High function and high reliability you can afford

IBM 8245 10/100 Stackable Ethernet Hub

Highlights

- ***Includes four models to match your management needs and port requirements***
- ***Designed and tested to qualify as a high-reliability product***
- ***Provides remote management and configuration to keep initial installation simple***
- ***Connects the 10BASE-T and 100BASE-T backplanes with an optional bridge that also supplies either a 10/100BASE-TX or 100BASE-FX uplink port***
- ***Supports up to 6 hubs in a stack serving up to 144 port connections with up to 18 pairs of redundant ports***
- ***Features broadcast storm detection and prevention, factory configuration reset, and intrusion security protection***
- ***Provides auto-sensing, dual-speed, 10/100 Mbps on all ports***
- ***Supports redundant managed hubs and bridges in the same stack for high reliability***
- ***Usable with all standard UTP, STP, ScTP and FTP cables***
- ***Supports cascading to build larger networks via the MDI and MDI-X (uplink) ports***
- ***Connects to 10BASE5, 10BASE2 and fiber network segments via an optional AUI port***
- ***Provides port-by-port link/activity and partition indications, packet size and network utilization monitoring***
- ***Partitions ports automatically when excessive collisions or jabbering are detected***

The IBM 8245 10/100 Stackable Ethernet Hubs let you build robust shared-media Ethernet segments that are flexible enough to meet the needs of most environments, yet easy to manage. Each dual-speed port is auto-sensing, so it knows whether the adapter at the other end of the connection is operating at 10 Mbps or 100 Mbps and matches the data rate automatically. Each port also provides jabber sensing, polarity reversal, auto-partitioning and intrusion sensing to protect the stable operation of your network.



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The 8245 has separate backplanes for 10BASE-T and 100BASE-T operation. An optional bridge, functionally a 3-port switch to prevent bottlenecks, is used to connect the two network segments for the entire stack of up to six hubs and provide an uplink to 100BASE-TX or FX segments. So a single hub or stack not only supports operation at 10 and 100 Mbps simultaneously but can also join the two segments with a bridge to maximize the efficiency of the network.

Four models mix and match to your needs

The 8245 is available in four models that can be used in any combination to form a stack of up to six hubs serving up to 144 attaching devices. Two of the models are managed and the other two are manageable.

The 8245 Models 012 and 024 manageable hubs can be used either in conjunction with managed hubs or by themselves in a stack of up to six hubs serving 144 attaching devices for a network with minimal network management requirements. Port and hub status is provided by LEDs on the front of the hub.

The Models 112 and 124 are both managed hubs used to provide management to a stack of hubs. They provide 12 and 24 ports respectively. The managed hubs provide all the in-band, out-of-band, and Web management for a stack. The Models 112 and 124 support SNMP, four groups of RMON and a Web server accessible with any Java-based browser as well as BootP and SLIP for TFTP downloads. The managed hubs also perform broadcast storm monitoring and prevention. Node source tracking and matching combine with packet size distribution and network monitoring to provide additional information that you can use to improve your network's performance.

For high reliability, Release 2 of the configuration program (planned for availability as a free Web download in third quarter of 1998) will support redundant managed hubs in the same stack. The configuration program can also be used to assign redundant ports to ensure that critical devices continue to be available to the network should the primary port fail.

The managed hubs are equipped with an EIA-232 port for out-of-band communications to allow network administrators to configure the hub from a remote location as soon as the installer has hooked up the cables. For working in the vicinity of the machine, a state-of-the-art vacuum fluorescent display delivers stack status and management information instantaneously.

The optional bridge can be used with any model of the 8245 to connect the 10BASE-T and 100BASE-TX backplanes. The bridge is available in two versions: one provides a port of 100BASE-TX uplinks, the other a port for 10/100BASE-FX uplinks. In Release 2 of the configuration program, redundant bridging will be supported to increase further the availability of the 8245.

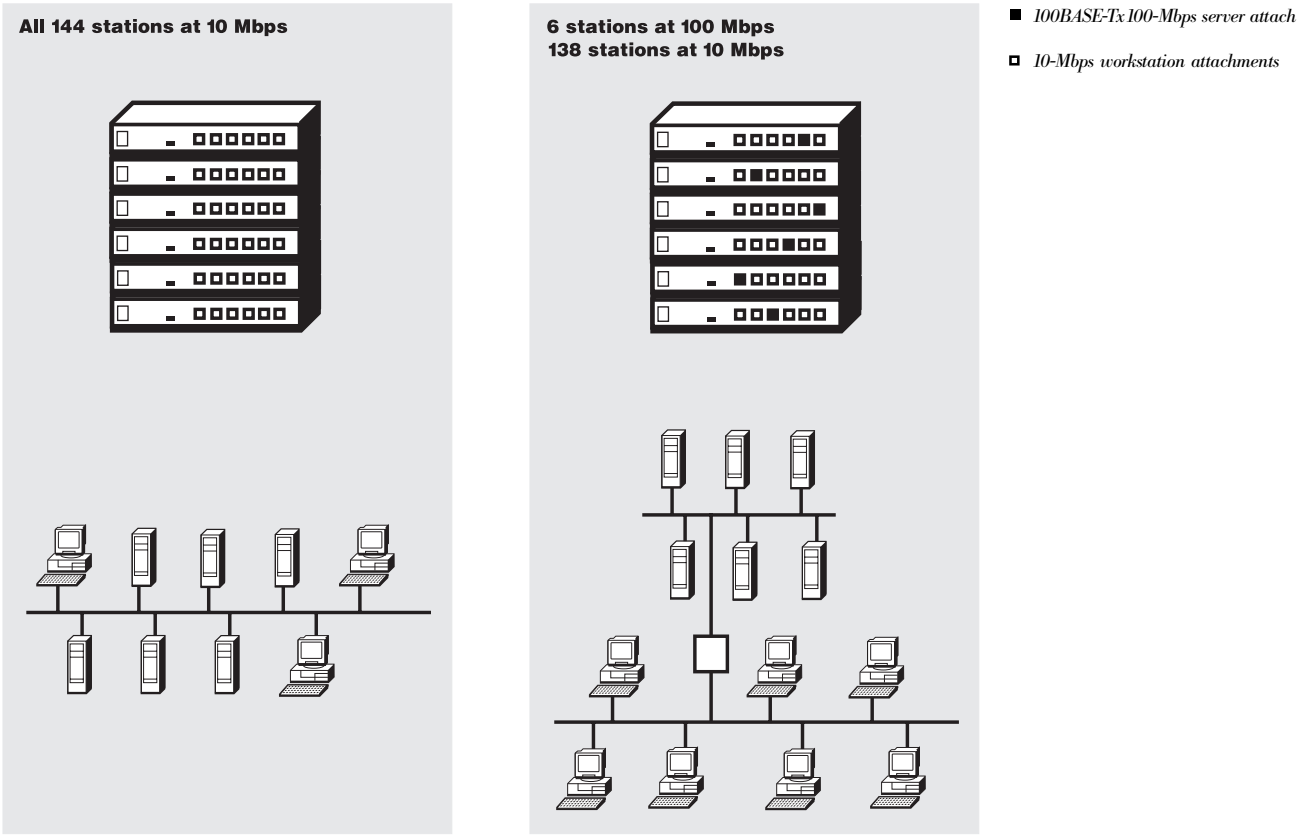
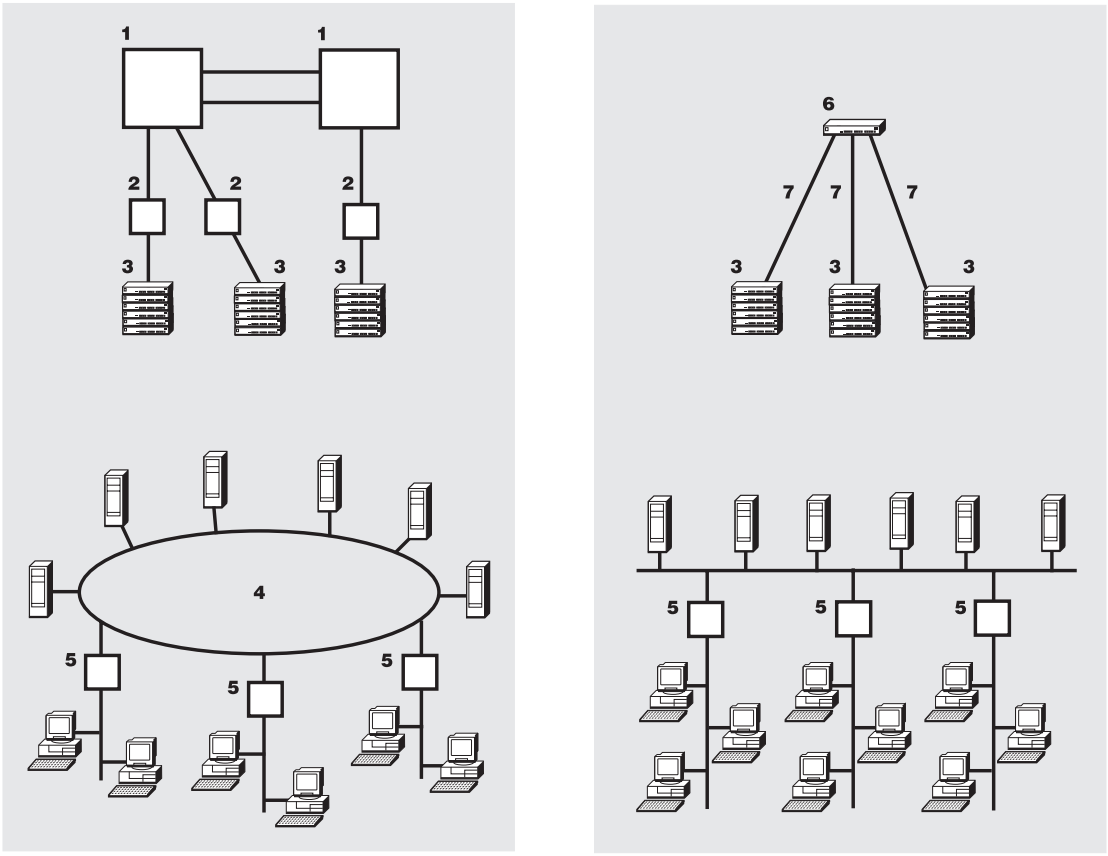


Figure 1



1. *FDDI Concentrators*
2. *Bridge or Router*
3. *10-Mbps stacks*
4. *FDDI*
5. *Bridge or Router*
6. *8245 model 100*
7. *100BASE-Tx*

Figure 2

Investment protection through flexibility

The 8245 family of stackable hubs allows you to maximize the value of your investment in existing equipment and infrastructure while providing better service to the users of your LANs. And you can do it all at a reasonable cost.

But let's take a look at what you won't be spending money on. You won't have to swap out your existing 10- or 100-Mbps Ethernet adapters; they are all compatible with the 8245. You won't have to change the building cabling that you run your existing 10BASE-T or Token-Ring networks on; the 8245 can handle it all. And you won't be spending money rewriting your existing Ethernet-compatible applications; the 8245 makes no special demands on your software.

What you will get is maximum flexibility in 10- and 100-Mbps shared-media LANs.

The typical network develops bottlenecks as contention for network resources increases. On a single-segment Ethernet LAN with a large number of stations, servers can become overloaded or, in some cases, collisions and retransmits begin to use significant bandwidth. As shown in Figure 1, placing all of the servers on a 100-Mbps segment in a single 8245 stack and bridging the 10-Mbps segment to the 100-Mbps segment will help eliminate server congestion and reduce contention. The bridge does not become the new bottleneck in this LAN because it is an efficient, low-latency 3-port switch.

Figure 2 illustrates a two-level, multisegment LAN made up entirely of 8245s. Until recently, such a topology would probably have employed FDDI as the backbone. But by using 100BASE-TX in FDDI's place protocol translations are avoided as are the high costs of FDDI hardware components. In this case, the workgroup-level hubs are all bridging to the 100-Mbps backbone provided by the 8245s that make up the campus backbone. You can address performance issues on individual segments by reducing the segment size or by increasing the data rate to 100 Mbps.

The 8245's high reliability and flexibility not only help it fit comfortably in your environment, they reduce the costs of network reconfiguration because they match so well to your existing environment.

Big-box features in a small package

In addition to supplying the traditional IBM values of reliability, high function and adherence to industry standards to ensure interoperability, 8245s bring a host of benefits to their users.

- Small Ethernet LANs can be built in a matter of minutes to serve immediate needs.
- No special environmental considerations apply—the 8245 is even quiet enough to be installed in office environments.
- No special crossover cables are required.
- Auto-ranging power supplies eliminate the need for multiple models for different countries.
- Options such as jabber control, auto-partitioning, auto-reconfiguring, redundant bridging and redundant managed hubs in a stack are available on the 8245s at one of the lowest costs per port in the industry.
- A full range of transmission media choices help speed installation and control the costs of moves, adds and changes.

Features	*Benefits*
Crossover ports	• Allows use of straight-through cables for all connections. No special crossover cables are required.
Automatic partitioning	• Automatically isolates a port from its segment when 32 consecutive collisions are detected. The port is reenabled with the reception of a valid data frame.
AUI port	• Allows for connection to 10BASE-2, 10BASE-5 and 10BASE-F Ethernets.
MDI and MDI-X ports	• Allows cascading of 8245s with straight-through cables.
Front-panel LEDs and vacuum fluorescent display (VFD)	• Provide box-level and port-level information for operational monitoring and troubleshooting.
Jabber lockup protection	• Jabbering ports are automatically partitioned to ensure the operation of the rest of the segment. The jabbering port is reenabled after it receives a valid data frame.
Automatic polarity-reversal correction	• Prevents failures caused by copper cable polarity reversals.

IBM 8245 10/100 Stackable Ethernet Hub at a glance

Models	012, 024—Manageable 112, 124—Managed
Total ports	012, 112—12 auto-sensing 10BASE-T or 100BASE-TX 024, 124—24 auto-sensing 10BASE-T or 100BASE-TX All Models—1 MDI and 1 MDI-X port Optional bridge module supplies 10/100 BASE-TX or 100BASE-FX uplink port
Physical Specifications	*All Models* Height: 64 mm (2.5 in.) Width: 437 mm (17.2 in.) Depth: 216 mm (8.5 in.) Weight: 3.6 kg (7.9 lb) - Models 012 and 024 Weight: 3.8 kg (8.4 lb) - Models 112 and 124
Power	*All Models* • The internal, auto-ranging power supply supports standard voltages throughout the world. The nominal input voltage and frequency ranges are 100 - 240 V ac and 50 - 60 Hz, respectively. Power dissipation (maximum) is 17.5 W (59.7 BTU/hour). • Power consumption in active mode: 26.7 W. • Power consumption in energy-saving mode: 25.3 W.
Operating environment	Operating temperature: 10° to 40° C (50° to 104° F) Storage temperature: -25° to 70° C (-13° to 158° F) Relative humidity: 8 to 80% non-condensing Maximum wet-bulb temperature: 27° C (84° F) Noise level 40 dB
Operating clearances	Front: Adequate space for viewing LEDs Sides: 50.8 mm (2.0 in.) Rear: 50.8 mm (2.0 in.)
Standards	Conforms to IEEE 802.3 10BASE-T and 802.3u standards and the following RFCs: RFC-1155 SIM for TCP/IP-based Internet RFC-1157 SNMP Protocol RFC-1212 Concise MIB Definitions RFC-1213 Standard MIB Definitions RFC-1215 A convention for defining traps for use with SNMP RFC-1516 Repeater MIB RFC-1757 RMON MIB RFC-793 TCP Protocol RFC-791 IP Protocol RFC-792, RFC-950 Subnets RFC-951 BootP Protocol RFC1533 DHCP Protocol RFC-826 ARP Protocol RFC-1350 TFTP Protocol RFC-1055 SLIP Protocol RFC-854 TELNET Protocol
Cabling supported	100-ohm unshielded twisted pair (UTP), 150-ohm shielded twisted pair (STP), 100-ohm screened twisted pair (ScTP) or foiled twisted pair (FTP) as specified in TIA/EIA/ANSI 568A or ISO IEC 11801.
Installation	Either tabletop or rack-mounted in a standard EIA 19-in. rack.

For more information

To find out more about the IBM 8245 10/100 Stackable Ethernet Hub and other high-performance IBM communications and networking products, contact your IBM representative or call IBM Direct at 1 800-IBM-CALL (1 800 426-2255). You can also obtain information from the IBM Networking Home Page at *www.networking.ibm.com*.

Copies of this and other related product specification sheets can be obtained from the IBM FAX information service by dialing 1 800 IBM-4FAX (1 800 426-4329) in the U.S. and Canada or by dialing 415 855-4329 outside the U.S. and Canada and requesting document number 9457.

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