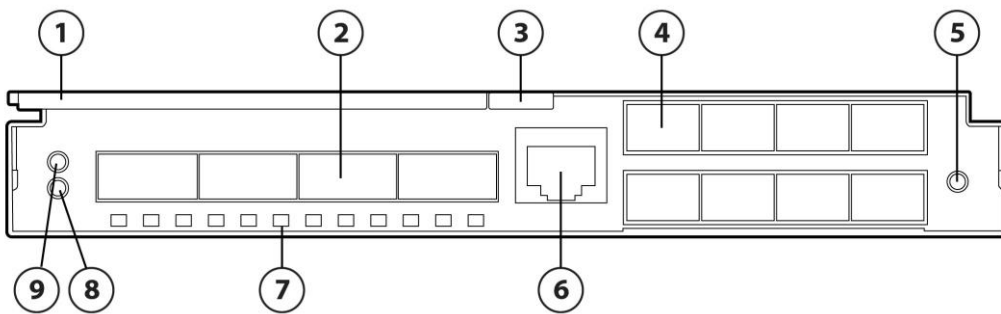


### Overview

#### HP 6127XLG Blade Switch

Today's complex data centers require a demanding networking infrastructure. It all starts at the edge and that's where the HP 6127XLG Ethernet Blade Switch excels. The HP 6127XLG Switch is designed to support virtualized server environments with exceptional bandwidth of 20Gb to each and every server, while providing a mix of 40Gb and 10Gb links (with an astounding aggregate of 240Gb) to the core network. Combined with hardware support for VXLAN encapsulation, this provides the perfect switch for Private/Public/Hybrid Cloud applications. Enterprise customers will not be disappointed with the HP 6127XLG which also provides a converged fabric solution that supports Ethernet, iSCSI, Fibre Channel over Ethernet (FCoE), and Fibre Channel Forwarder (FCF) protocols that enables connectivity for multiple storage topologies. The HP 6127XLG supports the HP Software-defined Network (SDN) ecosystem that delivers simple, open, and Enterprise ready benefits to automate the data center network. With support for IETF industry standard TRILL (Transparent Interconnection of Lots of Links) and SPB (Shortest Path Bridging), the HP 6127XLG delivers loop free large Layer 2 networks with multi-path support. Using HP's Intelligent Resilient Framework, (IRF) multiple switches can be virtualized and managed as a single entity with HP's Intelligent Management Center (IMC). A full complement of Layer 2/3 protocols and the latest in network security features round out this most capable of blade switches.



**Figure 1 HP 6127XLG Blade Switch**

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

### Models

HP 6127XLG Ethernet Blade Switch

787635-B21

HP 6127XLG Ethernet TAA Blade Switch

787635-B22

### Compatibility

**HP ProLiant Servers**

- HP ProLiant BL460c Gen9
- HP ProLiant BL660c Gen9
- HP ProLiant BL420c Gen8
- HP ProLiant BL460c Gen8
- HP ProLiant BL465c Gen8

### Overview

HP ProLiant BL660c Gen8

HP ProLiant BL460 G7

HP ProLiant BL465 G7

HP ProLiant BL490 G7

HP ProLiant BL620 G7

HP ProLiant BL680 G7

HP ProLiant BL685 G7

**NOTE:** Some servers listed above may be discontinued.

### HP Integrity Servers

HP Integrity BL860c i2 Server Blade

HP Integrity BL860c i4 Server Blade

HP Integrity BL870c i2 Server Blade

HP Integrity BL870c i4 Server Blade

HP Integrity BL890c i2 Server Blade

HP Integrity BL890c i4 Server Blade

HP Integrity Superdome 2

**NOTE:** Some servers listed above may be discontinued.

### ProLiant BL c-Class Server Blade Enclosures

HP BladeSystem c7000 Enclosure

### Standard Features

#### Standard Features

##### Performance

- 240Gb uplink bandwidth / 320Gb available server side bandwidth
- Dedicated 4x10Gb internal cross link ports between adjacent switches
- Non-blocking architecture
- Wire-speed switching and IPv4/IPv6 routing on all ports
- Supports FCoE N-Port Virtualization (NPV) and Fibre Channel Forwarder (FCF) modes
- Combine up to 8 switches into a single virtual switch using IRF II
- FCF provides a direct attach capability which allows attachment of 3PAR storage array FCoE ports directly to the switch
- QSFP+ ports support 4 x 10Gb with optional breakout cable
- SFP+ ports support either 1Gb or 10Gb depending on module inserted
- Any uplink or cross connect port can be used for IRF connections
- Cut-through switching
- Hardware-based wire-speed access control lists (ACLs)
- Data Center Bridging (DCBX)
- Support for VEPA (IEEE 802.1Qbg)
- Support for VXLAN (RFC 7348)

---

##### Management

- Remote configuration and management CLI
- Standards-based SNMP management via SNMPv1, v2c and v3
- Out of band management via Onboard Administrator
- HP IMC Virtual Application Networking Fabric Manager
- Virtual Application Network (VAN)
- SDN with OpenFlow 1.3
- RJ45 console port
- HTTPS Web based management
- sFlow
- Manager and operator privilege levels
- Command authorization via RADIUS
- Complete session logging for problem resolution
- LLDP Discovery protocol
- IPv6 management
- Multiple flash images
- Multiple configuration files
- Syslog
- Network Time Protocol (NTP)
- IEEE 1588v2 Precision Time Protocol (PTP)

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##### Security

- IEEE 802.1X user authentication
- MAC-based authentication with RADIUS server
- Access Control Lists (ACLs)
- Secure FTP
- STP Root Guard
- DHCP Protection from unauthorized DHCP servers
- IP Source Guard
- Dynamic ARP protection to prevent eavesdropping
- Endpoint Admission Defense (EAD)
- RADIUS/TACACS+

### Standard Features

- Secure management via SSHv2 and SNMPv3
- Unicast Reverse Path Forwarding (URPF)
- Monitor link and Smart link
- IPsec
- IKE (Internet Key Exchange)
- Disable password recovery

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### Layer 2 Switching

- 128K MAC addresses
- 4094 VLANs
- IEEE 802.1ad QinQ VLANs
- Per VLAN Spanning Tree (PVST+)
- Private VLANs (PVLAN)
- Multicast VLAN Registration Protocol (MVRP)
- Jumbo frame support
- Port Aggregation
- Spanning Tree Protocol, MSTP, RSTP, STP Root Guard
- IP Multicast Snooping and data-driven IGMP
- Transparent Interconnect of Lots of Links (TRILL)
- Shortest Path Bridging (SPB)
- Multiple Label Switching (MPLS)
- Virtual Private LAN Service (VPLS)

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### Layer 3 Routing

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

---

### Quality of Service (QoS)

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

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### Resiliency and High Availability

- Intelligent Resilient Framework (IRF) - Creates virtual resilient switching fabrics, up to eight 6127XLG switches acting as a single Layer 2/3 switch; Switches do not have to be co-located and can be part of a disaster recovery system; Servers or switches can be attached using standard LACP for automatic load balancing and high availability; Simplifies network operation by eliminating Spanning Tree, ECMP and VRRP.
- Device Link Detection Protocol (DLDP) - Monitors Link connectivity and shuts down ports at both ends if unidirectional traffic is detected

### Standard Features

- Virtual Router Redundancy Protocol (VRRP)

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### Monitoring and Diagnostics

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

### Service and Support

#### Service and Support **HP Technology Services**

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

#### **Protect your business beyond warranty with HP Care Pack Services**

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

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

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### Recommended HP Care Pack Services for your HP product

#### Optimized Care

##### **3- Year HP Foundation Care CTR**

HP Foundation Care Call-To-Repair Service connects you to HP around the clock for assistance on resolving issues -this includes our commitment to repair hardware within six hours after opening your case and response to software questions within two hours.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW>

##### **HP Installation of ProLiant Add On Options Service**

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

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#### Standard Care

##### **3-Year HP Foundation Care 24x7**

HP Foundation Care 24x7 connects you to HP around the clock for assistance on resolving issues - hardware onsite response within four hours and software call back within two hours after opening your case.

<http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA4-8876ENW>

##### **HP Installation of ProLiant Add On Options Service**

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

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#### Related Services

##### **HP Installation and Startup Service for HP BladeSystem c-Class Enhanced Network**

HP Provides for the configuration and testing of BladeSystem Ethernet interconnect switches to facilitate proper implementation of network protocols and access to advanced features.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4aa0-5969ENW.pdf>

##### **HP Proactive Select Service**

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

**NOTE:** Additional HP Care Pack services can be found at: <http://hp.com/go/cpc>

### Service and Support

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

**NOTE:** Insight Remote Support is a prerequisite for HP Proactive Care

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

HP's Support Center Mobile App allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

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

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**Parts and materials** HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

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**Service Coverage** The HP 6127XLG includes 3-years hardware support with next business day onsite response during standard business hours. If you have requirements for longer durations of service, faster response times or more comprehensive support, HP Care Pack services for the HP 6127XLG are available to uplift or extend your coverage.

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**For more information** To learn more about HP BladeSystem services, please contact your HP sales representative or HP Authorized ServiceONE Channel Partner. Or visit: <http://www.hp.com/services/bladesystem>

### Related Options

<b>SFP Options</b>	HP X120 1G SFP LC SX Transceiver	JD118B
	HP X120 1G SFP LC LX Transceiver	JD119B
	HP X125 1G SFP LC LH40 1310nm Transceiver	JD061A
	HP X120 1G SFP LC LH40 1550nm Transceiver	JD062A
	HP X125 1G SFP LC LH70 Transceiver	JD063B
	HP X120 1G SFP RJ45 T Transceiver	JD089B

<b>SFP+ Options</b>	HP X130 10G SFP+ LC SR Transceiver	JD092B
	HP X130 10G SFP+ LC LRM Transceiver	JD093B
	HP X130 10G SFP+ LC LR Transceiver	JD094B
	HP X130 10G SFP+ LC ER 40km Transceiver	JG234A

<b>QSFP+ Options</b>	HP X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver	JG661A
	HP X140 40G QSFP+ MPO SR4 Transceiver	JG325B
	HP X140 40G QSFP+ MPO MM 850nm CSR4 300m Transceiver	JG709A

<b>Direct Attach Cables</b>	HP X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
	HP X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
	HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
	HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
	HP X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C
	HP X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable	JG326A
	HP X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable	JG327A
	HP X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable	JG328A
	HP X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
	HP X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
HP X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A	

<b>Service and Support Offerings</b>	<b>Hardware Services On-site Service</b>	
	HP 3 year 24x7 612x Blade Switch Foundation Care Service	U2HF2E
	HP 3 year Call-to-Repair 612x Blade Switch Foundation Care Service	U2HF4E

#### Installation Services

HP Installation of ProLiant Add On/In Options Service	UH745E
HP Enhanced Network Installation and Startup Service for HP BladeSystem	UE603E

**NOTE:** Additional HP Care Pack services can be found at: <http://hp.com/go/cpc>



### Technical Specifications

<b>Shipping Dimensions</b>	<b>Length</b>	11.54 in (293 mm)	
	<b>Width</b>	14.57 in (370 mm)	
	<b>Height</b>	3.54 in (95 mm)	
	<b>Shipping Weight</b>	2.1 kg (4.62 lbs)	
<b>Product Specifications</b> <b>Hardware</b>	<b>Performance</b>	1.2Tbps throughput 8x10Gb and 4x40Gb uplink ports 16x20Gb downlink (server) ports 4 x10Gbps cross-link ports	
	<b>Forwarding rate</b>	14.8 million pps per 10 Gig port 59.2 million pps per 40 Gig port	
		Non-blocking, full-wire speed for all connections Auto-MDI/MDIX, auto-negotiation and auto-sensing with full-duplex support.	
	<b>Forwarding Mode</b>	Store and forward/Cut Through	
	<b>Latency</b>	1us (store and forward mode)	
	<b>MAC Addresses</b>	Supports 128K MAC addresses per switch in a BladeSystem Enclosure	
	<b>Forwarding Table Age Time</b> (Maximum age)	10 to 1,000,000 seconds (default: 300 seconds)	
	<b>VLAN IDs</b>	4094	
	<b>Jumbo Frame</b>	10K Bytes	
	<b>IGMP Groups</b>	1024	
	<b>Memory</b>	2 GB Main, 512MB flash and 9MB packet buffer	
	<b>Connectors and Cabling</b>	<b>Connector</b>	4 QSFP+ (40Gb/4 x10Gb/IRF) 8 SFP+/SFP (1Gb/10Gb/IRF) 1 RJ45 Management
		<b>Cable Support</b>	FCC Class A ICES-003 Class A AS/NZS 3548 Class A VCCI Class A
	<b>Indicators</b>	Module health, amber/green Module locator (UID), blue QSFP+ port link/activity, green SFP+ port link/activity, green	
	<b>Dimensions</b>	<b>Length</b>	10.54 in (267.7 mm)
		<b>Width</b>	7.59 in (192.8 mm)
<b>Height</b>		1.1 in (27.9 mm)	
		1.2	
<b>Weight</b>	2.0 kg (4.41 lbs)		
<b>Environmental Ranges</b>	<b>Temperature Range</b>		
	Operating	50° to 95° F (10° to 35° C)	

### Technical Specifications

Non-operating  
Relative Humidity  
(non-condensing)      -40° to 158° F (-40° to 70° C)  
Operating 10% to 90%

**Power Specification**      **Power Requirements**      95W

#### Standards Support

##### General protocols

IEEE 802.1ag Service Layer OAM  
IEEE 802.1D MAC Bridges  
IEEE 802.1p Priority  
IEEE 802.1Q VLANs  
IEEE 802.1Qbg Virtual Edge Bridging  
IEEE 802.1s (MSTP)  
IEEE 802.1v VLAN classification by Protocol and Port  
IEEE 802.1w Rapid Reconfiguration of Spanning Tree  
IEEE 802.1X PAE  
IEEE 802.1AX / 802.3ad Link Aggregation Control Protocol (LACP)  
IEEE 802.3ae 10 Gigabit Ethernet  
IEEE 1588 v2 Precision Time Protocol (PTP)  
RFC 768 UDP  
RFC 792 ICMP  
RFC 793 TCP  
RFC 826 ARP  
RFC 854 TELNET  
RFC 925 Multi-LAN Address Resolution  
RFC 951 BOOTP  
RFC 1058 RIPv1  
RFC 1350 TFTP Protocol (revision 2)  
RFC 1519 CIDR  
RFC 1542 BOOTP Extensions  
RFC 2131 DHCP  
RFC 2453 RIPv2  
RFC 3768 VRRP  
RFC 4675 RADIUS VLAN & Priority  
RFC 7348 VXLAN  
802.1r GARP Proprietary Attribute Registration Protocol (GPRP)

##### FCoE

802.1Qaz DCBx  
802.1Qaz ETS  
802.1Qbb PFC  
FIP Snooping  
Fibre Channel Forwarder (FCF)  
NPV mode

##### IP Multicast

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

##### IPv6

RFC 4443 ICMPv6  
RFC 4541 IGMP & MLD Snooping Switch

### Technical Specifications

RFC 4861 IPv6 Neighbor Discovery  
RFC 4862 IPv6 Stateless Address Auto-configuration

#### Layer 3

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

#### MIBs

IEEE 8021ag CFM-MIB  
IEEE 8021Q CFM-MIBv2  
IEEE 8021AB LLDP-MIB  
IEEE 8021AB LLDP-EXT-DOT1-MIB  
IEEE 8021AB LLDP-EXT-DOT3-MIB  
ANSI/TAA 1057 LLDP-EXT-MED-MIB  
IEEE 8023 LAG-MIB  
RFC 1213 MIB  
RFC 1493 BRIDGE-MIB  
RFC 2096 IP-FORWARD-MIB  
RFC 2233 IF-MIB  
RFC 2273 SNMP-NOTIFICATION-MIB  
RFC 2571 SNMP-FRAMEWORK-MIB  
RFC 2572 SNMP-MPD-MIB  
RFC 2573 SNMP-TARGET-MIB  
RFC 2674 P-BRIDGE-MIB  
RFC 2674 Q-BRIDGE-MIB  
RFC 3414 SNMP-USER-BASED-SM-MIB  
RFC 3415 SNMP-VIEW-BASED-ACM-MIB  
RFC 3417 SNMPv2-TM-MIB  
RFC 3418 SNMPv2-MIB  
RFC 3826 SNMP-USM-AES-MIB  
RFC 4022 TCP-MIB  
RFC 4044 FC-MGMT-MIB  
RFC 4113 UDP-MIB  
RFC 4133 ENTITY-MIB  
RFC 4273 BGP4-MIB  
RFC 4747 T11-FC-VIRTUAL-FABRIC-MIB  
RFC 4750 OSPF-MIB  
RFC 4750 OSPF-TRAP-MIB  
RFC 4936 T11-FC-ZONE-SERVER-MIB  
SFLOW-MIB (V5)

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#### Safety and Compliance Safety Certifications

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

### Technical Specifications

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

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

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

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