
HP AdvanceStack Switches and Bridges





HP AdvanceStack Switches and Bridges

HP AdvanceStack switches and bridges provide scalability and deliver high performance for existing and future networks.

Performance at the workgroup, department, or campus level

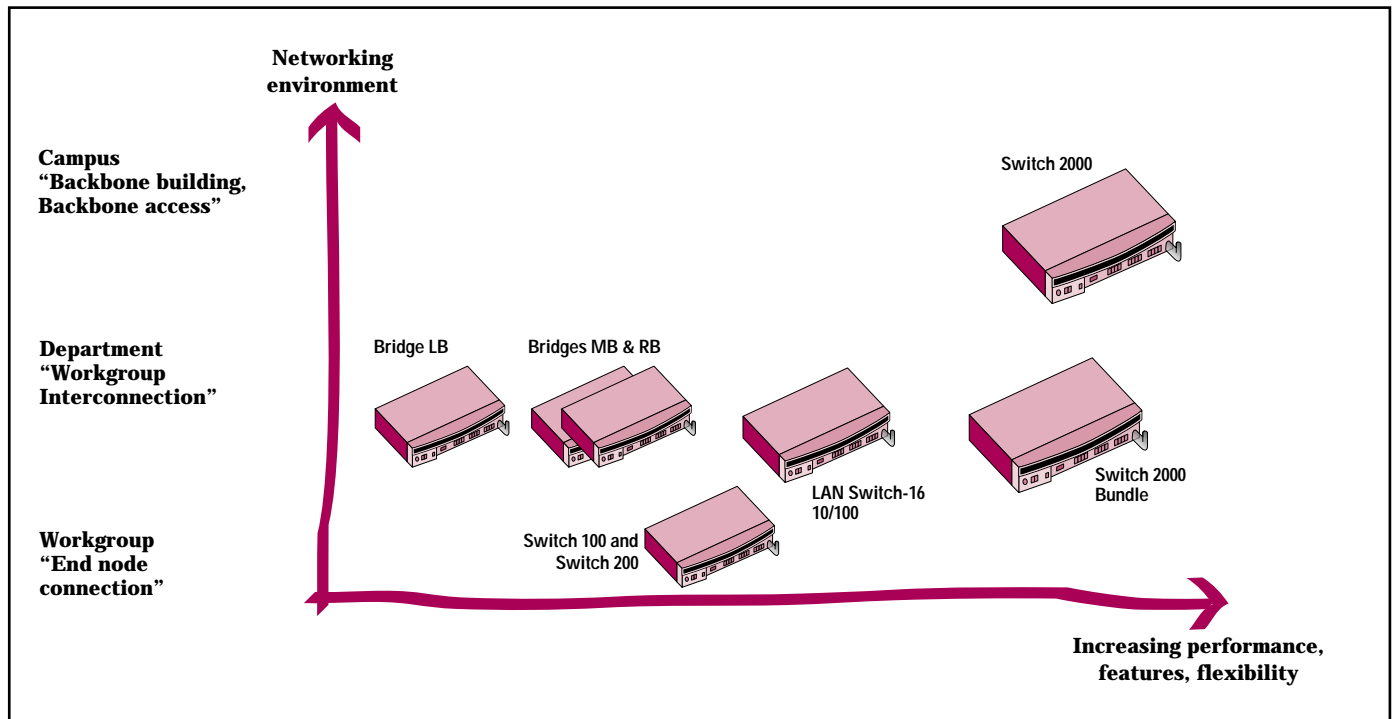
HP AdvanceStack switches improve network performance by increasing the number of simultaneous communications on the network. Fully compatible with existing 10Base-T infrastructure and LAN adapters, they allow trouble-free upgrades, guarantee investment protection, and minimize network disruption. For smaller networks, HP AdvanceStack bridges provide a cost-effective solution for reducing network congestion.

Integration of 10 Mbps and 100 Mbps Ethernet networks

As networks grow, 100 Mbps workgroups or nodes are added to existing legacy networks that typically operate at 10 Mbps. With HP AdvanceStack switches, these mixed 10 and 100 Mbps Ethernet networks can be easily and seamlessly integrated into one environment.

An alternative to local routing

The development of a router-based network often means a huge investment in time and money on network design and device configuration. HP AdvanceStack switches are plug-and-play devices; in most cases, they do not require any configuration at all. HP AdvanceStack switches offer a viable alternative to most of the segmentation needs currently fulfilled by local routers.



HP provides a broad range of switches to meet your networking needs.

HP AdvanceStack Switches and Bridges

Maximum uptime

HP AdvanceStack switches and bridges improve network availability by providing redundancy in the event of device or link failure. With proactive management provided by SNMP and EASE (Embedded Advanced Sampling Environment) agents, these devices ensure that maximum uptime is available for the network. All switches and bridges are backed by an industry-leading three-year onsite warranty and follow HP's tradition of excellent quality, service, and support.

Optimized network design

Switched environments, unlike those based on shared technologies, require careful design of the network topology to ensure that key nodes are placed at the right location. HP's solution allows simultaneous and continuous traffic monitoring on each segment. It provides a list of "top talkers" and communications links, so that you can move nodes from one segment to another to achieve optimum performance. This solution is based on the cost-effective HP EASE traffic sampling technology, which is included in all HP network manageable products.

Safe buy

HP AdvanceStack switches are designed to ensure seamless network evolution. They offer:

- full scalability, so that you can add connectivity as your network grows;
- a wide choice of technologies that allows you to upgrade your workgroups at your own pace;
- media flexibility for a variety of topologies.

Choosing the most suitable solution for your network

Today, Hewlett-Packard supports 100VG-AnyLAN, 100Base-T, FDDI, and Ethernet switching for building high-performance workgroups and interconnected workgroups. The combination of these complementary technologies allows Hewlett-Packard to offer a wide range of network solutions.

HP AdvanceStack Switches: At a Glance

- **HP J3125A AdvanceStack Switch 200**

Economical workgroup switch with fixed configuration for end-node connections. Includes 16 10Base-T ports and two high-speed 100VG-AnyLAN ports (for one 100VG connector). Designed for standalone networks or distributed workgroups in a larger network.



- **HP J3126A AdvanceStack Switch 100**

Same as HP J3125A, except includes 16 10Base-T ports and one high-speed 100Base-TX port.



- **HP J2980A 10/100 LAN Switch-16**

Segment switch for performance at the department level. Includes 16 10Base-T ports and two slots for additional high-speed 100VG-AnyLAN or 100Base-T connectivity. Ideal for connecting servers in the high-speed computer room and user workgroups.



- **HP J2981A 100VG Switch Module for LAN Switch-16**

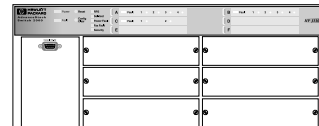
Slide-in module with two 100VG ports. Media connectivity through 100VG transceivers.

- **HP J2984A 100Base-T Switch Module for LAN Switch-16**

Slide-in module with one 100Base-TX port.

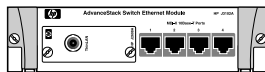
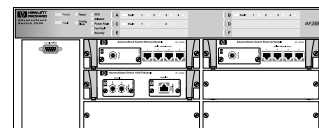
- **HP J3100A AdvanceStack Switch 2000**

Highly modular, high-performance switch for interconnecting workgroups in mid- to large-size networks. Its six-slot architecture provides a choice in port density, technology, and media, for a fully customized solution.



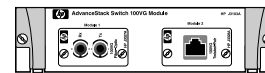
- **HP J3101A AdvanceStack Switch 2000 Bundle (base unit plus three add-on modules: two J3102A, one J3103A)**

Preconfigured Switch 2000 for mixed 10/100 Mbps environments. Includes eight 10Base-T and two 100VG ports as well as three slots for expandability (100VG transceivers are required and must be purchased separately).



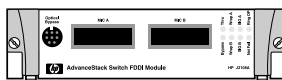
- **HP J3102A AdvanceStack Switch 2000 10Base-T Module**

Slide-in module with four RJ-45 ports for 10Base-T. One transceiver slot is available for different media connectivity requirements.



- **HP J3103A AdvanceStack Switch 2000 100VG Module**

Slide-in module with two 100VG-AnyLAN ports. Media connectivity through 100VG transceivers which must be purchased separately.



- **HP J3108A AdvanceStack Switch 2000 FDDI Module**

Slide-in module with one DAS or two SAS FDDI interfaces.

- **HP J3109A AdvanceStack Switch 2000 10Base-F Module**

Slide-in module with four fiber-optic ports for 10Base-F.

- **HP J3136A AdvanceStack Switch 2000 Redundant Power Supply**

Load-sharing redundant power supply provides a second power receptacle.

HP AdvanceStack Bridges: At a Glance

HP AdvanceStack Bridges

- **HP 28681A AdvanceStack Bridge LB**
Low-cost local bridge for uncomplicated networks of medium size.



- **HP 28673A AdvanceStack Bridge MB**
High-performance, local, spanning tree bridge for large, fault-tolerant networks.



- **HP 28674B AdvanceStack Bridge RB**
High-performance, spanning tree bridge for multisite networks.



HP AdvanceStack Switches: Comparative Features

Switches	HP J3125A Switch 200/HP J3126A Switch 100	HP J2980A 10/100 Switch-16	HP J3100A Switch 2000	HP J3101A Switch 2000 Bundle
Configuration:				
- Modularity	No	Partial	Full	Partial
- Configuration (factory-installed ports)	16 10BT ports, 2 100VG (Switch 200), 1 100BT (Switch 100)	16 10BT ports		8 10BT ports, 2 100VG ports
- Available expansion slots	0	2 slots	6 slots	3 slots
- Modules (optional)		2 100VG ports, 1 100BT port	4 10BT ports, 2 100VG ports, 1 FDDI port, 4 10BF ports	4 10BT ports, 2 100VG ports, 1 FDDI port, 4 10BF ports
- Connectivity: 10Base-T	RJ-45	RJ-45, 1 AUI (1 RJ-45 disabled)	RJ-45, 1 transceiver/module for BNC, Fiber, or AUI (1 RJ-45 disabled)	RJ-45, 1 transceiver/module for BNC, Fiber, or AUI (1 RJ-45 disabled)
100VG	RJ-45 (1 port uplink and 1 port downlink)	2 transceivers/module for RJ-45, Fiber, DB-9	2 transceivers/module for RJ-45, Fiber, DB-9	2 transceivers/module for RJ-45, Fiber, DB-9
100Base-T	RJ-45	RJ-45, UTP Cat. 5		
Performance:				
- Backplane speed	N/A	520 Mbps	1 Gbps	1 Gbps
- Latency	29 μ s	41 μ s	10 μ s*	10 μ s*
- Address table size	4000	10000	10000	10000
- Full duplex		•	•	•
- Port trunking			•	•
Advanced Features:				
- Spanning tree protocol	•	•	•	•
- Packet filtering		•	•	•
- Broadcast threshold			•	•
- Virtual LAN			•	•
Availability:				
- Hot swappable module			•	•
- Redundant power supply			•	•
- Redundant fan			•	•
Management:				
- LEDs	•	•	•	•
- RS-232 console port	•	•	•	•
- Telnet	•	•	•	•
- SNMP	IP	IP	IP/IPX	IP/IPX
- RMON			•	•
- EASE			•	•
- Password protection	•	•	•	•
- LAN analyzer support	•	•	•	•
- Rack space required	4.4 cm (1.75 in)	8.8 cm (3.5 in)	17.6 cm (7.0 in)	17.6 cm (7.0 in)
Warranty:	3 years (onsite)	3 years (onsite)	3 years (onsite)	3 years (onsite)

* Last bit in, first bit out for 64-byte packet size

AdvanceStack Switch Accessories (refer to Network Accessories data sheet for more details)

Description	HP J2980A 10/100 Switch-16	HP J3100A Switch 2000	HP J3101A Switch 2000 Bundle
10 Mbps transceivers (J2606A, J2607A, J2608A, J2609A)		•	•
100VG transceivers (J3027A, J3028A, J3030A)	•	•	•
Redundant Power Supply (J3136A)		•	•

HP J3100A AdvanceStack Switch 2000



HP AdvanceStack Switch 2000 is a modular, highly adaptable segment switch designed to increase network performance and provide better segmentation of networks. It is ideal for network managers looking to relieve congestion within department or backbone networks or to provide faster access to servers.

Highlights

- **Performance**

HP AdvanceStack Switch 2000 provides powerful segment switching solutions for networks with a wide range of requirements. It can be configured with any combination of 10-megabit or 100-megabit interfaces. This is made possible by two key architectural designs:

- a high-speed 1 Gbps bus, and
- modular 6-slot chassis design incorporating universal port architecture.

Universal port architecture allows any card to go into any slot, while the high-performance 1 Gbps bus supports scalable solutions up to 12 100 Mbps ports in a single box. This performance/flexibility combination lets you choose the technology that meets your requirements today and assures your ability to grow in the future.

- **Multiple configuration capability/flexibility**

HP AdvanceStack Switch 2000 currently supports: 10Base-T (J3102A), 10Base-F (J3109A), 100VG (J3103A),* and FDDI (J3108A), and in the future, 100Base-T and ATM. It supports full 10 Mbps or full 100 Mbps switching solutions and up to two FDDI connections.

It also offers the choice of media connectivity through the HP AdvanceStack 10 Mbps and 100 Mbps recessed transceivers.

HP J3101A AdvanceStack Switch 2000 Bundle* includes the base unit (J3100A), two 10Base-T modules (J3102A), and one 100VG module (J3103A); 100VG transceivers are required and must be purchased separately for the bundle.

- **Availability**

Since the LAN switching system is often at a central point in the network, a high degree of fault tolerance is necessary, especially in mission-critical environments. The HP AdvanceStack Switch 2000 offers a very high level of availability with built-in layers of redundancy. Interface cards are hot-swappable and accessible from the front. Heat sensing, variable-speed fans provide redundancy for cooling, and an optional load-sharing fully redundant power supply (J3136A) provides high availability.

- **Manageability**

HP has applied its expertise in network management to help network administrators tackle the problem of switch management. HP AdvanceStack Assistant for Windows provides real-time, network-wide traffic monitoring which helps to define the best switch placement and optimization by finding top-talking nodes on the network.

Pinpointing problems or potential problems to the node/user level is a simple three-step process:

First, find out *what* the problem is by checking the network-wide view provided by the five gauges which present the major health indicators of your network.

Second, after identifying the problem, AdvanceStack Assistant helps you to see *where* the problem is. LAN segments causing the problem are listed in descending order.

Third, AdvanceStack Assistant allows you to see *who* the cause of the problem is—the source node, the destination node, or the communicating pair of nodes. You can also get an end-to-end protocol decode for most protocols.

HP AdvanceStack Assistant for Windows is included with every HP J3100A AdvanceStack Switch 2000 base unit or bundle (J3101A). HP AdvanceStack Assistant for Windows runs on top of HP OpenView/Windows for true multivendor management.

- **Robust functionalities**

Although HP AdvanceStack Switch 2000 is a plug-and-play device, it also offers a wide range of additional functionalities to meet your network requirements: spanning tree protocol, broadcast throttling, Level 3 protocol filtering, port trunking, virtual LAN support, and priority queuing for 100VG.

The FDDI module (J3108A) is a one-port DAS module. It supports IP fragmentation, SMT 7.3, and a connector for an optional optical bypass.

- **Reliability**

HP AdvanceStack Switch 2000 is backed by a three-year onsite warranty.

** Note: Both the AdvanceStack Switch 2000 100VG module and the AdvanceStack Switch 2000 bundle require 100VG transceivers that must be purchased separately.*

HP AdvanceStack Switches: A Closer Look

HP J3125A AdvanceStack Switch 200



HP J3126A AdvanceStack Switch 100



HP AdvanceStack Switch 200 and Switch 100 are entry-level desktop switches designed to reduce network bottlenecks or bandwidth problems at the workgroup level.

Highlights

- **Cost-effectiveness**

With a factory-installed fixed configuration of 16 dedicated 10Base-T ports and two 100VG ports (for one 100VG connection) (Switch 200) or 16 10Base-T ports and one 100Base-TX port (Switch 100), HP AdvanceStack

Switch 200 and Switch 100 provide one of the lowest-cost solutions for workgroups, plus plug-and-play installation for ease of use.

- **Performance**

Using HP Switch 200 or Switch 100 in a workgroup or as a segment switch in the “top-of-stack” configuration, bottlenecks can be effectively identified and eliminated. Spanning tree protocol support allows you to build complete link redundancy from the backbone to workgroups in your network.

HP Switch 200 and Switch 100 offer full link-speed switching performance at 14880 pps per port. Designed primarily to maximize performance to the desktop, each port on the switches can also be connected to hubs instead of end nodes. They utilize the store-and-forward switching technology. They also support SNMP and are fully managed and monitored by HP AdvanceStack Assistant.

- **Reliability**

HP Switch 200 and Switch 100 include a three-year onsite warranty.

- **Server performance packs**

HP J3221A Server Performance Pack 100 includes HP J3126A Switch 100, HP J3171A 10/100TX PCI LAN Adapter, HP J2659H Interconnect Manager, and a cable.

HP J3220A Server Performance Pack 200 includes HP J3125A Switch 200, HP J3171A 10/100TX PCI LAN Adapter, HP J2659H Interconnect Manager, and a cable.

HP J2980A AdvanceStack 10/100 LAN Switch-16



HP AdvanceStack 10/100 LAN Switch-16 combines 10 Mbit and 100 Mbit technologies to provide a flexible solution to the challenges of client/server access and backbone congestion. It is ideal for integrating 10Base-T workgroups with 100VG or 100Base-TX high-speed servers or workgroups. It also provides connectivity between 100VG-AnyLAN and 100Base-T environments.

Highlights

- **Flexibility**

This semimodular switch provides 16 switched 10Base-T ports and

two slots for high-speed interface modules. When fully configured with two 100VG modules, the switch supports up to 20 segments. When fully configured with two 100Base-TX modules, it supports up to 18 segments.

When configured with one module of each, it provides 100Base-T to 100VG-AnyLAN connectivity. Port 1 is autoselectable between 10Base-T and AUI. Port 16 is switch-selectable for MDI/MDI-X, which allows the chaining of switches using straight-through cabling.

- **Performance**

AdvanceStack Switch-16 uses an advanced switching methodology that supports both cut-through and store-and-forward modes. It is also able to switch automatically from one mode to the other for maximum performance of the network.

It filters and forwards traffic at full link speed and supports half- and full-duplex transmission on 10Base-T and 100Base-TX ports. For additional performance and security, packet filters can be defined on a per-port basis. The switch also implements the spanning tree protocol.

- **Reliability**

HP AdvanceStack 10/100 LAN Switch-16 is backed by a three-year onsite warranty.

HP AdvanceStack Bridges: Comparative Features

Description	HP 28681A Bridge LB	HP 28673A Bridge MB	HP 28674B Bridge RB
Ports:			
- AUI/BNC	1	1	1
- AUI only	1	1	
- WAN			1*
Performance:	90% of media speed	Media speed	Media speed
Address Table Size:	256 entries	512 entries	512 entries
Operating Modes:	Learning	Learning Secure Bridge off	Learning Secure Bridge off
Management Capabilities:			
- Spanning tree protocol		•	•
- Wildcard filters		2	2
- LEDs	•	•	•
- RS-232 console port		•	•
- HP EASE traffic sampling		•	•
- SNMP/IP/IPX management		•	•
Rack Space Required:	4.4 cm 1.75 in	4.4 cm 1.75 in	4.4 cm 1.75 in
Warranty:	3 years (onsite)	3 years (onsite)	3 years (onsite)

* HP 28674B includes a WAN (synchronous) interface cable. Select the cable type by ordering the appropriate option: Option 001 for cable V.35, Option 002 for RS-232, Option 003 for X.21, and Option 004 for RS-422.

HP 28681A AdvanceStack Bridge LB

HP 28673A AdvanceStack Bridge MB

HP 28674B AdvanceStack Bridge RB



HP AdvanceStack bridges are two-port “learning” bridges that carry out the standard tasks assigned to bridges: improvement of network performance by eliminating unnecessary traffic, extension of a single LAN beyond its topology limits, and connection of separate LANs.

HP AdvanceStack bridges deliver high performance and manageability. In addition, they let you add security and fault tolerance in your network, as required.

Performance

- MB and RB bridges can filter and forward packets at “media speed.” This lets you divide a large LAN into smaller subnets without creating a bottleneck in the network.

The bridges also improve network capacity by creating two separate segments, isolating local traffic, and forwarding only packets that have destinations on the other side of the bridge.

The LB bridge operates at about 90% media speed and is appropriate for smaller networks with lower traffic load.

HP AdvanceStack bridges do not forward corrupt packets.

Fault Tolerance

- MB and RB bridges implement the IEEE 802.1 spanning tree protocol, allowing you to build networks with redundant paths. If a primary bridge fails, a backup bridge automatically takes over and ensures continued data transmission between LANs.

Security

- In secure mode, MB and RB bridges allow filtering by including or excluding traffic to and from certain stations. Security can be increased further by defining “wildcard” filters anywhere in the packet.

Management

- In most common network situations, HP AdvanceStack bridges operate as “plug-and-play” devices with no configuration needed.

A set of LEDs is located on the bridge panel for easy monitoring of the device and network status.

Each MB and RB bridge provides an RS-232 console port for out-of-band management, either through a direct connection or via modem. These console ports also allow the downloading of firmware updates.

HP AdvanceStack Assistant network management applications provide box and traffic management for MB and RB bridges.

HP AdvanceStack Switches and Bridges: Specifications and Standards

Product Specifications

Description	HP 28681A Bridge LB HP 28673A Bridge MB HP 28674B Bridge RB	HP J3125A Switch 200/J3126A Switch 100	HP J2980A 10/100 Switch-16	HP J3100A Switch 2000
Environmental Characteristics:				
- Operating Temperature: 0°C to 55°C 10°C to 40°C	•	•	•	•
- Relative Humidity: 15% to 95% @ 40°C noncondensing 8% to 80% @ 40°C	•	•	•	•
Physical Characteristics:				
- Dimensions	42.6 x 23.5 x 4.4 cm 16.8 x 9.3 x 1.7 in	44.5 x 30.0 x 7.6 cm 17.5 x 11.9 x 3.0 in	27.9 x 43.2 x 33.0 cm 11.0 x 17.0 x 13.0 in	44.0 x 29.0 x 17.6 cm 17.3 x 7.0 x 11.7 in
- Weight	2.7 kg 6.0 lb	4.3 kg 9.5 lb	9.0 kg 20.0 lb	9.0 kg 20.0 lb
Electrical Characteristics:				
- Voltage: 100-120 V ac; 200-240 V ac (Automatically adjust to any voltage)	•	•	•	•
- Current	0.5 A max; 0.4 A max	0.5 A max; 0.4 A max	0.5 A max; 0.4 A max	2.5 A
- Frequency: 50/60 Hz; 50/60 Hz	•	•	•	•

Standards

Description	HP 28681A Bridge LB HP 28673A Bridge MB HP 28674B Bridge RB	HP J3125A Switch 200	HP J2980A 10/100 Switch-16	HP J3100A/HP J3101A Switch 2000
Communications:				
- IEEE 802.3 Type 10Base-T	•	•	•	•
- IEEE 802.3 Type 10Base2	•			•
- IEEE 802.3 U 100Base-TX			•	
- IEEE 802.1 Spanning Tree Protocol	•	•	•	•
- IEEE 802.12 for 100VG		•	•	•
- CCITT V.35	Bridge RB only			
- FDDI*				•
Safety:				
- UL 1950	•	•	•	•
- CSA 950	•	•	•	•
- Verified to IEC 950/EN 60950	•	•	•	•
- Certified to NOM-019-SCFI-1993		•		
Emissions:				
- FCC Part 15 Class A	•	•	•	•
- CISPR-22	Class B for LB, Class A for MB/RB	Class A	Class A	Class A
- EN 55022	Class B	Class A	Class A	Class A
- VCCI	VCCI Class 1 for LB/MB, VCCI Class 2 for RB	VCCI Class 1	VCCI Class 1	VCCI Class 1
Immunity:				
- ESD: IEC 801-2 (1991) 3 kV CD, 8 kV AD	•	•	•	•
- ESD: 55024-2		•		
- Radiated Immunity: IEC 801-3 (1984) 3 V/m IEC 801-4 (1988) 0.5 kV signal line 1.0 kV power line	•	•	•	•
Management:				
- SNMP Version 1	•	•	•	•
- Standard MIBs supported	MIB II, Bridge	MIB II	MIB II, Bridge	MIB II, RMON I, Bridge, VG, VLAN, FDDI

*FDDI: IEEE 802.1H Translational Bridging, IP fragmentation FFC791, SNMP 7.3.

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Printed in U.S.A. 0996
5965-3093E



Product literature, frequently asked support questions, and other information are available on HP's Network Connectivity Home Page on the World Wide Web.

From your browser, type the URL:

http://www.hp.com/go/network_city