product, mini-GBICs with revision "B" (product letter "B", e.g., J4858B, J4859B) or later are required. s with this product, mini-GBICs with revision "B" or later with the letter "B" or later, e.g., J4858B, J4859C) are
	Services	3-year, 4-hour onsite, 3-year, 4-hour onsite, support (UE246E) 3-year, 24x7 SW phon Installation with minin Installation with HP-p 4-year, 4-hour onsite, 4-year, 4-hour onsite, 4-year, 4-hour onsite, (UR910E) 4-year, 24x7 SW phon 5-year, 4-hour onsite, 5-year, 4-hour onsite, 5-year, 4-hour onsite, 5-year, 4-hour onsite, 5-year, 24x7 SW phon 3 Yr 6 hr Call-to-Repai 4 Yr 6 hr Call-to-Repai 5 Yr 6 hr Call-to-Repai	r Onsite (UW351E) r Onsite (UW352E) re at: www.hp.com/networking/services for details on
			riptions and product numbers. For details about services your area, please contact your local HP sales office.
HP 4204-44G-4SFP vl Switch (J9064A)	Included accessories	1 НР 24-port Gig-T vl I 1 НР 20-port Gig-T / 4	Module (J8768A) -port SFP vl Module (J9033A)
	Ports	2 open module slots	
		44 autosensing 10/10 Type 100Base-TX, IEE	0/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u E 802.3ab Type 1000Base-T); Media Type: Auto-MDIX;)Base-TX: half or full; 1000Base-T: full only
		4 open mini-GBIC (SFP) slots
		••	of 48 autosensing 10/100 ports or 92 autosensing 12 mini-GBICs or 2 10-GbE ports, or a combination
	Power supplies2 power supply slots includes: 1 x J4839A (HP gl/xl/vl S		HP gl/xl/vl Switch Redundant Power Supply)
	Physical characteristics	Dimensions	15.3(d) x 17.4(w) x 5.25(h) in. (38.86 x 44.2 x 13.34 cm) (3U height)
		Weight	24.45 lb. (11.09 kg), Fully loaded



Technical Specifications

Memory and processor	Fabric	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB	
Hemory and processor	rablic	flash, 64 MB SDRAM; packet buffer size: 36 MB	
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only		
Performance	Latency	<6 µs (FIFO)	
	Throughput	up to 24 million pps	
	Switch fabric speed	38.4 Gbps	
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)	
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing	
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing	
	Altitude	up to 15,000 ft. (4.6 km)	
	Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779	
Electrical characteristics	Maximum heat dissipation	2152 BTU/hr (2270 kJ/hr)	
	Voltage	100-127 / 200-240 VAC	
	Current	8.2 / 3.8 A	
	Maximum power rating	630 W	
	Frequency	50 / 60 Hz	
	Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.	
Safety	CSA 22.2 No. 950; UL 6095	0; EN 60950	
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A; CISPR 22 Class A; EN 55024; IEC/EN 61000-3-2; IEC/EN 61000-3-3		
Immunity	EN	EN 55024, CISPR 24	
	ESD	IEC 61000-4-2	
	Radiated	IEC 61000-4-3	
	EFT/Burst	IEC 61000-4-4	
	Surge	IEC 61000-4-5	
	Conducted	IEC 61000-4-6	
	Power frequency magnetic field	IEC 61000-4-8	
	Voltage dips and interruptions	IEC 61000-4-11	
	Harmonics	EN 61000-3-2, IEC 61000-3-2	
	Flicker	EN 61000-3-3, IEC 61000-3-3	



Technical Specificat	tions		
	Management	configuration menu;	ncluded); command-line interface; Web browser; out-of-band management (DB-9 serial port console); MIB; Repeater MIB; Ethernet Interface MIB
	Notes	number ends with th When using mini-GB	ICs with this product, mini-GBICs with revision "B" (product ne letter "B", e.g., J4858B, J4859B) or later are required. ICs with this product, mini-GBICs with revision "B" or later ds with the letter "B" or later, e.g., J4858B, J4859C) are
	Services	3-year, 4-hour onsit 3-year, 4-hour onsit support (UE243E) 3-year, 24x7 SW pho Installation with mir Installation with HP- 4-year, 4-hour onsit 4-year, 4-hour onsit (UR878E) 4-year, 4-hour onsit 5-year, 4-hour onsit 5-year, 4-hour onsit 5-year, 4-hour onsit 5-year, 4-hour onsit 5-year, 24x7 SW pho 3 Yr 6 hr Call-to-Rep 4 Yr 6 hr Call-to-Rep 5 Yr 6 hr Call-to-Rep Refer to the HP webs	e, 13x5 coverage for hardware (UE241E) e, 24x7 coverage for hardware (UE242E) e, 24x7 coverage for hardware, 24x7 software phone one support, software updates (UE263E) himum configuration, system-based pricing (U4827E) provided configuration, system-based pricing (U4831E) e, 13x5 coverage for hardware (UR876E) e, 24x7 coverage for hardware (UR877E) e, 24x7 coverage for hardware (UR877E) e, 24x7 coverage for hardware, 24x7 software phone one support, software updates (UR879E) e, 13x5 coverage for hardware (UR880E) e, 24x7 coverage for hardware (UR881E) e, 24x7 coverage for hardware, 24x7 software phone one support, software updates (UR881E) e, 24x7 coverage for hardware, 24x7 software phone one support, software updates (UR883E) hair Onsite (UW347E) hair Onsite (UW349E) site at: www.hp.com/networking/services for details on scriptions and product numbers. For details about services in your area, please contact your local HP sales office.
HP 4208-68G-4SFP vl	Included accessories	2 HP 24-port Gig-T v	rl Modules (J8768A)
Switch (J9030A)		1 HP 20-port Gig-T /	4-port SFP vl Module (J9033A)
	Ports	5 open module slots	i
		Type 100Base-TX, I	100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u EEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; 00Base-TX: half or full; 1000Base-T: full only
		4 open mini-GBIC (SI	FP) slots
			n of 120 autosensing 10/100 ports or 188 autosensing or 24 mini-GBICs or 4 10-GbE ports, or a combination
	Power supplies	2 power supply slots includes: 1 x J4839A (HP gl/xl/vl Switch Redundant Power Supply)	
	Physical characteristics	Dimensions	15.3(d) x 17.4(w) x 8.75(h) in. (38.86 x 44.2 x 22.23 cm) (5U height)
		Weight	30.88 lb. (14.01 kg), Fully loaded



Technical Specifications

Memory and processor	Fabric	Motorola PowerPC MPC8245 @ 330 MHz, 24 MB	
Memory and processor		flash, 64 MB SDRAM; packet buffer size: 36 MB	
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only		
Performance	Latency	<6 µs (FIFO)	
	Throughput	up to 48 million pps	
	Switch fabric speed	76.8 Gbps	
Environment	Operating temperature	32°F to 104°F (0°C to 40°C)	
	Operating relative humidity	15% to 95% @ 104°F (40°C), noncondensing	
	Nonoperating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	
	Nonoperating/Storage relative humidity	15% to 95% @ 149°F (65°C), noncondensing	
	Altitude	up to 15,000 ft. (4.6 km)	
	Acoustic	Power: 64.2 dB; DIN 45635T.19 per ISO 7779	
Electrical characteristics	Maximum heat dissipation	2152 BTU/hr (2270 kJ/hr)	
	Voltage	100-127 / 200-240 VAC	
	Current	8.2 / 3.8 A	
	Maximum power rating	630 W	
	Frequency	50 / 60 Hz	
	Notes	Maximum power rating and maximum heat	
		dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.	
Safety	CSA 22.2 No. 950; UL 6095	maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated.	
Safety Emissions		maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. 0; EN 60950 N 55022/CISPR 22 Class A; CISPR 22 Class A; EN	
-	FCC Class A; VCCI Class A; E	maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. 0; EN 60950 N 55022/CISPR 22 Class A; CISPR 22 Class A; EN	
Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2;	maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. 0; EN 60950 N 55022/CISPR 22 Class A; CISPR 22 Class A; EN IEC/EN 61000-3-3	
Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2; EN	maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. 0; EN 60950 N 55022/CISPR 22 Class A; CISPR 22 Class A; EN IEC/EN 61000-3-3 EN 55024, CISPR 24	
Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2; EN ESD	maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. 0; EN 60950 N 55022/CISPR 22 Class A; CISPR 22 Class A; EN IEC/EN 61000-3-3 EN 55024, CISPR 24 IEC 61000-4-2	
Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2; EN ESD Radiated	maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. 0; EN 60950 N 55022/CISPR 22 Class A; CISPR 22 Class A; EN IEC/EN 61000-3-3 EN 55024, CISPR 24 IEC 61000-4-2 IEC 61000-4-3	
Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2; EN ESD Radiated EFT/Burst	maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. 0; EN 60950 N 55022/CISPR 22 Class A; CISPR 22 Class A; EN IEC/EN 61000-3-3 EN 55024, CISPR 24 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4	
Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2; EN ESD Radiated EFT/Burst Surge	maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. 0; EN 60950 N 55022/CISPR 22 Class A; CISPR 22 Class A; EN IEC/EN 61000-3-3 EN 55024, CISPR 24 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-5	
Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2; EN ESD Radiated EFT/Burst Surge Conducted Power frequency	maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. 0; EN 60950 N 55022/CISPR 22 Class A; CISPR 22 Class A; EN IEC/EN 61000-3-3 EN 55024, CISPR 24 IEC 61000-4-2 IEC 61000-4-2 IEC 61000-4-5 IEC 61000-4-6	
Emissions	FCC Class A; VCCI Class A; E 55024; IEC/EN 61000-3-2; EN ESD Radiated EFT/Burst Surge Conducted Power frequency magnetic field Voltage dips and	maximum numbers provided for planning the infrastructure with 100% traffic, all ports plugged in, and all modules populated. 0; EN 60950 N 55022/CISPR 22 Class A; CISPR 22 Class A; EN IEC/EN 61000-3-3 EN 55024, CISPR 24 IEC 61000-4-2 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8	



Technical Specification	ons	
	Management	HP PCM+; HP PCM (included); command-line interface; Web browser; configuration menu; out-of-band management (DB-9 serial port console); IEEE 802.3 Ethernet MIB; Repeater MIB; Ethernet Interface MIB
	Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" (product number ends with the letter "B", e.g., J4858B, J4859B) or later are required. When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.
	Services	3-year, 4-hour onsite, 13x5 coverage for hardware (UE244E) 3-year, 4-hour onsite, 24x7 coverage for hardware (UE245E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (UE246E) 3-year, 24x7 SW phone support, software updates (UF787E) Installation with minimum configuration, system-based pricing (U4827E) Installation with HP-provided configuration, system-based pricing (U4821E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR908E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR909E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR909E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR910E) 4-year, 24x7 SW phone support, software updates (UR911E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR912E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR913E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR914E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR914E) 5-year, 24x7 SW phone support, software updates (UR915E) 3 Yr 6 hr Call-to-Repair Onsite (UW350E) 4 Yr 6 hr Call-to-Repair Onsite (UW351E) 5 Yr 6 hr Call-to-Repair Onsite (UW352E) Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services
	Standards and protocols (applies to all products in series)	and response times in your area, please contact your local HP sales office. Device management HTML and telnet management General protocols IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 791 IP RFC 793 TCP RFC 793 TCP RFC 826 ARP



RFC 854 TELNET

HP 4200 vl Switch Series

Technical Specifications

RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 3046 DHCP Relay Agent Information Option

IP multicast

RFC 3376 IGMPv3

MIBs

RFC 1213 MIB II RFC 1493 Bridge MIB RFC 2613 SMON MIB RFC 2618 RADIUS Client MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2737 Entity MIB (Version 2)

Network management

IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 1757 RMON 4 groups: Stats, History, Alarms and Events RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) RFC 3164 BSD syslog Protocol RFC 3176 sFlow ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3 XRMON

QoS/CoS

RFC 2474 DiffServ Precedence, including 8 queues/port RFC 2597 DiffServ Assured Forwarding (AF) RFC 2598 DiffServ Expedited Forwarding (EF)

Security

IEEE 802.1X Port Based Network Access Control RFC 2138 RADIUS Authentication Secure Sockets Layer (SSL) SSHv2 Secure Shell



Accessories

HP 4200 vl Switch Series accessories

Modules	HP 12-port 100FX MTRJ vl Module	J8763A
	HP 24-port 10/100-TX vl Module	J8765B
	HP 24-port Gig-T vl Module	J8768A
	HP 4-port Mini-GBIC vl Module	J8776A
	HP 20-port Gig-T / 4-port SFP vl Module	J9033A
	HP 1-port 10GbE X2 vl Module	J8766A
Transceivers	HP X131 10G X2 SC ER Transceiver	J8438A
	HP X130 CX4 Optical Media Converter	J8439A
	HP X131 10G X2 SC SR Transceiver	J8436A
	HP X131 10G X2 CX4 Transceiver	J8440C
	HP X111 100M SFP LC FX Transceiver	J9054B
	HP X131 10G X2 SC LR Transceiver	J8437A
	HP X131 10G X2 SC LRM Transceiver	J9144A
	HP X112 100M SFP LC BX-D Transceiver	J9099B
	HP X112 100M SFP LC BX-U Transceiver	J9100B
	HP X121 1G SFP LC LH Transceiver	J4860C
	HP X121 1G SFP LC SX Transceiver	J4858C
	HP X121 1G SFP LC LX Transceiver	J4859C
	HP X121 1G SFP RJ45 T Transceiver	J8177C
	HP X122 1G SFP LC BX-D Transceiver	J9142B
	HP X122 1G SFP LC BX-U Transceiver	J9143B
Cables	NEW HP 0.5 m Multimode OM3 LC/LC Optical Cable	AJ833A
	NEW HP 1 m Multimode OM3 LC/LC Optical Cable	AJ834A
	NEW HP 2 m Multimode OM3 LC/LC Optical Cable	AJ835A
	NEW HP 5 m Multimode OM3 LC/LC Optical Cable	AJ836A
	NEW HP 15 m Multimode OM3 LC/LC Optical Cable	AJ837A
	NEW HP 30 m Multimode OM3 LC/LC Optical Cable	AJ838A
	NEW HP 50 m Multimode OM3 LC/LC Optical Cable	AJ839A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
	NEW HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A
EPS/RPS	HP gl/xl/vl Switch Redundant Pwr Supply	J4839A
Software	HP Identity Driven Manager 3.0 Software500-User License	J9438A
	HP Identity Driven Manager 3.0 SoftwareAdditional 1,000-User License	J9440A
	HP Identity Driven Manager 3.0 SoftwareUnlimited-User License	J9439A



Accessory Product Details

HP 12-port 100FX MTRJ vl Module (J8763A)	Ports	12 MTRJ 100BASE-FX ports (IEEE 802.3u Type 100BASE-FX); Duplex: half or full		
	Physical characteristics	Dimensions	8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm)	
		Weight	1.79 lb. (0.81 kg)	
	Cabling			
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.		
HP 24-port 10/100-TX vl Module (J8765B)	Ports	-)/100 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u ia Type: Auto-MDIX; Duplex: half or full	
	Physical characteristics	Dimensions	8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm)	
		Weight	1.43 lb. (0.65 kg)	
	Cabling	Cable type: 100BASE-TX: Category 5 (or better), 100 Ù differential unshielded twisted pair (UTP) or shielded twisted pair (STP), complying with IEEE 802.3u 100BASE-TX; Maximum distance: • 100 meters		
	Services	the service-level descrip	at: www.hp.com/networking/services for details on tions and product numbers. For details about services our area, please contact your local HP sales office.	



Accessory Product De	etails		
HP 24-port Gig-T vl Module (J8768A)	Ports	802.3u Type 100BA	ng 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE SE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
	Physical characteristics	Dimensions	8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm)
		Weight	1.23 lb. (0.56 kg)
	Cabling	unshielded twisted	ory 5 (5E or better recommended), 100 Ù differential 4 pair pair (UTP) or shielded twisted pair (STP) balanced, 802.3ab 1000BASE-T
	Services	the service-level de	site at: www.hp.com/networking/services for details on scriptions and product numbers. For details about services in your area, please contact your local HP sales office.
HP 4-port Mini-GBIC vl Module (J8776A)	Ports	4 open mini-GBIC (S	FP) slots
	Physical characteristics	Dimensions	8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm)
		Weight	1.43 lb. (0.65 kg)
	Cabling	Cable type: Either single mode or multimode	
	Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g. J4858B, J4859C) are required. The HP X111 100M SFP LC FX Transceiver (J9054B) is not supported in this module.	
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP 20-port Gig-T / 4-port SFP vl Module (J9033A)	Ports	802.3u Type 100BA	FP) slots ng 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE SE-TX, IEEE 802.3ab Type 1000BASE-T); Media Type: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only
	Physical characteristics	Dimensions	8.97(d) x 8.0(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm)
		Weight	1.52 lb. (0.69 kg)
	Cabling	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4 pa unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T	
	Notes		ICs with this product, mini-GBICs with revision "B" or later ds with the letter "B" or later, e.g. J4858B, J4859C) are



Accessory Product Details Services Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. HP 1-port 10GbE X2 vl Ports 1 open 10-GbE X2 transceiver slot **Module** (J8766A) **Physical characteristics** Dimensions 8.97(d) x 8(w) x 1.75(h) in. (22.78 x 20.32 x 4.45 cm) Weight 1.00 lb. (0.45 kg) 32°F to 104°F (0°C to 40°C) Environment **Operating temperature** Notes Expected throughput is 2.5 to 7 Gbps, depending on packet size. Traffic from single MAC SA to single MAC DA will be at most 1 Gbps. The 4200vl chassis can support upto 4 modules. 2 10G ports can be trunked together, cannot include other port speeds. Available January 1, 2008. Services Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office. HP X131 10G X2 SC ER 1 SC 10-GbE port (IEEE 802.3ae Type 10GBASE-ER); Duplex: full only Ports Transceiver (J8438A) Connectivity **Connector type** SC Wavelength 1550 nm HP X131 10G X2 SC ER **Physical characteristics** Dimensions 3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 Transceiver: An X2 format 10-gigabit transceiver with cm) SC connectors using ER Weight 0.35 lb. (0.16 kg) technology. **Transceiver form factor** Χ2 **Operating temperature** 32ºF to 104ºF (0ºC to 40ºC) Environment **Operating relative** 15% to 95%, noncondensing humidity **Electrical characteristics Power consumption** 3 W typical **Power consumption** 4.5 W maximum Cabling Cable type:: Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1; **Cable length** 2m to 30km (max 40km on engineered links) Single Mode Fiber type Notes Conditioning patch cord cables are not supported For fiber patch cords, use Ultra Physical Contact (UPC) surface termination/polish. Angled Physical Contact (APC) is not recommended. Services Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services



and response times in your area, please contact your local HP sales office.

Accessory Product Details

HP X130 CX4 Optical Media Converter (J8439A)	Physical characteristics	Dimensions	2.83(d) x 0.98(w) x 0.59(h) in. (7.19 x 2.49 x 1.5 cm)
		Weight	.06 lb. (0.03 kg)
An optical media converter that connects to CX4 ports, providing 10-Gigabit connectivity up to 300 m on multimode fiber.	Cabling	Maximum distance: • 62.5 µm multimode cable • 50 µm multimode cable @ • 50 µm multimode cable @	500 MHz*km = 1-100 m
	Notes	multimode ribbon cable is u The 12-strand multimode r diameters, terminated by s (MTP) connectors in a cross Multi-fiber Push (MPO). Users should specify a "cro configuration for the ribbon connect to ProCurve 10-Gb For a suggested vendor of 1	onnects directly to the CX4 port, and a 12-strand used between CX4 Media Converters. ibbon cable can have either 62.5 or 50 micron core tandard Multiple Terminations Push-pull Latch sover configuration. The ribbon cables are known as ssover" (often called "key up/key up") n cable. Also, specify female-female cables to E CX4 Media Converters. MPO ribbon cables, please see the "Cabling" 10-GbE Transceivers" FAQs Web page.
	Services	the service-level descriptio	www.hp.com/networking/services for details on ns and product numbers. For details about services area, please contact your local HP sales office.

HP X131 10G X2 SC SR	Ports	1 SC 10-GbE port (IEEE 802	2.3ae Type 10GBASE-SR); Duplex: full only
Transceiver (J8436A)	Connectivity	Connector type	SC
HP X131 10G X2 SC SR		Wavelength	850 nm
Transceiver: An X2 format 10-gigabit transceiver with	Physical characteristics	Dimensions	3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm)
SC connectors using SR		Weight	0.35 lb. (0.16 kg)
technology.		Transceiver form factor	X2
	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
		Operating relative humidity	0% to 95%, noncondensing
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
		Nonoperating/Storage relative humidity	0% to 95%, noncondensing
		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	Power consumption typical	1.7 W
		Power consumption maximum	2.4 W
	Cabling	Cable type::	



Accessory Pr	oduct Details
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 $62.5/125~\mu m$ or $50/125~\mu m$ (core/cladding) graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively;

Maximum distance:

		 2-33m with 62.5 µm 2-66m with 50 µm r 2-82m with 50 µm r 	n multimode cable @ 160 MHz*km n multimode cable @ 200 MHz*km nultimode cable @ 400 MHz*km nultimode cable @ 500 MHz*km multimode cable @ 2000 MHz*km	
		Cable length	2-300m	
	Notes Services	Fiber type	Multi Mode	
		•	Jltra Physical Contact (UPC) surface I Physical Contact (APC) is not recommended.	
		the service-level description	www.hp.com/networking/services for details on ons and product numbers. For details about services r area, please contact your local HP sales office.	
HP X131 10G X2 CX4	Ports	1 CX4 10-GbE port (IEEE 80	02.3ak Type 10GBASE-CX4); Duplex: full only	
Transceiver (J8440C)	Connectivity	Connector type	CX4	
HP X131 10G X2 CX4 Transceiver: An X2 format	Physical characteristics	Dimensions	3.54(d) x 1.42(w) x 0.53(h) in. (8.99 x 3.61 x 1.35 cm)	
10-gigabit CX4 transceiver.		Weight	0.18 lb. (0.08 kg)	
		Transceiver form factor	X2	
	Environment	Operating temperature	32ºF to 131ºF (0ºC to 55ºC)	
		Operating relative humidity	15% to 95%, noncondensing	
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)	
		Altitude	up to 10,000 ft. (3 km)	
	Electrical characteristics	Power consumption typical	1.0 W	
		Power consumption maximum	3.3 W	
	Cabling	Maximum distance: • 15m with CX4 cables • 300m with optical media	converter and multimode fiber cable	
	Notes	(J8439A). For suggested vendors of ("HP 10-GbE Transceivers" Optical Media Converter (O	-15 m) or HP X130 CX4 Optical Media Converter CX4 cables, please see the "Cabling" answers on the	



Accessory Product Details

		•	ons and product numbers. For details about services r area, please contact your local HP sales office.	
HP X111 100M SFP LC FX	Ports	1 LC 100BASE-FX port (IEEI	E 802.3u Type 100BASE-FX); Duplex: half or full	
Transceiver (J9054B)	Physical characteristics	Dimensions: 2.7(d) x 0.54(v Weight: 0.06 lb. (0.03 kg)	v) x 0.48(h) in. (6.86 x 1.38 x 1.22 cm)	
HP X111 100M SFP LC FX Transceiver: An SFP format 100-megabit transceiver with LC connectors using FX technology.	Environment	Operating temperature: 32 Operating relative humidity Nonoperating/Storage tem Nonoperating/Storage rela Altitude: up to 10,000 ft. (3	y: 5% to 95% perature: -40ºF to 185ºF (-40ºC to 85ºC) tive humidity: 5% to 85%	
	Cabling	Туре:		
		metal content, mult	125 μm (core/cladding) diameter, graded-index, low imode fiber optic, complying with ITU-T G.651 and A1b or A1a, respectively;	
		Maximum distance:		
		• 2 km (full duplex) or 412 m (half duplex)		
	Notes	Transmitter wavelength: 1310nm		
		Power consumption is 1.1 v		
		product, see the document	nd minimum software requirements to support this titled "Support for the J9054B 100-FX SFP-LC ni-GBICs and SFPs" Manuals Web page.	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.		
HP X131 10G X2 SC LR	Ports	1 SC 10-GbE port (IEEE 802	2.3ae Type 10GBASE-LR); Duplex: full only	
Transceiver (J8437A)	Connectivity	Connector type	SC	
An V2 form factor	-	Wavelength	1310 nm	
An X2 form-factor transceiver that supports the 10-Gigabit LR standard providing 10-Gigabit connectivity up to 10 km on single-mode fiber.	Physical characteristics	Dimensions	3.48(d) x 1.42(w) x 0.43(h) in. (8.84 x 3.61 x 1.09 cm)	
		Weight	0.35 lb. (0.16 kg)	
		Transceiver form factor	X2	
	Environment	Operating temperature	32ºF to 104ºF (0ºC to 40ºC)	
		Operating relative humidity	15% to 95%, noncondensing	
		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)	
		Altitude	up to 10,000 ft. (3 km)	



Accessory Product Details

ficeessory i roudee s	ctans		
	Electrical characteristics	Power consumption typical	2 W
		Power consumption maximum	3 W
	Cabling	Cable type:: Low metal content, single ISO/IEC 793-2 Type B1;	-mode fiber-optic, complying with ITU-T G.652 and
		Maximum distance:	
		• 10 km	
		Cable length	2m to 10km with 9/125 im single-mode cable
		Fiber type	Single Mode
	Notes	•	bles are not supported Ultra Physical Contact (UPC) surface d Physical Contact (APC) is not recommended
	Services	the service-level description	www.hp.com/networking/services for details on ons and product numbers. For details about services r area, please contact your local HP sales office.
HP X131 10G X2 SC LRM	Ports	1 SC 10-GbE port (IEEE 802.3aq Type 10GBASE-LRM); Duplex: full only	
Transceiver (J9144A)	Physical characteristics	Dimensions	3.54(d) x 1.59(w) x 0.7(h) in. (9.0 x 4.05 x 1.78 cm)
	•	Weight	0.35 lb. (0.16 kg)
An X2 form-factor transceiver that supports		- Transceiver form factor	X2
the 10-Gigabit LRM	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
standard, providing 10- Gigabit connectivity up to 220 m on legacy		Operating relative humidity	0% to 95%, noncondensing
multimode fiber.		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
		Altitude	up to 10,000 ft. (3 km)
	Electrical characteristics	Power consumption typical	3.2 W
		Power consumption maximum	4.2 W
	Cabling	Cable type: 62.5/125 μm or 50/125 μm (core/cladding) diameter, graded-index, content, multimode fiber optic, complying with ITU-T G.651 and ISO/ Type A1b or A1a, respectively (a mode conditioning patch cord may b in some multimode fiber installations);	
		· · · · · ·	nultimode cable @ 160/500 MHz*km nultimode cable @ 200/500 MHz*km

- 0.5-220m with 62.5 µm multimode cable @ 200/500 MHz*km \bullet 0.5-100m with 50 μm multimode cable @ 400/400 MHz*km
- \bullet 0.5-220m with 50 μm multimode cable @ 500/500 MHz*km



Accessory Product De	tails		
		• 0.5-220m with 50 µm m	ultimode cable @ 1500/500 MHz*km
		Cable length	.5m to 220m
		Fiber type	Multi Mode
	Notes	patch cord is not required conditioning patch cords t For supported platforms a product, see the documen	timode @ 1500/500 MHz*km), a mode-conditioning . Other multimode cables may require mode- to achieve the maximum distances listed above. and minimum software requirements to support this at titled "Support for the J9144A 10-GbE X2-SC LRM Transceivers" Manuals Web page. Max
	Services	the service-level descripti	t www.hp.com/networking/services for details on ons and product numbers. For details about services Ir area, please contact your local HP sales office.
HP X112 100M SFP LC BX-D Transceiver (J9099B)	Ports	1 LC 100BASE-BX10 port (only	(IEEE 802.3ah Type 100BASE-BX10-D); Duplex: full
A small form-factor	Physical characteristics	Dimensions	2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)
pluggable (SFP) 100- Megabit BX (bi-directional)		Weight	0.04 lb. (0.03 kg)
"downstream" transceiver	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
that provides 100 Mbps full-duplex connectivity up		Operating relative humidity	0% to 95%, noncondensing
to 10 km on one strand of singlemode fiber. The J9099B connects to the		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
J9100B "upstream"	Cabling	Туре:	
transceiver, or to any IEEE- standard 100BASE-BX10-U		Single-mode fiber optic, c	omplying with ITU-T G.652;
("upstream") device.		Maximum distance:	
		• 0.5-10,000 m (sing	le-mode fiber)
	Notes	Transmit wavelength: 1550 nm. Receive wavelength: 1310 nm. Power consumption is 1.1 watt maximum. For supported platforms and minimum software requirements product, see the document titled "Support for the HP BX Transc "HP Mini-GBICs and SFPs" Manuals Web page. The J9099B connects to the J9100B "upstream" transceiver, or standard 100BASE-BX10-U ("upstream") device. (A 100-BX-D tr only connect to a 100-BX-U product. You cannot connect two 10 transceivers together.)	
	Services	the service-level descripti	t www.hp.com/networking/services for details on ons and product numbers. For details about services Ir area, please contact your local HP sales office.



Accessory Product Details

HP 4200 vl Switch Series

HP X112 100M SFP LC BX-U Transceiver (J9100B)	J Ports	1 LC 100BASE-BX10 port (IEEE 802.3ah Type 100BASE-BX10-U); Duplex: full only	
A small form-factor	Physical characteristics	Dimensions	2.7(d) x 0.55(w) x 0.48(h) in. (6.86 x 1.39 x 1.22 cm)
pluggable (SFP) 100- Megabit BX (bi-directional)		Weight	0.07 lb. (.03 kg)
"upstream" transceiver	Environment	Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
that provides 100 Mbps full-duplex connectivity up		Operating relative humidity	0% to 95%, noncondensing
to 10 km on one strand of singlemode fiber. The J9100B connects to the		Nonoperating/Storage temperature	-40ºF to 185ºF (-40ºC to 85ºC)
J9099B "downstream"	Cabling	Туре:	
transceiver, or to any IEEE- standard 100BASE-BX10-D ("downstream")		Single-mode fiber optic, co	omplying with ITU-T G.652;
device.		Maximum distance:	
		• 0.5-10,000 m (singl	e-mode fiber)
	Notes	product, see the documen "HP Mini-GBICs and SFPs" The J9100B connects to the standard 100BASE-BX10- can only connect to a 100- transceivers together.)	ne J9099B "downstream" transceiver, or to any IEEE- D ("downstream") device. (A 100-BX-U transceiver BX-D product. You cannot connect two 100-BX-U 0 nm. Receive wavelength: 1550 nm.
	Services	the service-level description	www.hp.com/networking/services for details on ons and product numbers. For details about services r area, please contact your local HP sales office.
HP X121 1G SFP LC LH Transceiver (J4860C)	Ports	1 LC 1000BASE-LH port (no full only	o IEEE standard exists for 1550 nm optics); Duplex:
A small form-factor	Physical characteristics		(w) x 0.46(h) in. (5.5 x 1.53 x 1.18 cm)
pluggable (SFP) Gigabit LH	Environment	Weight: 0.04 lb. (0.02 kg) Operating temperature: -4	0°F to 185°F (-40°C to 85°C)
transceiver that provides a full-duplex Gigabit solutior			y: 0% to 95% @ 77°F (25°C), noncondensing
up to 70 km on single-	I		nperature: -40°F to 185°F (-40°C to 85°C)
mode fiber.	Cabling	Altitude: up to 10,000 ft. (3 Cable type:	3 KM)
			single-mode fiber-optic, complying with ITU-T 93-2 Type B1;

• 10-70,000 m (single-mode fiber)



Accessory Product De	etails	
	Notes Services	Power consumption is 0.8 watts typical with 1 watt maximum at 100% utilization. For distances less than 20 km, a 10 dB attenuator must be used. For distances between 20 km and 40 km, a 5 dB attenuator must be used. Attenuators can be purchased from most cable vendors. Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP X121 1G SFP LC SX	Ports	1 LC 1000BASE-SX port; Duplex: full only
Transceiver (J4858C)	Physical characteristics	Dimensions: 2.24(d) x 0.54(w) x 0.48(h) in. (5.69 x 1.37 x 1.22 cm) Weight: 0.04 lb. (0.02 kg)
A small form-factor pluggable (SFP) Gigabit SX transceiver that provides a full-duplex Gigabit solution up to 550 m on multimode fiber.	Environment	Transceiver form factor: SFP Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 5% to 85%, noncondensing Nonoperating/Storage temperature: -40°F to 203°F (-40°C to 85°C) Altitude: up to 10,000 ft. (3 km)
	Electrical characteristics	Power consumption typical: 0.4 W Power consumption maximum: 0.7 W
	Cabling	Туре:
		 62.5/125 μm or 50/125 μm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively;
		Maximum distance:
		 2-220 m (62.5 μm core diameter, 160 MHz*km bandwidth 2-275 m (62.5 μm core diameter, 200 MHz*km bandwidth 2-500 m (50 μm core diameter, 400 MHz*km bandwidth) 2-550 m (50 μm core diameter, 500 MHz*km bandwidth) Cable length: 2-550m Fiber type: Multi Mode
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.



Accessory Product Details			
HP X121 1G SFP LC LX Transceiver (J4859C)	Ports Physical characteristics	1 LC 1000BASE-LX port (IEEE 802.3z Type 1000BASE-LX); Duplex: full only Dimensions: 2.24(d) x 0.54(w) x 0.486(h) in. (5.69 x 1.37 x 1.23 cm) Weight: 0.04 lb, (0.03 kg)	
HP X121 1G SFP LC LX Transceiver: An SFP format gigabit transceiver with LC connectors using LX technology.	Environment	Weight:0.04 lb. (0.02 kg) Operating temperature: 32°F to 158°F (0°C to 70°C) Operating relative humidity: 0% to 85%, noncondensing Nonoperating/Storage temperature: -40°F to 212°F (-40°C to 100°C) Altitude: up to 10,000 ft. (3 km)	
teennotogy.	Cabling	Туре:	
		 Either single mode or multimode; 62.5/125 μm or 50/125 μm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively; Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1; 	
		Maximum distance:	
		 2-550 m (multimode 62.5 μm core diameter, 500 MHz*km bandwidth) 2-550 m (multimode 50 μm core diameter, 400 MHz*km bandwidth) 2-550 m (multimode 50 μm core diameter, 500 MHz*km bandwidth) 2-10,000 m (single-mode fiber) 	
	Notes	A mode conditioning patch cord may be needed in some multimode fiber installations. Wavelength: 1310nm	
		Power Consumption: < 500mW Typical	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
HP X121 1G SFP RJ45 T	Ports	1 RJ-45 1000BASE-T port (IEEE 802.3ab Type 1000BASE-T); Duplex: full only	
Transceiver (J8177C)	Physical characteristics	Dimensions: 2.71(d) x 0.54(w) x 0.55(h) in. (6.88 x 1.37 x 1.4 cm) Weight: 0.06 lb. (0.03 kg)	
HP X121 1G SFP RJ45 T Transceiver: An SFP format gigabit transceiver with	Environment	Operating temperature: 32°F to 158°F (0°C to 70°C); with 100 LFM airflow over the SFP module	
RJ45 connectors using		Operating relative humidity: 0% to 95% @ 75°F (25°C), noncondensing	
1000BaseT technology.		Nonoperating/Storage temperature: -40°F to 185°F (-40°C to 85°C)	
		Nonoperating/Storage relative humidity: 0% to 95% @ 77°F (25°C), noncondensing	
		Altitude: up to 10,000 ft. (3000 km)	
	Cabling	Cable type: 1000BASE-T: Category 5 (5E or better recommended), 100 Ù differential 4- pair unshielded twisted pair (UTP) or shielded twisted pair (STP) balanced, complying with IEEE 802.3ab 1000BASE-T;	
		Maximum distance:	



Accessory Product Details

• 100 m				
Notes	Power consumption is nominally 1 watt. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the J8177C 1000Base-T Mini- GBIC" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J8177C Gigabit copper mini-GBIC is not supported on dual-personality ports. The J8177C is capable of 100 Mb operation. This is supported on only the HP E8200zl, E5400zl, and HP E6200-24G-mGBIC yl Switches using software version K.12.21 or later. Use the "auto-100" port setting to enable 100 Mb operation. Important: The earlier J8177B does not support 100 Mb operation. When used			
	in the Switch gl 20-Port 10/100/1000 Module (J4908A), the J8177C mini-GBIC can be installed in either the upper or lower mini-GBIC port, but will block access to the other port.			
Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.			

HP X122 1G SFP LC BX-D Transceiver (J9142B)	Ports	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-D); Duplex: full only	
A small form-factor pluggable (SFP) Gigabit-BX (bi-directional)	Physical characteristics	Dimensions	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)
	Environment	Weight	0.04 lb. (0.02 kg)
"downstream" transceiver		Operating temperature	32ºF to 158ºF (0ºC to 70ºC)
that provides a full-duplex Gigabit solution up to 10 km on one strand of single-mode fiber. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE- standard 1000BASE-BX10- U ("upstream") device.		Operating relative humidity	0% to 95%, non-condensing
		Non-operating/ Storage temperature	–40ºF to 185ºF –40ºC to 85ºC)
		Type: Single-mode fiber optic, complying with ITU-T G.652;	
		Maximum distance:	
		• 0.5-10,000 m (singl	e-mode fiber)
	Notes	Transmit wavelength: 1490 nm. Receive wavelength: 1310 nm. Power consumption is 1 watt maximum. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9142B connects to the J9143B "upstream" transceiver, or to any IEEE- standard 1000BASE-BX10-U ("upstream") device. (A 1000-BX-D transceiver can only connect to a 1000-BX-U product. You cannot connect two 1000-BX-D transceivers together.)	
the service-level descriptions and product nun		www.hp.com/networking/services for details on on and product numbers. For details about services rarea, please contact your local HP sales office.	



Accessory Product Details

HP X122 1G SFP LC BX-U Transceiver (J9143B)	Ports	1 LC 1000BASE-BX10 port full only	1 LC 1000BASE-BX10 port (IEEE 802.3ah Type 1000BASE-BX10-U); Duplex: full only		
A small form-factor pluggable (SFP) Gigabit-BX (bi-directional) "upstream" transceiver that provides a full-duplex Gigabit solution up to 10 km on one strand	Physical characteristics	Dimensions	2.19(d) x 0.54(w) x 0.46(h) in. (5.57 x 1.37 x 1.18 cm)		
		Weight	0.04 lb. (0.02 kg)		
		Operating temperature	32ºF to 158ºF (0ºC to 70ºC)		
		Operating relative humidity	0% to 95%, non-condensing		
of single-mode fiber. The J9143B connects to the J9142B "downstream"		Non-operating/ Storage temperature	–40ºF to 185ºF –40ºC to 85ºC)		
transceiver, or to any IEEE- standard 1000BASE-BX10- D ("downstream") device.		Type: Single-mode fiber optic, complying with ITU-T G.652; Maximum distance: • 0.5-10,000 m (single-mode fiber)			
	Notes	Transmit wavelength: 1310 nm. Receive wavelength: 1490 nm. For supported platforms and minimum software requirements to support this product, see the document titled "Support for the HP BX Transceivers" on the "HP Mini-GBICs and SFPs" Manuals Web page. The J9143B connects to the J9142B "downstream" transceiver, or to any IEEE- standard 1000BASE-BX10-D ("downstream") device. (A 1000-BX-U transceiver can only connect to a 1000-BX-D product. You cannot connect two 1000-BX-U transceivers together.) Power consumption is 1 watt maximum.			
	Services	Refer to the HP website at: www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.			
HP 0.5 m Multimode OM3 LC/LC Optical Cable	Cabling	Cable type : 50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective			
(AJ833A)			MHz/km as detailed in TIA-492AAAC for distances o		
		Maximum distance : 10Gbps Transfer Rate (Eth	iernet): 300m		
	Notes		d duplex fiber optic multimode OM3 50/125 um net assembly with LC duplex connectors on one enc on other end.		
		 Coating diameter: 2 Optical glass: Bandy @850/1300nm. Optical glass: Bandy 	iameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0un 45 ± 10um width: For LED sources: 1500/500 MHz-km width: For Laser sources: 2000/500 MHz-km SEL Laser sources: 600 / 600 meters @850/1300nm		



Accessory Product D	etails	
		 for Gigabit Ethernet compliant links. CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber and designed to work in both the 850 and 1300 nm wavelength windows. BULK CABLE & CABLE ASSEMBLY CONFIGURATION: Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. Jacket Color: Aqua for OM3 multimode per TIA 598 Boot Color: White Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP 1 m Multimode OM3 LC/LC Optical Cable (AJ834A)	Cabling	Cable type : 50/125 μm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m
		Maximum distance : 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.
		 Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. BULK CABLE & CABLE ASSEMBLY CONFIGURATION: Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. Jacket Color: Aqua for OM3 multimode per TIA 598 Boot Color: White Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg



QuickSpecs

Accessory Product Details		
rvices	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	
bling	Cable type : 50/125 μm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;	
	Maximum distance : 10Gbps Transfer Rate (Ethernet): 300m	
Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.	
rvices	 Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. BULK CABLE & CABLE ASSEMBLY CONFIGURATION: Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. Jacket Color: Aqua for OM3 multimode per TIA 598 Boot Color: White Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg 	
	vices	



Accessory Product D	etails	
HP 5 m Multimode OM3 LC/LC Optical Cable (AJ836A)	Cabling	Cable type : 50/125 μm core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;
		Maximum distance : 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: This specification defines the detail requirements for a tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.
		 Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. BULK CABLE & CABLE ASSEMBLY CONFIGURATION: Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. Jacket Color: Aqua for OM3 multimode per TIA 598 Boot Color: White Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.



Accessory Product Details			
HP 15 m Multimode OM3 LC/LC Optical Cable (AJ837A)	Cabling	Cable type : 50/125 µm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;	
		Maximum distance : 10Gbps Transfer Rate (Ethernet): 300m	
	Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.	
		 Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. BULK CABLE & CABLE ASSEMBLY CONFIGURATION: Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. Jacket Color: Aqua for OM3 multimode per TIA 598 Boot Color: White Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg 	
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	



Accessory Product De	etails	
HP 30 m Multimode OM3 LC/LC Optical Cable (AJ838A)	Cabling	Cable type : 50/125 μm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;
		Maximum distance : 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.
		 Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. BULK CABLE & CABLE ASSEMBLY CONFIGURATION: Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. Jacket Color: Aqua for OM3 multimode per TIA 598 Boot Color: White Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.



Accessory Product Details		
HP 50 m Multimode OM3 LC/LC Optical Cable (AJ839A)	Cabling	Cable type : 50/125 μm (core/cladding) diameter, mulitimode fiber optic, with effective modal bandwidth of 2000 MHz/km as detailed in TIA-492AAAC for distances of up to 300 m;
		Maximum distance : 10Gbps Transfer Rate (Ethernet): 300m
	Notes	Cable Specs: Tight buffered duplex fiber optic multimode OM3 50/125 um fiber optic cable and Ethernet assembly with LC duplex connectors on one end and LC duplex connectors on other end.
		 Dimensions: Core diameter: 50 ± 3.0um Cladding diameter: 125 ± 2.0um Coating diameter: 245 ± 10um Optical Glass Bandwidth: For LED sources: 1500/500 MHz-km @850/1300nm. Optical Glass: For Laser sources: 2000/500 MHz-km @850/1300nm. VCSEL Laser sources: Shall achieve 600 / 600 meters @850/1300nm for Gigabit Ethernet compliant links. CABLE: The cable is duplex zipcord graded index 50/125um multimode optical fiber. The cable is designed to work in both the 850 and 1300 nm wavelength windows. BULK CABLE & CABLE ASSEMBLY CONFIGURATION: Jacket Material: Riser Grade - Low Smoke Zero Halogen thermoplastic. Jacket Color: Aqua for OM3 multimode per TIA 598 Boot Color: White Insertion Loss: less than 0.5 dB @ 850 with LED source, 0.003 dB/M added for lengths > 30 meters. Maximum Cable attenuation: 3.0 dB/km @ 850 nm, 1.0 dB/Km @ 1310 nm @ 23°C as tested in accordance with EIA 455-46. Weight: Air Packed Weight: 1 LB Net Weight: 0.454Kg
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.



HP Premier Flex LC/LC Multi-mode OM4 2 fiber	Notes	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.
1m Cable (QK732A)		 Core Diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um Bandwidth: 3000 MHz-km @ 850nm (Laser) Jacket Color: Blue Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic Boot Color: White Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable (QK733A)	Notes	 Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um Bandwidth: 3000 MHz-km @ 850nm (Laser) Jacket Color: Blue Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic Boot Color: White Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @
	Services	23°C as tested in accordance with EIA 455-45 Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.



HP Premier Flex LC/LC Multi-mode OM4 2 fiber	Notes	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.
5m Cable (QK734A)		 Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um Bandwidth: 3000 MHz-km @ 850nm (Laser) Jacket Color: Blue Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic Boot Color: White Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable (QK735A)	Notes	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating
		diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser)
		• Jacket Color: Blue
		 Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic Boot Color: White
		• Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable.
		 Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.



HP Premier Flex LC/LC Multi-mode OM4 2 fiber	Notes	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end.
30m Cable (QK736A)		 Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um Bandwidth: 3000 MHz-km @ 850nm (Laser) Jacket Color: Blue Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic Boot Color: White Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, cUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable (QK737A)	Notes	Cable Specs: Graded-index, "bendable" fiber optic multimode OM3+ 50/125um duplex cable and Ethernet assembly with LC duplex connectors on each end. • Core diameter: 50um ±3um, Cladding diameter: 125um ±2um; Coating diameter: 245 ± 10um • Bandwidth: 3000 MHz-km @ 850nm (Laser) • Jacket Color: Blue • Jacket Material: Riser Grade – Low Smoke Zero Halogen (LSZH) thermoplastic
		 Boot Color: White Outer Jacket Print: HP PremierFlex OM3+ Fiber Optic Cable, 50/125um, Type OFNR (UL), LSZH, CUL, OFN FT4, ROHS. Cable also has a longitudinal white stripe that runs the entire length of the cable. Insertion Loss: Less than 0.5dB @ 850nm with LED source, 0.003dB/m added for lengths >30m Maximum Cable Attenuation: 3.0 dB/km @ 850nm, 1.0 dB/km @ 1310nm @ 23°C as tested in accordance with EIA 455-45
	Services	Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.



QuickSpecs

Accessory Product Details

HP gl/xl/vl Switch	Physical characteristics	Dimensions	7.9(d) x 6.3(w) x 5.0(h) in. (20.07 x 16.0 x 12.7 cm)
Redundant Power Supply		Weight	5.55 lb. (2.5 kg)
(J4839A)	Electrical characteristics	Voltage	100-127/200-240 VAC
		Current	8.2/3.8 A
		Frequency	50/60 Hz
	Notes	For additional RPS specification information, see the data sheet for the product in which the RPS is being installed. Refer to the HP website at: www.hp.com/networking/services for details the service-level descriptions and product numbers. For details about see and response times in your area, please contact your local HP sales office	
	Services		
HP Identity Driven Manager 3.0 Software		3.0 software and lice	ense for managing up to 500 users.
500-User License (J9438A	⁾ RADIUS server support	Microsoft Network Policy Server on Windows Server 2008 (32-bit) Microsoft Internet Authentication Service (IAS) on Windows Server 200 bit) FreeRADIUS supplied with Red Hat Enterprise Linux (4.7 and 5.2) RADIUS on the Network Access Controller 800 FreeRADIUS supplied with SuSE Linux Enterprise Server (9.3 and 10.2)	
	Features	Intuitive Explorer-style interface OpenView NNM integration Application of policies by user identity	
		• Auto VLAN a	ssignment
			lity of service by user
		 Auto set ban 	dwidth assignment by user
		Rule-based access	rights deployment
		Dynamic rights ass	ignment based on:
		• Time	
		Location	
		 User system 	
		Auto-discovery of:	
		 RADIUS serv Realms Users	ers
	Notes	Additional specifica	itions
			vironments with up to 10,000 users. to 10 RADIUS servers with HP Identity Driven Manager

• Supports up to 10 RADIUS servers with HP Identity Driven Manager agents installed.

Requires the HP PCM Plus 3.0 or greater network management platform.



QuickSpecs

	 Please see HP PCM Plus 3.0 for hardware and software system requirements.
Services	3-Year, 9x5 SW phone support, software updates (UQ124E)
	3-year, 24x7 SW phone support, software updates (UQ125E)
	Refer to the HP website at www.hp.com/networking/services for details on the
	service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

HP Identity Driven Manager 3.0 Software Additional 1,000-User	License to add support for managing an additional 1,000 users with the Identity Driven Manager 3.0 product.		
License (J9440A)	RADIUS server support	_	
	Features	_	
	Notes	Additional specifications	
		 Supports environments with up to 10,000 users. Supports up to 10 RADIUS servers with HP Identity Driven Manager agents installed. 	
		Requires the HP PCM Plus 3.0 or greater network management platform.	
		 Please see HP PCM Plus 3.0 for hardware and software system requirements. Requires the HP Identity Driven Manager 3.0 base product (J9438A). 	
		Multiple licenses for additional 1,000 users can be added to the base HP Identity Driven Manager product to support larger numbers of users.	
	Services	3-year, 24x7 SW phone support, software updates (UQ119E) 3-Year, 9x5 SW phone support, software updates (UQ118E)	
		Refer to the HP website at www.hp.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	

HP 4200 vl Switch Series

QuickSpecs

HP Identity Driven Manager 3.0 Software Unlimited-User License (J9439A)	Identity Driven Manager 3.0 software and license for managing an unlimited number of users.	
	RADIUS server support	Microsoft Network Policy Server on Windows Server 2008 (32-bit) Microsoft Internet Authentication Service (IAS) on Windows Server 2003 (32- bit) FreeRADIUS supplied with Red Hat Enterprise Linux (4.7 and 5.2) RADIUS on the Network Access Controller 800 FreeRADIUS supplied with SuSE Linux Enterprise Server (9.3 and 10.2)
	Features	Intuitive Explorer-style interface OpenView NNM integration Application of policies by user identity
		 Auto VLAN assignment Auto set quality of service by user Auto set bandwidth assignment by user
		Rule-based access rights deployment
		Dynamic rights assignment based on:
		 Time Location User system
		Auto-discovery of:
		 RADIUS servers Realms Users
	Notes	Additional specifications
		 Supports environments with up to 10,000 users. Supports up to 10 RADIUS servers with HP Identity Driven Manager agents installed.
		Requires the HP PCM Plus 3.0 or greater network management platform.
		Please see HP PCM Plus 3.0 for hardware and software system requirements.
	Services	3-year, 24x7 SW phone support, software updates (UQ133E) 3-Year, 9x5 SW phone support, software updates (UQ132E)
		Refer to the HP website at www.hp.com/networking/services for details on the
		service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.



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