Cost-effective solutions for large and small LAN environments

IBM 8237 Ethernet Stackable Hub

- **Provides scalable options and easy upgrades for cost-effective evolution**

- **Offers three models: Manageable Unit, Basic Managed Unit (SNMP) and Advanced Managed Unit (SNMP and RMON)**

- **Supports Advanced Management RMON feature for Model 003**

- **Offers optional expansion features: AUI/10BASE2 Media Expansion Port, 10BASE-FL/ FOIRL Media Expansion Port, 10BASE-T/100BASE-TX Fast Expansion Module and 100BASE-FX Fast Expansion Module**

The IBM 8237 Ethernet Stackable Hub offers infrastructure design flexibility for shared Ethernet environments. The 8237 is a simple, elegant and cost-effective solution to the bandwidth and management problem of today's Ethernet networks. It provides full industry-standard 10BASE-T Ethernet connectivity to end stations, servers and other compatible devices, and high-performance uplink connectivity to a Fast Ethernet network or establishment backbone.

Positioning and Benefits

The IBM 8237 Ethernet Stackable Hub provides 10-Mbps shared Ethernet connectivity with flexible port and management configurations to customize the capability of your network. The 8237 permits port densities of up to 170 ports in a stack. It also provides optional high-speed uplinks allowing the stack's aggregation capabilities to a Fast Ethernet switch (IBM 8271). The 8237 should be utilized in small and medium-sized networks requiring 10-Mbps connectivity to the desktop with management capabilities.

**Problem: Need for additional user connections and management capabilities.**

Environment: Shared Ethernet networks adding new users with a need for segmentation and network management.

1. *Server*

2. *10-Mbps unmanaged hub*

3. *Workstation*
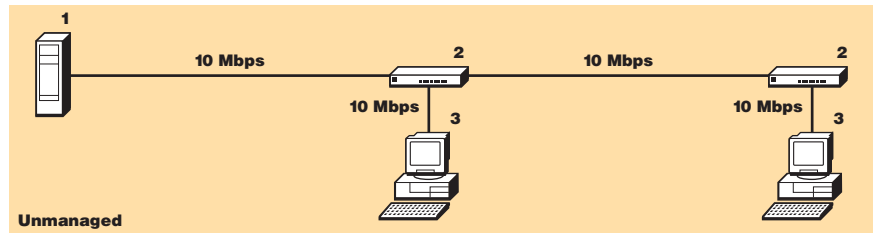
Solution: Build a stack or stacks of 8237s, providing additional port densities, segmentation, and management capabilities. Building stacks utilizing the inexpensive, manageable model 001 of the 8237 provides significant cost savings to customers as port densities increase. Combine the stacks of 8237s by aggregating them with the IBM 8271 10/100 MB switch by utilizing the Fast Ethernet uplinks of the 8237. In a small network, the Fast Ethernet uplinks of the 8237 can be used as high-speed server links.

1. *Workstation*

2. *8237 Model 002*

3. *10-Mbps unmanaged hub*

4. *8271 10/100 Switch*

5. *8237 Model 003*

6. *8237 Model 001*

7. *Server*
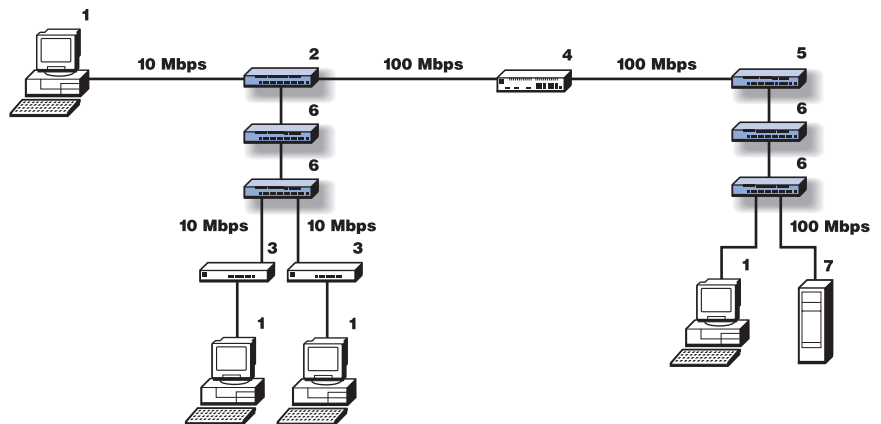
Benefits
- 10-Mbps shared connectivity providing network segmentation ability and management functions for small-to-medium-sized business environments.
- Stackable solutions providing greater port densities and significant cost savings.
- High-speed uplink capabilities to servers and backbones.
- Modular design for scalable and flexible growth.
- Significant network management capabilities.

Product Overview

IBM's 8237 Ethernet Stackable Hub is a family of 16-port 10BASE-T Stackable Ethernet repeaters and an optional expansion (uplink) port. The hubs are intended for a wide range of networking configurations and installations, from small workgroups that start out unmanaged but may need management in the future, to large, complex establishment LANs that need sophisticated connectivity, high reliability, bandwidth management and extensive network performance monitoring. EtherWatch collision, utilization, performance and port status indicators are provided to assist in problem determination and problem isolation for both managed and unmanaged environments.

Three models provide multiple choices of network management:

- Model 001 is a stackable 16-port 10BASE-T Ethernet repeater plus a network expansion/inter-LAN connectivity port. This hub is a manageable unit that can be managed by Model 002 or Model 003.

- Model 002 contains the same flexible port features of the Model 001 along with an SNMP management agent that provides extensive in-band and out-of-band management for itself or for a full 10-unit 8237 stack.

- Model 003 contains both an SNMP agent and an RMON agent. The RMON agent is capable of performing all 9 groups of RMON on one of the three backplane segments of an 8237 stack. And Model 003 contains the same flexible port features of Model 001 and the SNMP management agent that is provided in Model 002.

The three 8237 models can be mixed in any of the stack environments, providing for redundant management. And Model 002 and Model 003 provide extensive in-band and out-of-band management.

The 8237 can have a maximum of 10 hub units in a stack and can attach any one of three backplanes. Each 10BASE-T port provides intrusion and eavesdropping protection, automatic detection and correction of cabling polarity reversal, jabber protection and excessive collision protection. There can be 18 redundant port pairs anywhere in the 8237 stack. The 8237 conforms to the IEEE 802.3 10BASE-T standards, is interoperable with other 10BASE-T compatible products and provides optional, inter-LAN connectivity via field-installable Expansion Modules:

- AUI/10BASE-2 (BNC)

- 10BASE-FL/FOIRL (fiber)

- 10BASE-T/100BASE-TX (two-pair Category 5 wiring)

- 100BASE-FX (fiber)

The 16th port on the 8237 supports both MDI and MDI-X wiring configurations, allowing connection to other devices using standard, straight-through UTP cables.

The IBM 8237, 8242 and 8245 hub family offer a broad spectrum of hubs for enterprises of any size and bandwidth demand. The 8237 is designed to fit between the 8242 (a single-protocol, unmanaged, 8-port or 16-port 10BASE-T hub for very small networks) and the 8245 10/100 Stackable Hub (for large network infrastructures). The 8237 provides for unmanaged, SNMP-managed or RMON-managed stacks. The 8237 is the most reliable, expandable solution for small or medium-sized businesses.

Benefits

- Three separate, internal Ethernet backplanes (segments) enhance reliable network uptime.

- Up to 18 pairs of redundant links can be configured to connect the 8237 system to other devices. One link of the pair is active and the other serves as a backup link for improved availability of mission-critical devices.

- Multiple Model 002 or Model 003 management units can be installed in an 8237 stack. If the primary management unit must be taken out of service, the backup management unit automatically takes over with no loss of management function or management data.

- All models of the 8237 are hot-pluggable; they can be replaced individually without disrupting other hubs in the stack.

- Configuration data is stored in nonvolatile memory and is automatically restored after power disruption.

- The 8237 will partition (disable) any of the 10BASE-T ports when more than 32 consecutive collision-causing frames are transmitted from that port.

- The 8237 partitions a port when a node transmits continuously for 6.5 milliseconds. The port is automatically re-enabled when transmission from that port stops for 9.6 microseconds.

- All models have front-mounted visual displays to aid in problem determination and isolation, including statistics-monitoring functions at the port, segment and hub level.

- The Model 002 Basic Management Unit supports four open MIBs: SNMP MIB II (RFC 1213), the hub repeater MIB (RFC 1516), Ethernet MIB (RFC 1643) and the Novell® Hub MIB (RFC 1289).

- The Model 003 Advanced Management Unit contains, in addition to the SNMP management features of Model 002, a remote monitoring agent that supports all 9 groups of the RMON MIB.

- Centralized management of remote sites or branch offices is provided by the 8237's out-of-band support via SLIP.

- The 8237 provides intrusion protection at the port level and password protection at the management interface.

8237 Ethernet Stackable Hub Specifications

Physical specifications

Model	Width	Depth	Height	Weight
001	440 mm (17.3 in.)	290 mm (11.4 in.)	65 mm (2.6 in.)	4.8 kg (10.5 lb)
002	440 mm (17.3 in.)	290 mm (11.4 in.)	65 mm (2.6 in.)	4.8 kg (10.5 lb)
003	440 mm (17.3 in.)	290 mm (11.4 in.)	65 mm (2.6 in.)	5.1 kg (11.2 lb)

Operating environment

Operating temperature	Storage temperature	Relative humidity
10° to 40°C (50° to 104°F)	-25° to 70°C (-13° to 158°F)	80% maximum

Power

Model	Nominal input voltage	Frequency range	Power dissipation
001	100 to 240 V ac	50 to 60 Hz	25 watts (82 BTU/hour)
002	100 to 240 V ac	50 to 60 Hz	29 watts (97 BTU/hour)
003	100 to 240 V ac	50 to 60 Hz	40 watts (134 BTU/hour)

Protocols

Model	Management	Protocols
001	Unmanaged	N/A
002	Basic SNMP	• SNMP (RFC 1157) • Concise MIB (RFC 1212) • MIB II (RFC 1213) • Traps (RFC 1215) • Repeater MIB (RFC 1516) • Ethernet MIB (RFC 1643) • Telnet (RFC 854-859) • SNMP over IPX (RFC 1289) • Novell HMI Specifications
003	Advanced RMON (9 groups)	• Same as Model 002, plus RMON (RFC 1757)

Standards

Function	Electromagnetic compatibility	Safety	Quality
ANSI/IEEE Standard 802.3: 1996	• FCC Part 15, Subpart B, Class A • VCCI Class A ITE • Council Directive 89/36/EEC (EMC); EN55 022 (CE Mark) (CISPR 22:1993), Class A	• UL 1950, 2nd Edition • CE certified (European Community) • CSA certified (CSA 22.2 No. 950; Second Edition) • Council Directive 73/23/EEC (Low Voltage Directive); (IEC 950, 2nd Edition), including Amendments 1, 2 and 3 and specific country requirements	• EN 29001/ISO 9001

Supplementary Information

The following sales tools are available for the 8237:

• Specification sheet:
IBM 8237 Ethernet Stackable Hub, G224-4511

• Information on the IBM 8237 is available at:
www.networking.ibm.com/237/237prod.html