Powerful, flexible, low-cost Ethernet workgroup solutions

IBM 8277 Nways Ethernet RouteSwitch and 8277 RouteSwitch Software Programs

Highlights

8277 Ethernet RouteSwitch:

- ***24-port 10/100 auto-sensing full duplex***
- ***Internal IP and IPX routing***
- ***Layer 3 switching***
- ***HRE, GeB capable***
- ***"Drop-in" replacement for 8273 RouteSwitch***
- ***Full range of options for high-speed connections***

8277 RouteSwitch Software Programs:

- ***Provide high function and flexibility***
- ***Control program and high-function optional software programs***
- ***Increase flexibility of 8277***
- ***Simplify configuration***
- ***LAN Emulation, Multiprotocol Encapulation over ATM and Classical IP over ATM***

The 8277 Nways® RouteSwitch Model 524

Higher performance, smooth migration

The 8277 RouteSwitch and companion software can provide drop-in solutions for many requirements in today's environment. The 8277 is equipped with twenty-four 10/100 BASE-T switch ports and can consolidate a cluster of 24 workstations into a larger network, providing each workstation with its own dedicated port. And if higher performance is needed, the 8277 offers smooth migration from 10 Mbps to 100 Mbps—without changing the 8277 switch. The capabilities of the IBM 8277 make it a leader for today's workgroup—or high-end switching systems.

High throughput, low latency

Ideal for small-to-mid-size workgroups, the IBM 8277 Nways Ethernet RouteSwitch uses advanced hardware architecture to provide high-speed switching between a fixed number of Ethernet ports, and an uplink for high-speed server and backbone access. It supports a very large numbers of hubs and segments throughout your network by connecting multiple 8277s together over 100BASE-TX, 100BASE-FX or ATM backbone links. It's easy to set up. As soon as it's connected to your network, the 8277 automatically learns the locations of over 1000 devices and starts passing traffic to your network. You can increase your capacity by 10 times, add a small hub or reconfigure a multisegment hub and connect each new segment to its own 8277 port. Throughput is high and latency is low.



IBM 8277 Nways Ethernet RouteSwitch

More horsepower for your LAN
Bottlenecks are common in networks that use high-speed technologies. Often the problem is server access. The 8277 improves overall network performance by providing high-speed server access ports. These include ATM (OC3c), 100BASE-TX and 100BASE-FX. The switch automatically translates from Ethernet to any of these server access ports. The process is simple: attach Ethernet hubs, segments or devices to 8277 ports, install a 100BASE-TX or ATM card in your servers and attach each server to its own high-speed port on the 8277.

You can connect directly to ATM in several ways: connect your 8277 to ATM using RFC 1483 (Multiprotocol Encapsulation of ATM) to provide point-to-point bridging across ATM. Or with the 8277's support for ATM LAN Emulation (LANE) Version 1.0, invest in ATM switches and attach your servers to an ATM switch.

Powerful, flexible features
The IBM 8277 Nways Ethernet RouteSwitch possesses powerful features that not only enhance your network's capabilities and flexibility, but also help protect your investment. 10/100 capability assures users of a simple migration from 10-Mbps Ethernet to 100-Mbps Ethernet within the same switch and eliminates further investment as network bandwidth demands increase. One slot for 4-port 100TX, 2-port multi-mode fiber 100FX, 1-port 155-Mbps ATM, or 1-port (plus a redundant port) 155-Mbps ATM high-speed uplink modules.

- Automated moves, adds and changes reduce network administrative costs.
- Integrated routing code turns each switch port into a powerful high-speed router unmatched by many backbone routers of today.
- RMON provides detailed information on all ports, helping you monitor and troubleshoot the entire network from a central location.
- Powerful traffic management limits data loss even during heavy traffic loads.
- State-of-the-art network management helps to monitor and troubleshoot the network for maximum network usage and efficiency.
- An optional backup power supply helps ensure that the system stays operational if a primary power supply fails.

The 8277 Nways RouteSwitch Software Programs

The perfect solution
The IBM 8277 Nways RouteSwitch Software Programs V3.2 together with the new IBM 8277 Nways Ethernet LAN RouteSwitch Model 524 provide a complete, intelligent 10/100 Ethernet workgroup switching solution for small to mid-size networks. You get incredibly powerful features, like layer 3 switching, RMON, and IP/IPX routing at the same price—or less—than other simple Ethernet workgroup switches.

The new 8277 RouteSwitch and companion 8277 Software Programs offer drop-in, low-cost solutions for many of your Ethernet workgroup switching requirements. For example, you can maximize throughput and performance by consolidating a cluster of workstations into a larger network.

The 8277 combination provides a full range of options for high-speed connections to backbones and servers—and optional uplink modules for Fast Ethernet, growing to ATM 155-Mbps multimode fiber connections. The 8277 is also Hardware Routing Engine (HRE) and gigabit capable.

The choice is yours
The IBM Nways 8277 RouteSwitch Software Program (NRSP) V3.2 is the controlling software program that is preloaded on the 8277 Ethernet RouteSwitch. The 8277 RouteSwitch provides multiple networking protocols between like-to-like entities. The base software, NRSP, offers a wide variety of advanced functions, including layer 3 switching, IP/ IPX routing, Remote Network Monitoring (RMON), policy-based virtual local area networks (VLANs) and LANE client.

The Nways RouteSwitch Advanced Routing Software Program (NRAR) V3.2 , Nways RouteSwitch LANE Software Module V3.2 (NRLS), and Nways RouteSwitch Next Hop Resolution Protocols Software Program (NHRP) V3.2 are optional and offer additional functions. The base software (NRSP) must be in place prior to installing any of the following optional programs:

- NRAR offers advanced routing protocols, such as OSPF, RIP II, ICMP Discovery and IP Multicast.
- NRLS provides integrated LES/LEC/BUS services in 8277 RouteSwitch ATM networks.
- NHRP gives you Next Hop Resolution Protocols for the 8277 RouteSwitches.

Higher function, higher capacity

The new 8277 Nways Ethernet RouteSwitch Model 524 and 8277 RouteSwitch Software Programs are compatible, complementary, and add synergy to existing IBM 8274 and 8273 RouteSwitch networks. The 8277, 8274, and 8273 are all managed by the same network management applications. The 8277 can therefore serve as a higher function, higher capacity, drop-in replacement for the 8273 Ethernet RouteSwitch.

And when used in conjunction with the IBM 8274 RouteSwitch, the 8277 supports the rich feature set available on the 8274, including: VLANs, Emulated LANs (ELANs), Multiprotocol over ATM (MPOA), user authentication, and firewall security.

Advanced software solutions

The 8277 NRSP base software and three optional programs deliver advanced routing functions for the 8277 Nways Ethernet LAN RouteSwitch that:

- Increase productivity and application access with Group Mobility
- Optimize bandwidth with RouteChannel
- Reduce downtime with built-in RMON
- Simplify configuration with ICMP Router Discovery

These programs also support layer 3 switching, IP/IPX routing, and policy-based VLANs.

Network management

IBM Nways RouteVision Workgroup Manager (NRWM) includes previously known applications: Nways RouteSwitch Network Manager, Nways RouteTracker Manager, Nways RouteMonitor and Nways RouteDirector. This integrated suite of NMS applications can be used to manage the IBM 8277 Ethernet RouteSwitch and the IBM 8273 Ethernet RouteSwitch lines.

Features	*Benefits*
Built-in layer 3 switching and routing	Ability to switch data within a VLAN and to route data between different VLANs
Ability to connect to high-speed Fast Ethernet and ATM backbones and servers	Choice of backbone and server connections
Simple 10 Mbps to 100Mbps migration	Smooth migration to higher performance
High-speed switching for both Ethernet and Fast Ethernet	Low internal switch latency
NRSP base control software	Internal routing, RMON, policy-based VLAN support
Three optional RouteSwitch software programs	Advanced routing functions provide IP, IPX routing, Integrated LES/LEC/BUS Services, and Next Hop Resolution protocols

Integration: slick and simple

When using switched virtual LANs (VLANs), frames are switched within a VLAN and routed between VLANs. As an administrator you can arrange users into logical groups regardless of their physical location in a network. The 8277 provides the flexibility of policy-based VLANs.

Year 2000 Ready

These products are Year 2000 Ready. The 8277 RouteSwitch and Software Programs are capable of processing, providing, and receiving data within and between the 20th and 21st centuries—provided all other products (including hardware, software, and firmware) used with the RouteSwitch and Software Programs properly exchange accurate date data.

For more information

To find out more about the IBM 8277 Nways Ethernet LAN RouteSwitch, the IBM 8277 RouteSwitch Software Programs, 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 access 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-4-FAX (1 800 426-4329) in the U.S. or Canada or by dialing 415 855-4329 outside the U.S. and Canada and requesting any of the following document numbers:

9475: *IBM 8274 LAN RouteSwitch Specification Sheet*

IBM 8277 Nways RouteSwitch and Software Programs V3.2 at a glance

Model/Part Number	***Product Name***	***Features***
524/86H3047	8277 Nways RouteSwitch	• 10/100 capability • Automated moves, adds and changes • Integrated routing code • RMON • Powerful traffic management • State-of-the-art network management • Redundant power supply
BPS/86H3051	Backup Power Supply (BPS-250)	The 8277-BPS provides an optional backup power supply for up to three Model 524s.
524/86H3125	ATM Uplink	1PT ATM2/155/OC3/MMF
524/86H3131	ATM Uplink with Redundant Ports	1PT ATM2/155/OC3/MMF
524/86H3175	Fast Ethernet Uplink	2PT FENET-100FX/FDX/MM
524/86H3173	Fast Ethernet Uplink	4PT FENET-100TX/FDX/RJ45
BPS/86H3071	Additional Backup Power Supply	Backup power supply
BPS/86H3053	Backup Power Supply Cable	Backup power supply
524/86H3069	Memory Upgrade	Memory upgrade
Model options		
Part Number	***Software program***	***Features***
4300110	8277 NRSP V3.2 Control program (preloaded)	Supports the IBM 8277 Nways Ethernet RouteSwitch. Features include layer 3 switching, IP/IPX routing, support for policy-based VLANs.
4300111	8277 Nways Advanced Routing Program V3.2	Provides advanced routing protocols: OSPF, RIP II, and ICMP Discovery (optional).
4300112	8277 Nways LANE Software Module V3.2	Provides integrated LES/LEC/BUS services (optional).
4300113	8277 Nways NHRP Software Program V3.2	Provides Next Hop Resolution Protocols (optional).
4300193	Nways RouteVision Workgroup Manager	An integrated suite of NMS applications that can be used to manage the 8277 RouteSwitch.

IBM 8277 Nways Ethernet RouteSwitch at a glance

Physical Specifications	Width: 434 mm (17.1 in) Depth: 371 mm (14.6 in) Height: 89 mm (3.5 in) Weight: 3.6 kg (8 lb fully loaded)
Operating Environment	Operating temperature: 0° to 40° C (32° to 104° F)
Power Requirements	The 8277 contains an internal autoranging power supply that accepts the following inputs: 100-120 V / 200-240 V, 3.0 A / 1.5 A, 50 Hz / 60 Hz.
Compatibility	The IBM 8277 RouteSwitch is compatible with the IBM 8274 RouteSwitch. When used in conjunction with the 8274, the 8277 supports the same rich feature set available on the 8274, including: VLANs, Emulated LANs (ELANs), user authentication, and firewall security.
Warranty	One-year warranty on the IBM 8277 Ethernet LAN RouteSwitch; limited warranty on the software programs.
Limitation	IBM 8277 Nways Ethernet LAN RouteSwitch and RouteSwitch Software network configurations require careful design and planning for efficient utilization of available system resources.

Installation information

Hardware Requirements

- Minimum machine configuration consists of an 8277 Nways Ethernet LAN RouteSwitch with a connection for configuring the unit
- NRSP Version 3.2 (which is preloaded) requires that the 8277 have a minimum of 16 MB DRAM and 4 MB flash memory (included with machine)
- 8277's processor board provides an ASCII user interface for an ASCII terminal connection, or a computer with terminal capability, and a working connection to the switch (direct or through a modem, or over a network to an I/O port via Telnet or Rlogin)
- For Telnet or Rlogin access, you must first establish an IP network address for your switch
- If multiple IBM 8277 Model 524s are to be backed up by an 8277 Backup Power Supply (BPS), one Backup Power Supply Expansion Power Supply Cable (BPS-EXP-CBL) is necessary for each additional machine.
- The customer must provide country-appropriate power cords, which are ordered separately from IBM for each 8277 chassis ordered
- Cords are 250 V 10 A unshielded power cords and are 2.7 m (9 ft) long (U.S. part number is 6952300).
- Recommended computer terminal connection is PS/2 or fully compatible, or Intel386 or higher
- 10 MB of free hard file disk space
- VGA display or VGA color monitor
- Microsoft®-compatible mouse
- Diskette drive that can read/write 1.44-MB formatted diskettes
- 8 MB of ROM memory

Software/Operating Systems

- IBM 8277 Nways RouteSwitch Software Programs V3.2 (which is preloaded)

The following require that NRSP be previously loaded on the 8277's processor board:

- IBM 8277 Nways RouteSwitch Advanced Software Routing Program
- IBM 8277 Nways RouteSwitch LANE Software Module
- IBM 8277 Nways RouteSwitch NHRP Software Program

Publications

The *RouteSwitch User's Guide* on CD-ROM is shipped with each 8277 Ethernet LAN RouteSwitch. RouteSwitch manuals are not offered as source-file publications. The RouteSwitch Software Program V3.2 Release Notes are shipped with each software product. IBM Nways RouteSwitch User's Release Notes V3.2 are available on the Internet at *www.networking.ibm.com/support.*

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