

## Why buy from IBM?

- *MSS RouteSwitch Client and Peer*  
Alleviates performance delays that can occur in router-based networks by setting up an end-to-end Layer 2 connection for IP traffic.
- *Alert on LAN™*  
Enables a system to communicate its status to a Network Manager even when powered off.
- *Wake on LAN®*  
Supports remote, unattended power on for software maintenance or upgrades.
- *OnNow is the Microsoft® version of Wake on LAN.*
- *Software Configuration*  
Adapters are software configurable and Plug and Play enabled.
- *LEDs*  
Adapters have external LEDs for adapter and ring status at a glance. Most competitors do not offer this feature.
- *Auto ring-speed detection*  
Adapters automatically set the correct ring speed.
- *Auto media-select*  
Media sensing eliminates need to specify media type.
- *LANAID*  
Automates installation of NetBIOS, 802.2, TCP/IP, IPX/SPX, Novell Client and DLS. LANAID is an IBM exclusive.
- *IBM LAN client*  
Reduces conventional and upper memory requirements in DOS/Windows® environments to as little as 2 KB.
- *Ring speed listen*  
Adapters verify correct ring-speed selection, eliminating accidental beaconing conditions and ring downtime
- *Dedicated Token-Ring (DTR) doubles throughput to 32 Mbps.*
- *UTP/STP*  
Adapters support both unshielded twisted pair (UTP) and shielded twisted pair (STP) cables.
- *LAN Support Program (LSP)*  
Support for 802.2 and NetBIOS protocols included at no extra charge.
- *Remote Program Load (RPL) and DHCP provided at no additional cost.*
- *Symmetric Multiprocessing System (SMP)*  
Support for servers using multiple processors.
- *Desktop Management Interface (DMI)*  
Provides a standard framework for managing information provided by the components within any PC.
- *Redundant NIC*  
Provides multiple, fault-tolerant connections to a server.
- *Lifetime warranty*  
For as long as the original customer owns the adapter. IBM also offers a 30-day, money-back guarantee with no questions asked.
- *ISO 9000 certification*  
Developed in an ISO 9000-registered laboratory.
- *Low cost*  
Industry-leading token-ring adapters at very competitive prices.



## At a glance

(See “Reference” section for product availability)

Adapter	Media	Bus Type
High-Speed 100/16/4 Token-Ring PCI Management Adapter	UTP/STP	PCI
16/4 Token-Ring PCI Management Adapter	UTP/STP	PCI
16/4 Token-Ring PCI Adapter 2 with Wake on LAN	UTP/STP	PCI
16/4 Token-Ring Low Profile PCI Management Adapter	UTP/STP	Low Profile
16/4 Token-Ring CardBus Adapter	UTP/STP	CardBus
Turbo 16/4 Token-Ring ISA Adapter	UTP/STP	ISA
Turbo 16/4 Token-Ring PC Card 2	UTP/STP	PCMCIA

Hub	Model	Stack	Media
8226	001	No	UTP/STP, FTP
8228	001	No	UTP/STP, FTP
8230	xx3	Yes	UTP/STP, FTP
8230	04x	No	UTP/STP, FTP
8239	002	Yes—up to 8	UTP/STP, FTP

Switch	Model	Token-ring Media
8270	600	UTP/STP, MM fiber
8270	800	UTP/STP, MM fiber





Transfer	Client	Server
Bus master	Yes	Yes
Bus master	Yes	Yes
Bus master	Yes	Yes
Bus master	Yes	Yes
Bus master	Yes	Yes
Bus master	Yes	Yes
SRAM	Yes	Yes

Ports	Expansion	Management
8	Ring-In/Ring-Out Splitter	No
8	Ring-In/Ring-Out	No
2-80	20-port LANs, 2-, 3-, 4-port LIUs, Ring-In/Ring-Out	CMOL, SNMP, RMON
16	Ring-In/Ring-Out	CMOL, SNMP, RMON
16	Optional 16-port feature	Via Terminal Interface or Model 001

Ports	Uplink	Management
6 UFC, 24 UTP/STP, 12 fiber	155-Mbps ATM fiber	SNMP
8 UFC, 30 UTP/STP, 16 fiber	155-Mbps ATM fiber	SNMP

# IBM 16/4 Token-Ring PCI Adapter 2 with Wake on LAN

## Highlights

Industry's first token-ring adapter to offer IBM/Intel Alert on LAN™ technology.

- Automatic speed adjustment and automatic support for DTR (full duplex).
- Limited lifetime warranty.

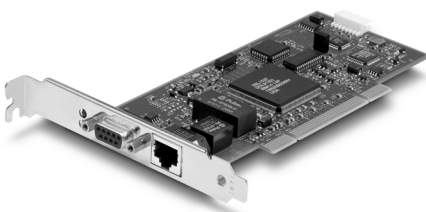
## Features and Benefits

- Offers IBM's legacy Wake on LAN® technology.
- Conforms to the Microsoft® OnNow specification.
- Provides unparalleled manageability with its innovative Alert on LAN technology.
- Allows two-way communication between network management applications and the adapter.
- Able to "wake up" the adapter and inform the manager of changes to the status of the system even when the system is powered off.
- Provides notification when a system is tampered with or when it is experiencing a problem.
- Allows network administrators to manage their PCs in addition to their networks.

## Key Selling Points

Recommended for your token-ring network if you are concerned about the Total Cost of Ownership and need the best available management features for your client and server machines.

Please refer to the section "Why Buy from IBM" on page C-1.



16/4 Token-Ring PCI Adapter 2 with Wake on LAN

# IBM 16/4 Token-Ring Low Profile PCI Management Adapter

## Highlights

Provides advanced functions for PC system management with support for major operating environments and industry standards.

## Features and Benefits

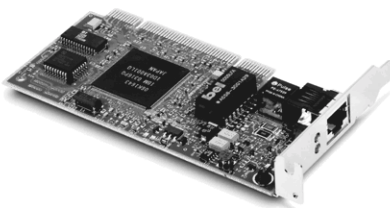
- Support for Wake on LAN®, PXE 2.0-compliant remote boot, and remote unattended installation.
- Includes Tivoli® Management Agent and supports SNMP and DMI 2.0 instrumentation.
- Supports PCI Hot Plug and redundant network interface card (NIC) Quick Failover for Novell NetWare and Windows NT® 4.0 servers.
- Simple Plug and Play installation
- New easy-to-use Windows® software-based troubleshooting utility eases problem determination.
- Backwards-compatibility to older adapters facilitates a smooth migration to the new token-ring cards.
- Conforms to the PCI 2.2 Bus Standard and IEEE 802.5 Token-Ring Standard.

- Supported in selected operating environments including Microsoft® Windows 2000, Windows NT 4.0 and Windows 98 SE.
- Designed for use in IBM's new low-profile desktop systems, allowing proven token-ring connectivity for these new systems.
- Limited lifetime warranty.

## Key Selling Points

Fifth generation of IBM's industry-leading token-ring chip technology, offering outstanding performance, lower power utilization, and proven reliability.

Please refer to the section "Why Buy from IBM" on page C-1.



16/4 Token-Ring Low Profile PCI Management Adapter



# IBM High-Speed 100/16/4 Token-Ring PCI Management Adapter

## Highlights

Is based on IBM's latest chip technology and offers an unmatched combination of features and value for token-ring customers.

## Features and Benefits

- Offers support for Wake on LAN®, PXE 2.0-compliant remote boot, and remote unattended installation.
- Conforms to the PCI 2.2 Bus Standard and IEEE 802.5 Token-Ring Standard.
- Supports PCI Hot Plug and redundant network interface card (NIC) Quick Failover for Novell NetWare and Windows NT® 4.0 servers.
- Includes Tivoli® Management Agent and supports SNMP and DMI 2.0 instrumentation.
- Designed to Microsoft® PC99 logo specifications, has received the Novell certification and complies with the Wired for Management 2.0 specifications.
- Uses fifth generation of IBM's industry-leading token-ring chip technology.

- Designed to enable more efficient management of large networked PC installations.
- Developed and tested to work in IBM and non-IBM desktop and server PC systems.
- Backwards-compatibility to older adapters facilitate a smooth migration to the new token-ring cards.
- Simple Plug and Play installation
- New easy-to-use Windows® software-based troubleshooting utility eases problem determination.
- Provides a common driver that can be deployed across desktop, server and mobile platforms.
- Limited lifetime warranty.

## Key Selling Points

Recommended for desktop and server systems for medium-sized and large enterprise customers who require a premier token-ring attachment to mission-critical networks.

Please refer to the section "Why Buy from IBM" on page C-1.



# IBM 16/4 Token-Ring CardBus Adapter

## Highlights

Offers blazing CardBus performance for mobile PC users on token-ring networks.

## Features and Benefits

- 32-bit CardBus performance allows full access to token-ring bandwidth.
- Ships with Tivoli® Management Agent and supports SNMP management and DMI 2.0 instrumentation, enabling system manageability with the leading applications
- Enables higher throughput than on older cards with a 16-bit PCMCIA interface.
- Easy to install with Plug and Play configurations.
- Supports the latest versions of all major operating environments, including Microsoft® Windows® 2000, Windows NT® 4.0, Windows 95 and 98, Novell NetWare Client for Windows 95/98 and Windows NT 4.0, and OS/2®.
- Operates with the latest IBM Token-Ring PCI adapters, enabling a common driver to be deployed across desktop, server and mobile platforms.

- Designed for low power consumption, enabling extended battery life when the cable is disconnected from the token-ring card.
- Designed to Microsoft PC 99 logo specifications and is Novell NetWare certified.
- Complies with CardBus and IEEE 802.5 token-ring specifications.
- Limited lifetime warranty.

## Key Selling Points

Offers an outstanding combination of performance, low power consumption and leading manageability features that enable low efficient management of large PC installations.

Please refer to the section “Why Buy from IBM” on page C-1.



16/4 Token-Ring CardBus Adapter



# IBM 16/4 Token-Ring PCI Management Adapter

## Highlights

Drives down the total cost of system and network ownership while preserving the customer's investment in proven token-ring technology.

## Features and Benefits

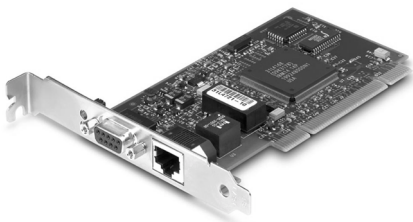
- Supports Wake on LAN®, PXE 2.0 compliant remote boot and remote unattended installation.
- Includes Tivoli® Management Agent, SNMP and DMI 2.0 instrumentation.
- Conforms to the PCI 2.2 Bus Standard and IEEE 802.5 Token-Ring Standard.
- Offers support for PCI hot plug and redundant network interface card (NIC) Quick Failover.
- Fully tested for backwards-compatibility with previous adapters
- Developed and tested to work in IBM and non-IBM desktop and server PC systems.
- Uses fifth generation of IBM's industry-leading token-ring chip technology
- Simple Plug and Play installation
- New easy-to-use Windows®-based diagnostic utility eases problem determination.

- Supports the latest versions of all major operating environments, including Microsoft® Windows 2000, Windows NT® 4.0, Windows 95 and 98, Novell NetWare and OS/2®.
- Operates with the latest IBM Token-Ring PCI adapters, enabling a common driver to be deployed across desktop, server and mobile platforms.
- Designed to enable more efficient management of large PC environments.
- Designed to Microsoft PC 99 logo specification, is Novell NetWare certified and complies with the Wired for Management 2.0 specifications.
- Limited lifetime warranty.

## Key Selling Points

Is based on IBM's latest chip technology and offers an unmatched combination of features, performance and value for token-ring customers.

Please refer to the section "Why Buy from IBM" on page C-1.



16/4 Token-Ring PCI Management Adapter



# IBM Turbo 16/4 Token-Ring PC Card 2

## Highlights

Updated version of today's #1 selling adapter for notebook PCs.

## Features and Benefits

- Offers the utmost in manageability and is both Tivoli- and LCCM-ready.
- Includes SNMP and DMI management agents.
- Contains the latest device drivers such as Windows® 98, Windows NT® 4.0, NetWare 5.0, PC DOS 2000 and Windows 2000.
- Fully tested for forward- and backwards compatibility with previous Turbo Card and device drivers.
- Designed to Microsoft® PC99 logo specifications.
- Automatic ring-speed detection and selection.
- Includes RJ-45 connector and balun.
- Ready for UTP or STP installation.
- Ships with Tivoli® Management Agents for full enterprise management capability.

- LCCM compliance allows users to lower their Total Cost of Ownership managing laptop installations in their networks.
- Easy to install with Plug and Play configuration in any PCMCIA and CardBus Type II or III slot.
- Full-duplex operation at either 16 Mbps or 4 Mbps over UTP or STP cabling.

## Key Selling Points

High performance, rugged design and zero power consumption when not connected make it an excellent choice for road warriors who need LAN connections when they are not in the office.

Please refer to the section "Why Buy from IBM" on page C-1.



*Turbo 16/4 Token-Ring PC Card 2*



# IBM Turbo 16/4 Token-Ring ISA Adapter

## Highlights

- Operates at either 16 or 4 Mbps over UTP or STP media without requiring user selection.
- Support of eight interrupt levels and 768 I/O address choices.

## Features and Benefits

### Lower Total Cost of Ownership:

- Fully compatible with industry standards and all key equipment, applications and servers.
- Easy to install and use, with full Plug and Play support and no switches to set.
- Collects an extensive set of adapter statistics and supports both SNMP and DMI management.
- External MAC address labels and LEDs show addressing and status at a glance.
- Limited lifetime warranty.

### Consistently high performance:

- Performance and CPU utilization exceeds all other adapters in its class.
- Automatically recognizes and configures for full-duplex switching.

- RouteSwitch Client alleviates traffic delays in conjunction with the MSS.

### Works with your network, hardware, and software:

- Support for leading network and operating systems.
- Supports PCs with multiple processors, unlike adapters from other companies.
- Automatic ring-speed adjustment and automatic support for DTR (full duplex).

### Key Selling Points

Please refer to the section "Why Buy from IBM" on page C-1.



*Turbo 16/4 Token-Ring ISA Adapter*

# IBM 8226 Token-Ring RJ-45 Connection Model 001 Multistation Access Unit

## Highlights

Flexible connection options for stand-alone rings or hub connections

## Features and Benefits

### Large network features:

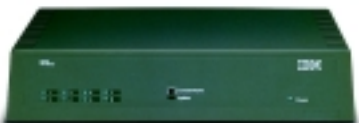
- Provides low-cost twisted-pair wiring and RJ-45
- Attachments for up to 80 devices in a single ring, using Ring-In/Ring-Out connectors on up to ten 8226s
- Features a splitter function, using a single port to connect up to eight 8226s
- Automatically configures the token-ring network when devices are added or removed
- Fully interoperable with products that comply with IEEE 802.5 standards

### Small network simplicity:

- Installation as simple as plugging in the cables.
- Compact design is convenient for tabletop, shelf, rack, or wall mounting.
- Auto-ranging power supply automatically adjusts to the correct voltage.
- Status LEDs and ports are located on the front panel for stacking and easy accessibility.
- Internal power supply eliminates bulky external transformers.

### Key Selling Points

- The simplest way to build a token-ring network using UTP, STP, or FTP connectors.
- Self-contained—no bulky external transformer.
- Readily accessible ports and status indicators.



IBM 8226 Token-Ring RJ-45 Connection  
Model 001 Multistation Access Unit



# IBM 8228 Multistation Access Unit

## Highlights

- Supports STP and UTP cabling
- Offers connections for up to eight devices
- Supports interconnection with other hubs
- Offers flexible mounting options
- Provides eight token-ring ports
- Offers RI/RO ports

## Key Selling Points

- Ease of use
- Flexible mounting options
- Fits in a standard wiring closet

## Features and Benefits

### Growth options

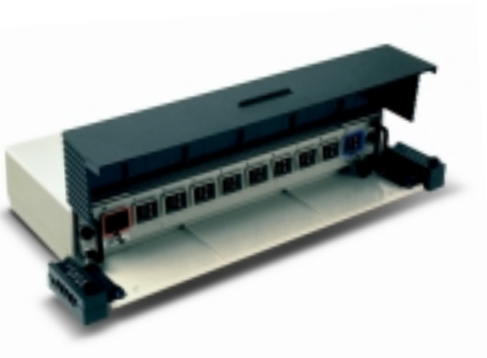
- Up to thirty-two 8228s can be joined together using the RI/RO ports.

### Ease of use

- Devices are simply plugged in to form a network. The 8228 will detect the presence of a signal for each of the eight connections and will configure the ring.

### Space-saving

- Fits in a 19-inch rack or on a shelf.



IBM 8228 Multistation Access Unit

# IBM 8230 Token-Ring Controlled Access Unit

## Highlights

### Family of intelligent token-ring hubs available in two models:

- Model 013—standalone concentrator or ring-attached hub with base unit and expansion units (LIUs and LAMs) connecting up to 80 devices in 2-, 3-, or 4-port increments
- Model 213—designed for UTP connections and more than 100 m (328 ft) between hubs and attaching devices

## Features and Benefits

### Industry-leading granularity and modularity:

- Mix and match media support .
- Plug-in Lobe Insertion Units (LIUs) grow networks in 2, 3 or 4 port increments.
- Lobe Attachment Modules (LAMs) extend base unit connectivity.
- Dual Ring Redundancy feature automatically recovers from breaks in the ring media.
- Active ports for reliable connections over long distances, or passive ports where active ports are not required.
- Ring-In/Ring-Out modules connect workgroups backbone rings with either copper or fiber.

- Fully interoperable with products that comply with IEEE 802.5 standards.

### Built-in protection against common failures:

- Failing ring segments are automatically disconnected.
- Automatic speed detect assures correct speed attachment speed without operator intervention.

### Extensive management for low-cost operation:

SNMP-based (including RMON) and OSI-based (CMOL) graphical management applications.

## Key Selling Points

- Proven, best-of-breed flexibility and reliability
- Choice of active ports for reliable long distance links or lower-cost passive ports for shorter distances
- Software upgradable models



IBM 8230 Token-Ring Controlled Access Unit  
Models 13 and 213



# IBM 8239 Token-Ring Stackable Hub

## Highlights

- Offers two models allowing you a choice of device and network management
- Provides 16 ports on each hub, plus a slot for an additional 16 ports when you need them
- Allows up to eight hubs in a single stack—all in one place or in a number of locations
- Enables stacks to be segmented, from 1 to 8 LAN segments per stack
- Works well in a variety of SNMP-based network management products from IBM and other vendors
- Uses RMON and RMON2 in the Model 001 to provide analysis and trending for superior network management, plus beacon recovery and address-to-port mapping
- Provides event-driven token-ring fault isolation through token-ring media management
- Integrates with non-8239 token-ring hubs and concentrators using copper or fiber RI/RO connections (Model 001 only)
- Supports fanout devices, such as the IBM 8228 or 8226, to allow a port to serve up to eight attaching devices over a single cable
- Fits well in small offices and large enterprises—wherever cost-effective, well-managed token-ring access is required

## Features and Benefits

- Seamless fit into your existing token-ring products with IBM technology
- Distributed management to reduce the risk of a single point of failure
- IEEE 802.5 compliant
- Modular design

## Key Selling Points

- IBM technology ensures that the 8239 will fit seamlessly into your existing token-ring networks and provide the most effective features in the field.
- Two models enable you to choose the amount of network and device management you want and to mix-and-match within a stack to distribute network and device management among the Model 001s and 002s in the stack.
- IEEE 802.5 compliance means that your 8239 will work effectively with all other 802.5-compliant components from IBM or other vendors.
- Modular design allows you to purchase ports in increments of 16, allowing you to buy only what you need.



IBM 8239 Token-Ring Stackable Hub

# IBM 8270 Nways LAN Switch Family

## Highlights

- Cost-effective solution to token-ring LAN performance requirements
- Two chassis-based workgroup token-ring switches with unique flexibility
  - Model 600—fully configurable switch with slots for six Universal Feature Cards (UFCs)
  - Model 800—fully configurable switch with slots for eight Universal Feature Cards (UFCs)
- Redundant power supply option
- UFCs for flexibility and growth:
  - 4-port UTP or STP
  - 2-port fiber
  - 1-port 155-Mbps ATM (MMF) uplinks
  - SMF or MMF MSS Client for Layer 3 switching over an ATM backbone
  - MSS Domain Client for Layer 3 Switching over token-ring networks

## Features and Benefits

### Supports full-duplex communication with LAN stations

### Support that exactly matches your needs:

- Completely configurable token-ring LAN switch connecting up to 30 shared or dedicated segments with up to 1700 MAC addresses per port or 10 000 per switch



IBM 8270 Nways® LAN Switch Model 800

### Intelligent controls for maximum network performance:

- Advanced Layer 3 switching over either token-ring or ATM networks.
- Award-winning, advanced features like auto-sensing and auto-configuration, source-route switching and bridging, and TokenPipe for single or multiple links between switches.
- MSS Domain Client features advanced VLAN support and Layer 3 switching.

### High availability and remote management for mission-critical networks:

- The IBM 8270 Model 800 provides redundant cooling and optional, redundant power supply for high available networks. Power supplies are load-sharing and hot-pluggable.
- Graphical network management on a wide range of platforms using SNMP, LNM and RMON management with in-band or out-of-band access.
- Innovative packaging allowing configuration and testing without unpacking the 8270 for central-site configuration of field-installed units.

### Key Selling Points

- Most comprehensive function in the industry, using a building block approach for flexibility and simplicity
- Solution for all configurations—desktop to wide area—at an excellent price per port
- Lowest price entry configuration—as few as four UTP/STP ports
- High-density fiber connectivity—as many as 16 fiber ports



IBM 8270 Nways LAN Switch Model 600



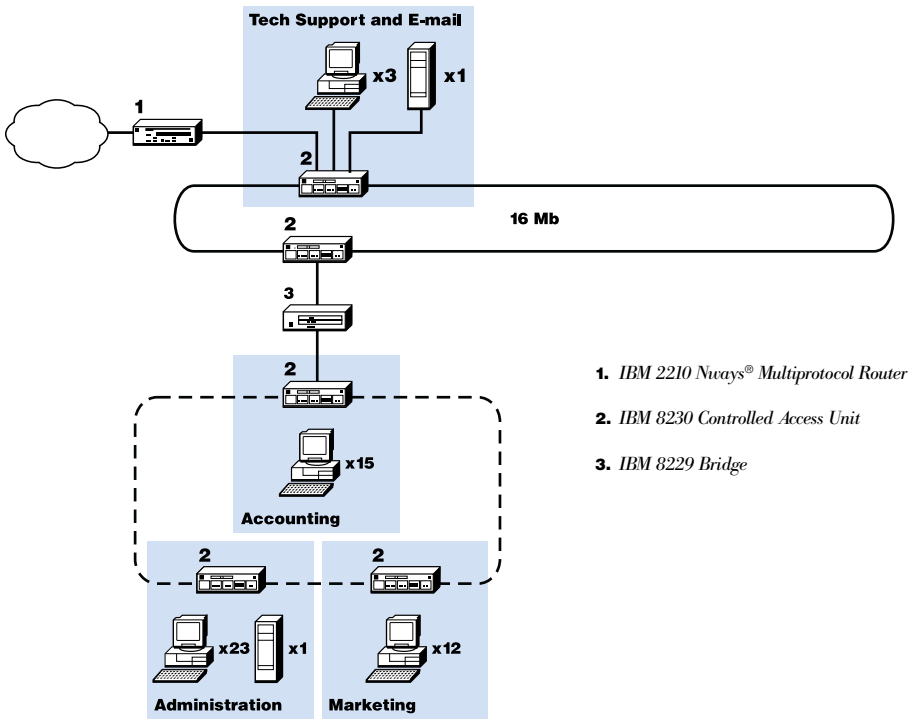
# Token-Ring Solutions from IBM

## Problem

A token-ring workgroup is adding applications and Internet access. The IT manager wants to ensure that there will be no bottlenecks caused by the increased traffic.

## Current environment

Large applications and Internet access are causing some slow-downs in network performance. The slow-downs occur sporadically, indicating network bottlenecks. IT management wants to eliminate these bottlenecks but does not wish to change network topology or incur significant costs.







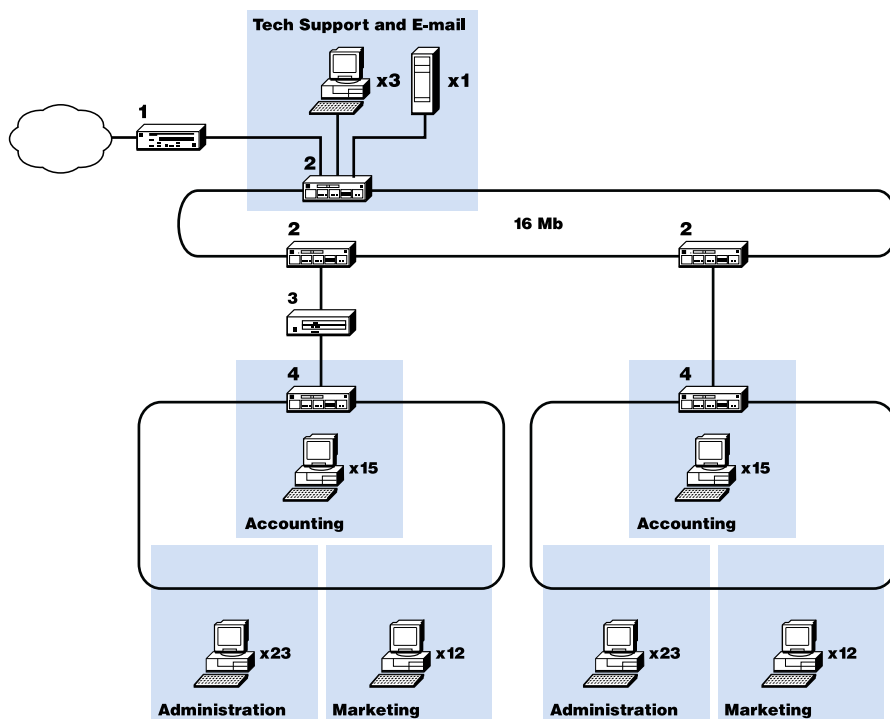
**Solution**

To eliminate bandwidth concerns, the older hubs are replaced with IBM 8239 hubs. The 8239 will segregate the LAN traffic by department or location. Each hub is recognized as a separate LAN in the stack. A single LAN can be segmented into multiple LANs while maintaining stack management of all the hubs that make up the stack.

A primary building block of shared LANs, manageable hubs are easy to deploy and can be used as stand-alone hubs or as expansion hubs to increase the number of device attachments in the stack. The older hubs may be reused in another part of the LAN.

**Benefits**

- Low-cost uptime “insurance”
- Protects original hardware investment



1. IBM 2210 Nways Multiprotocol Router
2. IBM 8230 Controlled Access Unit
3. IBM 8229 Bridge
4. IBM 8239 Token-Ring Stackable Hub

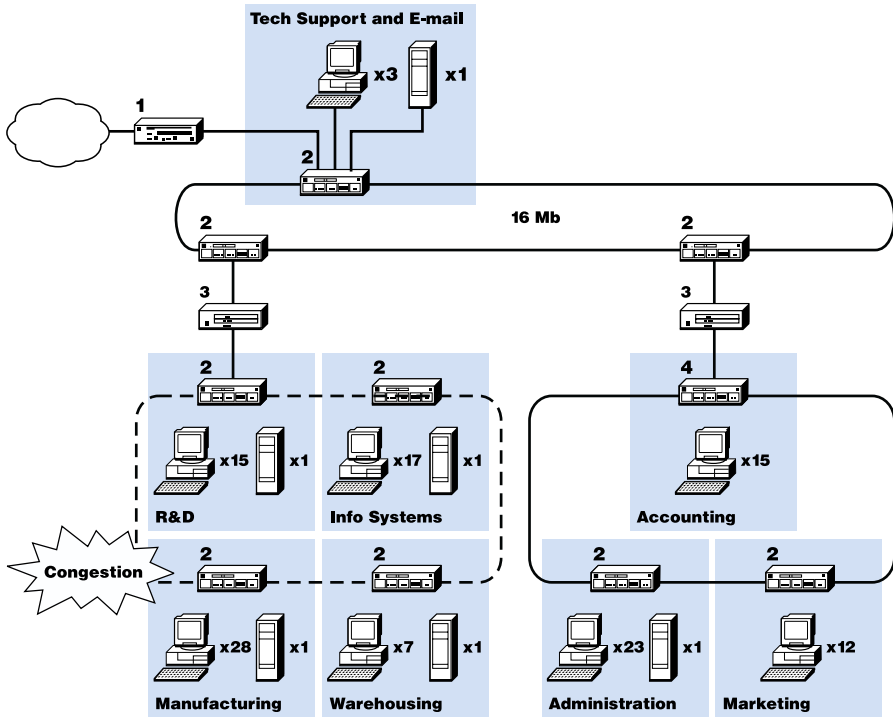
# Token-Ring Solutions from IBM

**Problem**

The token-ring LAN at company headquarters is finally beginning to show signs of congestion and overloading.

**Current environment**

The headquarters' token-ring network has held up during sustained growth for many years, but now shows signs of overloading. The impact of recent acquisitions, exciting new Internet home banking applications, e-mail, and new intranet financial service applications have pushed the network well beyond its original design parameters.



1. IBM 2210 Nuays Multiprotocol Router
2. IBM 8230 Controlled Access Unit
3. IBM 8229 Bridge
4. IBM 8239 Token-Ring Stackable Hub



**Solution**

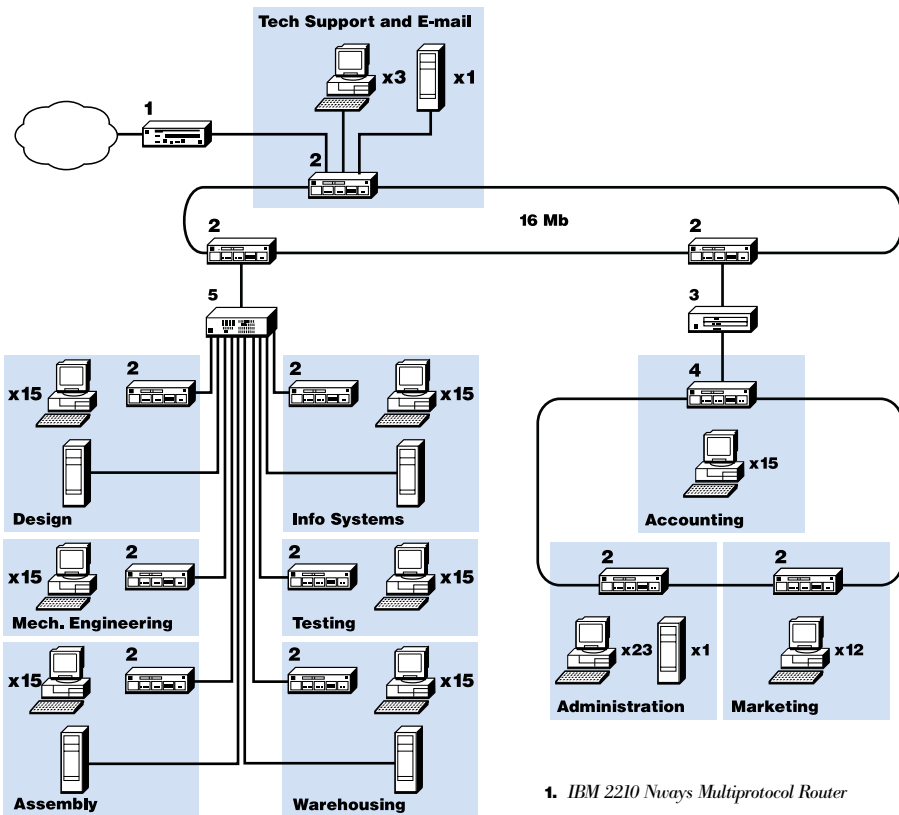
To solve its problems, the company deploys IBM 8270 switches. Deploying switches allows the company to segment its network to reduce loads on individual segments without affecting applications or changing workstations or the underlying network infrastructure.

Switches offer two advantages. They segment the network into smaller, independent sections, and they allow two-way, full-duplex communication. The new configuration, implemented without changing cabling, adapters, or applications, delivers up to eight times the throughput of the previous configuration, with corresponding decreases in response time.

Deploying switches gives each user more bandwidth. Reducing the number of bridges required further reduces network complexity and cost.

**Benefits**

- Provides immediate, low-cost, low-impact solution
- Enables new applications and provides a foundation for future growth



1. IBM 2210 Nways Multiprotocol Router
2. IBM 8230 Controlled Access Unit
3. IBM 8229 Bridge
4. IBM 8239 Token-Ring Stackable Hub
5. IBM 8270 LAN Switch Model 600

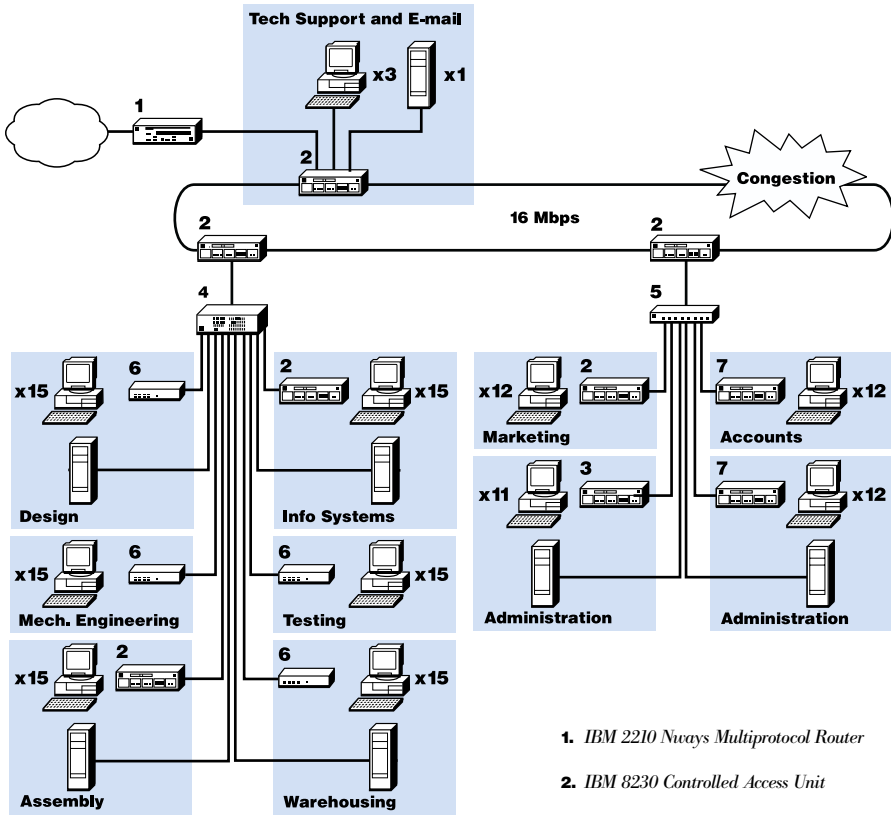
# Token-Ring Solutions from IBM

**Problem**

Increased network traffic generated by server consolidation causes backbone congestion at the headquarters of a large company.

**Current environment**

Adding workgroup switches solved the problem of congestion in the workgroups, but server consolidation put major new demands on the backbone. Their experience with workgroup switching leads them to believe that similar benefits would accrue from deploying switches in their backbone.



- 1. IBM 2210 Nways Multiprotocol Router
- 2. IBM 8230 Controlled Access Unit
- 3. IBM 8228 Multistation Access Unit
- 4. IBM 8270 LAN Switch Model 800
- 5. IBM 8226 RJ-45 Connection
- 6. IBM 8239 Token-Ring Stackable Hub



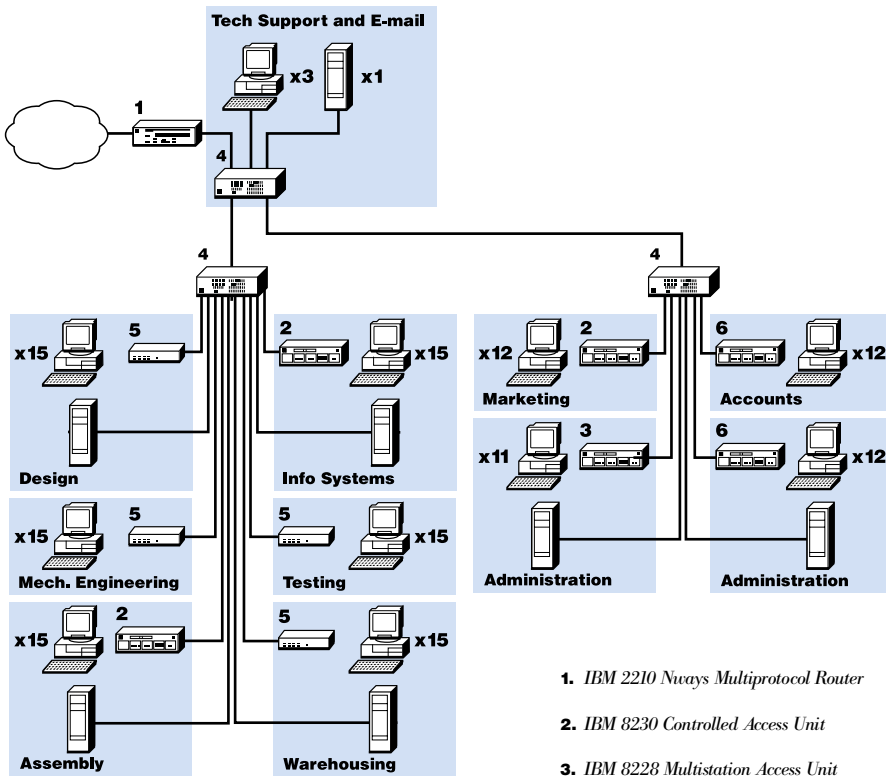
**Solution**

To solve its problems, the company deploys IBM 8270 switches. Deploying switches allows the company to separate traffic generated by individual servers without changing the underlying network infrastructure or affecting applications. The 8270 has the added advantage of aggregating up to four, parallel 32-Mbps paths into a single TokenPipe.

Deploying switches in the backbone not only eliminates congestion, it gives the company new control points that facilitate adding high-speed links (like ATM) in the future. Switches limit the impact that supporting higher backbone speeds can have on the backbone. Changes simply require using TokenPipes to aggregate links or upgrading cabling and changing to higher speed UFCs.

**Benefits**

- Minor changes to the backbone bring improved responsiveness for the entire network.
- New technologies can be incorporated in the backbone as needed without affecting the rest of the network.



1. IBM 2210 Nways Multiprotocol Router
2. IBM 8230 Controlled Access Unit
3. IBM 8228 Multistation Access Unit
4. IBM 8270 LAN Switch Model 600 or 800
5. IBM 8226 RJ-45 Connection
6. IBM 8239 Token-Ring Stackable Hub



## Supplementary Information



### Specification sheets:

- IBM Token-Ring PCI Adapter Family, G224-4577
- IBM Token-Ring LAN Adapter Family, G221-4512
- IBM Turbo 16/4 Token Ring ISA Adapter, G326-0248
- IBM Token-Ring Hub, G221-4075
- IBM 8226 Token-Ring RJ-45 Connection Model 001, G224-4415
- IBM 8230 CAU Model 3, Model 13 and Model 213, G221-4049
- IBM 8230 CAU Model 4A and 4P, G224-4433
- IBM 8239 Token-Ring Stackable Hub, G224-4564
- IBM 8270 Nways LAN Switch Family, G224-4510



### Internet sites:

[www.ibm.com/networking](http://www.ibm.com/networking)  
[www.ibm.com/networking/netprod.html](http://www.ibm.com/networking/netprod.html)  
[www.ibm.com/networking/trl/trlover1.html](http://www.ibm.com/networking/trl/trlover1.html)  
[www.ibm.com/networking/netprod.html#token](http://www.ibm.com/networking/netprod.html#token)  
[www.ibm.com/networking/861/861prod.html](http://www.ibm.com/networking/861/861prod.html)  
[www.ibm.com/networking/823/823prod.html](http://www.ibm.com/networking/823/823prod.html)  
[www.ibm.com/networking/8228/8228over.html](http://www.ibm.com/networking/8228/8228over.html)



### Additional resources:

- IBM Networking Hardware Product Guide, G224-4575
- NETeam product hot sheets ([www.ibm.com/networking/ntm/ntmhot.html](http://www.ibm.com/networking/ntm/ntmhot.html))
  - IBM 8239 Token Ring Stackable Hub (DIDA72)
  - IBM 8270 Nways LAN Switch Family (DIDA66)