# eNetwork Connection

**IBM**

**THE IBM NETWORKING SOFTWARE NEWSLETTER**

# Putting Safety First

*IBM's ARTour can be a life-saving mobile communications technology*

*One of the most important aspects of working in the public safety field is being prepared. Law enforcement officers and emergency services personnel must be able to respond quickly and efficiently to a wide variety of situations.*

*With this in mind, IBM and its business partners have developed state-of-the-art wireless data solutions that not only improve productivity, but also prepare these individuals with mission-critical data they need to protect themselves and their community. This revolutionary technology is rapidly changing the way the public safety arena will operate and communicate in the future.*

### SEMINARS TARGET PUBLIC SAFETY PERSONNEL

IBM has recently received rave reviews from the public safety community based on its series of educational seminars about mobile computing technology and ARTour™ wireless communications middleware. Over the past several months, a team of IBM experts has presented ARTour, the company's multipurpose middleware solution, to public safety decision-makers throughout the country. After the first six sessions in San Francisco, Philadelphia, Washington, Denver, Reno, and Boston, more than half of the 400 agencies in attendance requested additional information and appointments with IBM sales representatives.

"This shows the high level of interest in acquiring faster mobile dispatching and improved wireless data communications to assist law enforcement, fire, and emergency rescue personnel in performing their jobs," says Karenne Smith, Industry Solutions Manager for IBM's Networking Software Division. "ARTour's compatibility with existing mainframe and AS/400® infrastructures—and



with a wide variety of wireless radio frequency and cellular networks—makes it an excellent choice for the public safety industry."

Steve Proctor, past president of the Association of Public Safety Communications Officers, adds, "IBM's ARTour offers a viable option for public safety entities to meet field data requirements without constructing a totally separate wireless communications infrastructure."

### ARTOUR IS A WIRELESS ALTERNATIVE

ARTour provides wireless TCP/IP connections between mobile computer users and the centralized databases and applications they use at their organizational headquarters. Users can run existing IP-based applications over wireless networks without having to worry about modifying their software applications. This greatly

# End-to-End Universal Access

**End-to-end universal access** is one of the core values of IBM eNetwork Software. It means that information is readily available to the people who need it, when they need it, where they need it.

What can end-to-end universal access do in real-life situations? In this issue of *eNetwork Connection*, you'll read how police, fire, and first-aid departments have found that eNetwork ARTour mobile solutions increase their effectiveness in an arena where split seconds can mean the difference between life and death. As one industry executive put it, IBM's work in wireless communications "is helping save lives."

In this issue you'll also read how IBM is fulfilling its promise of delivering the best in TCP/IP technology by partnering with FTP Software® to bring industry-leading technology to our customers.

You'll learn why upgrading to eNetwork Communications Server can make your network operate more effectively and why APPN®/HPR is the right choice for even the largest, most sophisticated networks.

You'll also be introduced to the *eNetwork On-Demand Education* CD-ROM, a convenient guide to everything you need to know about eNetwork Software products.

You'll read exciting product news about Communications Server for Windows™ and Windows NT™, NetWare® for SAA®, and our S/390® products.

Finally, make plans now to attend the Networking Systems Technical Conference (NSTC), October 20-24 in Miami Beach, Florida. This is *the* event for networking professionals who want to stay current with the latest networking trends and learn about the newest products. This year's NSTC promises to be the best one yet!

After you read the articles in this issue, I hope you'll agree that IBM eNetwork Software doesn't merely talk about meeting your network needs and allowing your business to succeed. We deliver effective solutions that you can use today. And we are dedicated to extending your network's reach even further in the future.

As always, I am happy to receive your comments, questions, and suggestions. You can contact me any time by e-mail at enetwork@vnet.ibm.com or by fax at 919-254-9132.

*Larry Kunz*

Larry Kunz
Editor, *eNetwork Connection*

## Host On-Demand Version 2.0 Beta Code Is Here

Host On-Demand Version 2.0 beta code will soon be available for you to test and evaluate. Host On-Demand, a 3270/5250/VTxxx emulator, now supports many new features such as cut-and-paste, print screen, and key-board remapping. Also featured in this beta version is ECLAPI, an object-oriented API similar to the traditional emulator EHLLAPI. This Java™ applet can now be served from any industry-standard Web server, and it can communicate with any Telnet server or host.

For more information, visit:

**http://www.networking.ibm.com/eNetwork/OnDemand/hod.html**

# Making Universal Access a Reality

*IBM's eNetwork Software offers internetworking without uprooting your existing networks or disrupting applications*

**It is my pleasure to welcome you** to this issue of *eNetwork Connection*. I wish you could see the spirit of excitement and creativity that I see as I work with the IBM eNetwork Software team. The people who create eNetwork Software are driven by one objective: to deliver the networking solutions you need to help your business succeed.

One of the core values of eNetwork Software is end-to-end universal access. Put simply, this means that your employees, customers, and business partners can access the data and applications they need—no matter where they are, no matter where the data and applications are, and no matter what network protocols are in between.

For the first time in the industry, eNetwork Software has made universal access a reality. Other network vendors might talk about internetworking—about moving data from anywhere to anywhere. But eNetwork Software brings you true internetworking without uprooting the networks you have in place and without asking you to disrupt or replace your mission-critical applications. Our alliance with FTP Software (see page 4) demonstrates our commitment to do whatever it takes to provide the best internetworking technology to our customers.

Other network vendors might talk about open, standards-based access to data and applications. But eNetwork Software is built on industry-wide standards; eNetwork Software is at home in hierarchical, LAN/WAN, and wireless environments; and eNetwork Software runs on all of the popular operating platforms.

Other network vendors might talk about scalability—about solutions that work on all networks, no matter how large or how small. But eNetwork Software stands up to the demands of real-life enterprises, giving your users fast, reliable access to the mission-critical data and applications they need. (See page 9 for a description of how IBM's APPN technology leads the way in scalability.)

Yes, we can talk technology as well as anyone, and we hope that you'll read about our technology vision in *eNetwork Connection* and on the Internet at our eNetwork Software Web site (**http://www.networking.ibm.com/eNetwork**). eNetwork Software is about real solutions for real people with real business needs. In the cover article for example, you'll read how police, fire, and rescue teams are hailing our ARTour wireless communications products as a key component of improving their responsiveness in emergencies.

Whether you're new to eNetwork Software or whether you've been using our products for a long time, I invite you to read about how we can meet your business needs both today and for years to come.

Carl Kessler
IBM Vice President, Networking Software Products

## Tech Talk

**Q:** My organization runs an APPC application that sends account-balance updates to CICS™ on the host. While evaluating non-IBM communications software, I noticed some dramatic increases in host CPU utilization. This doesn't happen when I use IBM eNetwork Communications Server for Windows NT or OS/2. Why is this?

**A:** Independent testing shows that IBM Communications Servers for OS/2 Warp™ and Windows NT perform better than the competition in multiple-session environments (see the Tolly Group® report #6273 online at **http://www.networking.ibm.com/cms/cs2tolly1.html**). One reason for this is persistent verification, a security feature that greatly reduces the number of times APPC applications must access the security manager, such as RACF™, on the host. Customers have reported that when their APPC applications use persistent verification, CPU utilization often decreases dramatically.

**Q:** Users on my corporate intranet use Host On-Demand to access 3270 applications through Web browsers on their workstations. Is there an easy way for them to view and download data files as well?

**A:** IBM eNetwork Files On-Demand delivers a Web browser-enabled File Transfer Protocol/APPC File Transfer Protocol (FTP/AFTP) gateway that enables users with standard Web browsers to download files from SNA hosts. Access to host files is as simple as pointing and clicking on a file's hot link from within a Web browser.

Files On-Demand is available as a no-charge enhancement to NetWare for SAA 2.2 users. To download Files On-Demand, visit **http://www.networking.ibm.com/fod/fodprod.html**.

# Teaming Up for Success

*IBM and FTP Software form an alliance to develop*

*industry-leading TCP/IP solutions*

**In early 1997,** IBM and FTP Software, Inc. entered into an ongoing agreement that combines the companies' technical and marketing capabilities to deliver solutions based on IP connectivity. The partnership is designed to give both companies' customers access to Internet and intranet applications technology based on a TCP/IP infrastructure for fast, easy, secure, and dependable information sharing.

To continue its leadership in providing TCP/IP technologies, IBM turned for help to FTP Software, the market leader in desktop-based TCP/IP applications. The partnership between IBM and FTP Software is one not only of shared technology, but also of a shared vision. IBM chose FTP Software as its IP technology partner based on the strength of FTP Software's VIP Network™ (Virtual IP) strategy, which focuses on providing solutions that enable companies to create secure, managed, and transparent networks. This strategy meshed perfectly with IBM's goal of providing its customers with secure, easy access to business-critical data.

### THE ALLIANCE RESULTS IN ENETWORK COMMUNICATIONS SUITE

The first product to emerge from the new alliance was IBM's eNetwork Communications Suite. FTP Software provides its award-winning 16- and 32-bit protocol stacks and applications for this software package, which also includes market-leading Windows communications products from IBM, Lotus®, and Netscape™. Together, these products deliver a cost-effective solution for access across networks that can include corporate intranets and hosts, as well as e-mail and the Internet.

According to Glenn Hazard, president and CEO of FTP Software, "By utilizing key FTP Software technology, IBM has been able to quickly deliver its eNetwork Communications Suite." He adds, "With IBM as our partner, FTP Software is now extending its VIP Network vision to a new set of users around the world. Customers can look forward to even more breakthroughs as IBM and FTP Software extend the leading and most cost-effective connectivity solutions to desktops worldwide."

"With FTP Software's VIP Network technologies, we were able to quickly deliver the first result of our recent alliance—our eNetwork Communications Suite," explains Al Zollar, general manager of IBM Networking Software.

"The combination of IBM and FTP Software will give customers world-class, end-to-end TCP/IP solutions from the desktop to the S/390 server. We look forward to working closely with FTP Software on additional solutions for enterprise connectivity."

### A BRIGHT FUTURE AHEAD

The relationship has continued to grow over the past months in both the development and sales arenas. IBM and FTP Software personnel have already worked together to demonstrate IP technologies at industry events, including NetWorld+Interop® in May and COMDEX® in June.

The companies' sales forces are also working together. For example, a simple query from an IBM sales office to FTP Software led to an agreement that now enables IBM sales representatives and channel partners in England to access FTP Software's XOnNet X-windows server technology and pre-sales technical support. The two companies are currently working to extend this model of joint participation, hoping to combine the strengths of each to help customers overcome the challenges of connecting the corporate enterprise.

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**For more information**

Visit **http://www.networking.ibm.com/eNetwork** or **http://www.ftp.com**

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# Revitalize Your Network with eNetwork Software

*Migrating from CM/2 to PCOMM and*

*Communications Server can simplify*

*operations and boost productivity*

**If your enterprise** has an S/390 or AS/400 processor, chances are that you have relied on Communications Manager/2 to fulfill some specific needs over the past few years. Although CM/2 has served businesses very well, it is much like the stereo system that won't play CDs. There's nothing wrong with it, but now you just wish it could do more. This is very much the concept behind IBM eNetwork Software—you wanted to do more things, so we're removing the boundaries that keep you from doing them. Instead of providing software that only supports SNA, we're now providing multiprotocol software that helps you move beyond existing network boundaries.

Today, we are making it easier for you to migrate from CM/2 to eNetwork Software—a smart move that gives you the benefits of eNetwork Personal Communications (PCOMM) client software and the eNetwork Communications Server.

### WHY MIGRATE NOW?

Nothing stays the same—especially your network requirements and your employees' information needs. To keep up with your evolving needs, it is essential that we alter our product offerings, add new function, and enhance usability. With the migration assistance and special incentives now available and with defect service for CM/2 ending on March 31, 1998, there's no better time to find out how migrating can open up a whole new world to your network users.

eNetwork Software marks a whole new era of network computing. We have started removing the boundaries in order to transform the network into a collection of all the information any user would need to access. Although different types of users have different needs and different preferences, all users like their software to be intuitive and easy to use. So, in migrating the desktop from CM/2, you can match user needs to the type of eNetwork client that is most appropriate.

### A WIDE RANGE OF OFFERINGS

Most CM/2 desktop users find that PCOMM 3270 and AS/400 satisfies their needs and also provides simpler interfaces and productivity options. In addition to PCOMM, we've tried to cover the whole gamut of today's user needs with the eNetwork client software offerings—while still keeping system administrators in mind. For example, we have offerings that help you:

◆ Support the varied needs of the entire enterprise by using a single comprehensive offering—eNetwork Communications Suite
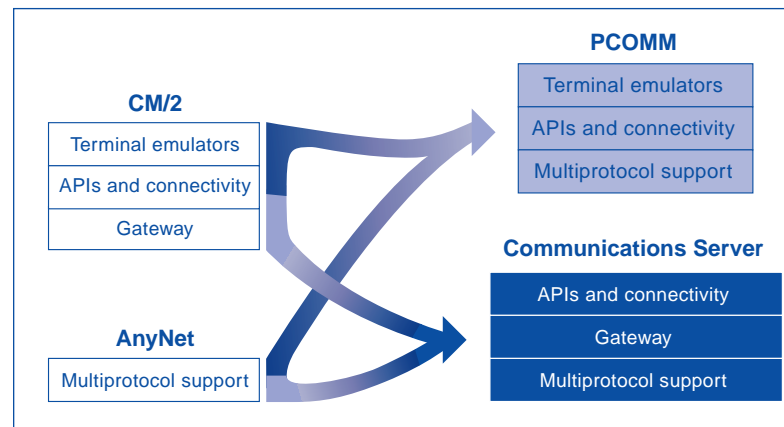


*A high-level view of where functions have migrated.*

◆ Minimize the footprint on the client machine by using our new installation option that lets you use a supporting data server

◆ Extend support for 3270-based applications to Web-oriented users by using Host On-Demand and their existing Web browsers

You will find these types of functions (and more) in PCOMM for client-related needs or in eNetwork Communications Server for server-related needs. PCOMM is available for OS/2, Windows 3.1, Windows NT, and Windows 95. Communications Servers are available for OS/2 Warp, Windows NT, AIX®, OS/390™, and NetWare (NetWare for SAA).

Reconfiguring your network is now just the click of a button away—you can download a free migration utility at **http://www.networking.ibm.com/cms/cs2dwn01.html**.

For more information about migrating from CM/2 to eNetwork Software, see the migration scenario on page 6.

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**For more information**

For service information, contact: **mcappelletti@vnet.ibm.com**

For product information, contact: **epeters@vnet.ibm.com**

Visit **http://www.networking.ibm.com/cmm/cmmmain.html**

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# The Advantages of Migrating to eNetwork Software

*A migration scenario to help you get started on your own migration today*

*The following hypothetical scenario can help you understand some of the benefits associated with migrating from CM/2 to eNetwork Software clients and servers. The scenario describes the business environment and needs of a major appliance manufacturer, including views of its network before and after the migration.*

The CFO of this company was pleased about the advances that the company had made in the last few months. The company had recently deployed SAP R/3™ to streamline its manufacturing processes at its two subassembly sites and at the final assembly and distribution site. It was already clear that profits would be on the rise as a result of this change. Based on its success, the company was considering another major change—integrating the company's financial system into the manufacturing process through SAP R/3.

Although she was excited about streamlining financial operations, the CFO realized that she might need to relocate her staff of 100 from the headquarters located in another city to take advantage of the new SAP R/3 system and the network that supported it. An overhaul of the headquarters network or the installation of a parallel network was financially out of the question. With so much at stake for her and 100 employees, the CFO asked the company's IT director whether there might be another solution.

The IT director agreed to investigate possible alternatives while he was evaluating other requirements to be addressed during the upgrade of desktops at the company's headquarters. The result of this more detailed evaluation brought a smile to the CFO's face for more than just financial reasons. The physical move would now be unnecessary. Read on to learn what happened with the network and how it will benefit the company in the short term and for many years to come.

### THE REQUIREMENTS FOR A NEW NETWORK

The company had been using CM/2 for client-related needs and in a server capacity and had already realized the benefits of using Communications Server for AIX during the rapid deployment of SAP R/3 six months earlier. The company's existing environment included the following configuration:

◆ An SNA/High-Performance Routing (HPR) backbone network provided access to core SNA business applications and data that resided on an S/390 at the headquarters site.

◆ A Token-Ring LAN in the headquarters location supported 1,000 users with CM/2 on desktops. CM/2 was also used as the gateway to access the S/390.

◆ The two subassembly sites and the distribution center had identical network configurations and application environments, and were part of a TCP/IP network. Each environment consisted of a Token-Ring LAN that primarily supported TCP/IP traffic from the workstations to access the SAP R/3 manufacturing process and Lotus Notes® applications. With the R/3 application, users could indirectly access information that resided on the S/390 with the support provided by Communications Server for AIX. Users on the LANs had CM/2 on their desktops to access current corporate policy and benefits information.

◆ Ten employees in each of 30 sales offices located across a large geographical area were supported by a Token-Ring LAN and CM/2 on their desktops. CM/2 was used as a gateway for sales representatives to access S/390 applications and retrieve customer data, place orders, and obtain policy and benefits information.

There were several requirements for the migration:

◆ Integrate the company's financial system with its manufacturing processes and, if possible, find a way to avoid relocating the financial staff.

◆ Replace the current "green-screen" interfaces for S/390 applications (ordering, customer data, policy, and benefits) with more intuitive graphical interfaces that could increase productivity.

◆ Provide consistent e-mail support across the enterprise for all headquarters employees to help improve internal and external communication.

◆ Create an infrastructure that could not only support, but facilitate, electronic commerce.

◆ Develop an environment that could support Internet access for headquarters and sales employees to gather competitive and customer information. By accomplishing this task, the company hoped to avoid major desktop, server, and network overhauls later.

### STEPS TO A SUCCESSFUL MIGRATION

The company took the following steps during its migration process:

**1.** Migrate 1,500 CM/2 desktops at the subassembly sites and distribution center to PCOMM.

**2.** Upgrade three CM/2 gateways at the subassembly sites and distribution center to Communications Server for OS/2 Warp. Working in conjunction with PCOMM, Communications Server becomes a
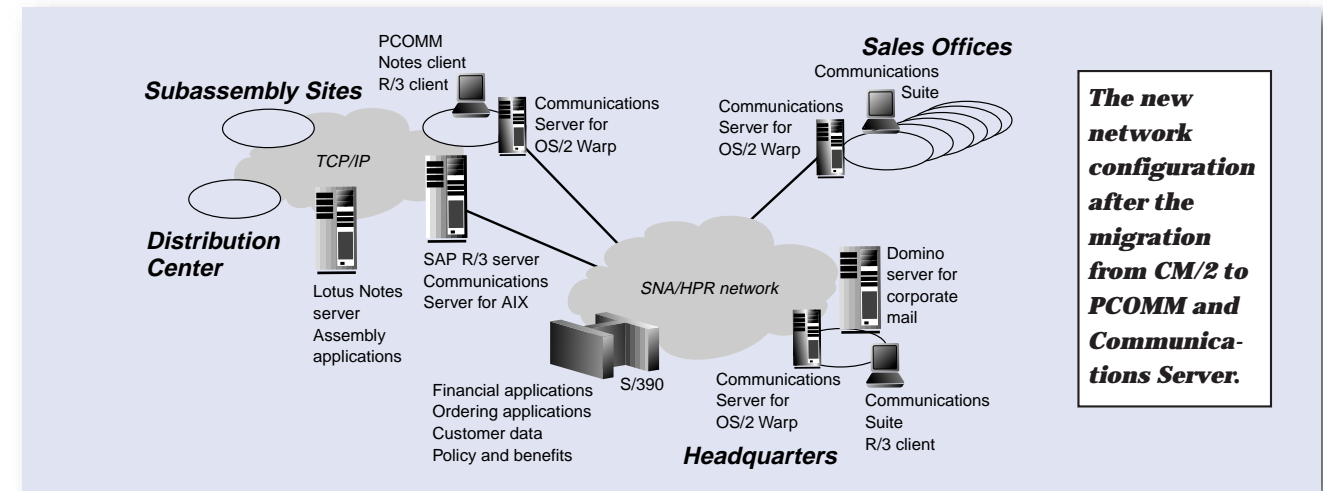
TN3270 server, eliminating the need for two types of network protocols on the LAN.

**3.** Add a Lotus Domino™ server at the headquarters to support Lotus Notes Mail® as the corporate e-mail platform.

**4.** Migrate the CM/2 desktops at the headquarters location (1,000 desktops) and in the sales offices (300 desktops) to Communications Suite, which includes PCOMM capabilities and provides the necessary Lotus Notes Mail client support.

**5.** Upgrade the CM/2 gateway at the headquarters to Communications Server for OS/2 Warp to let the sales offices access the Lotus Domino server. This gateway also enables the financial staff at the headquarters to access the new SAP R/3 financial application located on the existing SAP R/3 server at the final assembly and distribution site.

**6.** Upgrade the CM/2 gateway in each branch office to Communications Server for OS/2 Warp to provide gateway support for Lotus Notes Mail.

### A WIDE VARIETY OF BENEFITS

As soon as the migration was complete, system users saw the following productivity and usability benefits:

◆ **Simpler interfaces to S/390 applications—**Using the new front-ends developed with the PCOMM Toolkit, existing and new sales force members are more efficient at placing orders and providing and using customer data. All employees can access policy and benefits information much easier.

◆ **Familiar interfaces regardless of employee location—**Sales representatives now enjoy the same familiar PCOMM interface, whether they are in the office or traveling with their notebook computers.

◆ **Interfaces for the Internet, an intranet, or TCP/IP applications—**In keeping with long-range corporate objectives, every employee in the headquarters and sales offices has Netscape Navigator™, as well as a TCP/IP protocol stack and applications.

System and network administrators also gained several benefits with the new network configuration:

◆ **Fast creation of custom desktops—**By using custom keypads, toolbar customization, hotspots, and sticky keys, the company easily customized PCOMM to meet the specific needs of small groups of users. Record-and-playback capabilities now enable administrators to increase their productivity by simulating cumbersome and repetitive sequences of keystrokes.

◆ **Simpler LU definitions—**Automatic definition of Logical Units (LUs) means that system administrators no longer have to predetermine and define the number of LUs needed to support each user's emulation sessions.

◆ **Migration to a different Windows desktop environment without additional product expense—**Purchasing PCOMM and Communications Suite means that future migration to a different Windows platform can occur without additional charges for a new PCOMM or Communications Suite product license.

Application developers saw a significant productivity boost after gaining an easy way to eliminate green screens. Developers have been able to revise S/390 applications three months ahead of schedule by using the time-saving PCOMM Toolkit.

For the entire enterprise, there are significant cost savings. For a thorough analysis of the financial benefits, see *Migrating to IBM eNetwork Personal Communications and Communications Server* (G325-3711). You can review other network configuration scenarios in *Positioning IBM's Family of OS/2 and Windows Desktop Communications Software Products* (G325-3642) now available on the Internet at **http://www.networking.ibm.com/cms/cms3642.html**. To order these or other IBM publications, contact your local IBM representative or order them through IBM Direct at **http://www.ibm.com/Orders/**.

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**For more information**

Visit **http://www.networking.ibm.com/cmm/cmmmain.html**

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# Simplified Network Design

*NetDA/2 streamlines design and development*
*to provide cost-effective networking*

**First there was Routing Table Generator (RTG).** Then there was NETDA MVS®. Now there is Network Design and Analysis/2 (NetDA/2), an OS/2-based network topology and routing design tool that can help you design, analyze, and optimize WANs for SNA subareas, APPN, HPR, and TCP/IP, as well as Frame-Relay networks.

RTG has been instrumental in helping networking professionals develop VTAM® and Network Control Program (NCP) path tables for traditional SNA networks. NETDA has built upon this foundation by adding capacity planning. Now, NetDA/2 continues the progression by adding an enterprise approach to backbone and peripheral APPN as well as subarea design and analysis.

NetDA/2's enhanced graphical user interface enables you to easily add, modify, or delete network nodes, routes, and Transmission Groups (TGs). You just specify the required parameters, and NetDA/2 graphically displays the new network's topology and routing design while showing the relationship between all resources in the network. NetDA/2 helps ensure cost-effective network performance, capacity, and reliability by:

◆ Easily incorporating additional requirements within an existing design to facilitate network growth
◆ Providing a "what if" scenario capability that can simulate network activity to evaluate performance and reliability
◆ Making it easier to modify network configuration and generate associated routes/paths
◆ Accepting RTG and NETDA MVS data to capitalize on previous network design efforts

**NETDA/2 1.5 ENHANCEMENTS**
With the new Version 1 Release 5 enhancements, NetDA/2 helps streamline network development. You can design an entire network from scratch or you can design and implement a subarea routing scheme by using your very own criteria. Or, you can redesign an existing network or complete a partial network design. While performing these tasks, you can take advantage of the following enhancements:

◆ **TCP/IP support—**You can now define and simulate TCP/IP networks. In addition to calculating TCP/IP routing tables and assigning capacities to TCP/IP links, NetDA/2 enables you to place Domain Name Servers

(DNSs). Options on the Network view help you quickly identify DNSs and TCP/IP resources.
◆ **Easier migration—**A new Route Listing Reader function imports an easy-to-read ASCII file of routing information into a Network Design Object (NDO). This feature helps you migrate from NETDA MVS and enables easy creation or cloning of new routes.
◆ **Advanced Frame-Relay support—**You can now duplicate Permanent Virtual Circuits (PVCs). You also have more flexibility in assigning PVCs to TGs with two new TG numbering modes, Manual and Existing PVC TG, and priority ordering for the TG numbering modes. In addition, new reports list the transmission groups and routes that have been made unavailable for carrying traffic due to the migration of links to Frame Relay. NetDA/2 offers a duplicate PVC function that can reactivate some of these unavailable transmission groups and routes.
◆ **APPN route control—**In the route control notebook, a new page enables you to edit APPN CoS tables and generate reports on APPN weights and least-weight paths. You can generate the least-weight path report assuming either no failures or the failure of a single node or transmission group.
◆ **Subarea route control—**A colorful expand-route function displays component links or a route while identifying routes that contain loops formed by PVC links. You can now order routes by subarea number instead of node name—a practice that can be helpful if you use the NETDA converter to produce your Network Input Object (NIO) and select the "Subarea numbers" conversion option.
◆ **NETDA MVS and RTG converters—**These converters now propagate ownership of T4 nodes through LANs and switches. You can direct the RTG converter either to ignore the LNAME fields in LINK statements or to use them to construct switches.

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**For more information**

Visit **http://www.networking.ibm.com/nda/ndahome.html**

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# APPN: The Smartest Distance Between Two Points

*A new white paper describes the high scalability of APPN networks*



**Today's complex networks** require a new approach to networking—an intelligent technology that ties together diverse computing platforms, topologies, and applications into a single network. That approach is Advanced Peer-to-Peer Networking® (APPN). APPN's any-to-any connectivity makes it possible for large and small computers alike to communicate over local and wide area networks. APPN also gives you the flexibility, reliability, performance, and ease-of-use you can count on both today and in the future.

IBM eNetwork Software now uses APPN and High-Performance Routing (HPR) technology to provide a full set of cost-effective client/server connectivity options. These connectivity options scale to the largest and most demanding environments while delivering rock-solid quality, security, and availability. In turn, these characteristics make APPN and HPR ideal technologies for enabling organizations to extend the reach of their valuable data to suppliers, customers, employees, and business partners around the world.

**BUILDING ON SNA PERFORMANCE AND DEPENDABILITY**
SNA is well-known for delivering predictability, availability, reliability, high performance and capacity, scalability, and manageability while using links efficiently. IBM continues to add new function to SNA, including APPN and HPR. APPN gives SNA easy configuration, automatic route selection, and the ability to move servers around the network without reconfiguring clients.

HPR, the latest enhancement to SNA, adds end-to-end non-disruptive rerouting and rate-based congestion control to APPN. If a link or node along the session path fails, HPR rapidly and automatically reroutes sessions without interruption. It also proactively anticipates network problems in order to prevent congestion—the main cause of delay and packet loss. This enables full use of network resources and predictable response time for critical workloads.

**INCREASING APPN NETWORK SCALABILITY**
To learn more about APPN scalability, you can now read IBM's new white paper that positions APPN by providing up-to-date resource utilization measures for APPN control traffic. This white paper replaces a prior analysis of APPN architecture performed in 1988, which is outdated due to the following significant improvements: APPN-subarea SNA interchange nodes, central directory server, HPR border nodes, and implementation of APPN on multiple platforms.

By introducing border nodes to your network, you can divide it into subnets whose size can be easily controlled. Therefore, the issue of scalability of an APPN network is basically equivalent to the scalability of a subnet and the number of subnets used. It is widely acknowledged that the scalability of an APPN network is essentially independent of the scalability of the number of subnets it contains. Because of this, the white paper deals with the scalability of an individual subnet and addresses the following questions:

◆ How does the overhead of control flow processing, storage, and control flow bandwidth requirements vary as a function of the number of network nodes in a subnet?
◆ What utilization of the processing, storage, and bandwidth is taken up for control functions within the network?
◆ At system cold startup time, what is the time required to reach steady-state and what are the bottlenecks during cold startup?

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**For more information**

Visit **http://www.networking.ibm.com/aac/aacscalh.htm**

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# Advanced S/390 Network Computing

*New enhancements increase usability and flexibility*

*for eNetwork Communications Server for S/390*

**eNetwork Communications Server for S/390**
(CS/390) is a powerful communication gateway for connecting diverse application and network environments. With its leading-edge, open networking support, CS/390 is a network-ready software server that provides robust, reliable, scalable, and manageable support for network-centric and client/server computing. CS/390 supports SNA, APPN, HPR, TCP/IP, and multiprotocol networking and is available through two packages:

- ◆ Communications Server for OS/390 Release 3 (a part of the OS/390 operating system)
- ◆ Communications Server R2 for MVS/ESA™

Now, with a variety of new enhancements, CS/390 addresses the need for enterprise-class solutions, universal network access, and e-business solutions even better than before.

### SIGNIFICANTLY ENHANCED TCP/IP CICS SOCKETS INTERFACE
IBM has significantly enhanced its TCP/IP CICS Sockets interface to improve performance and usability. Existing applications written for this interface are supported without any modifications required. New improvements include:

- ◆ **Better performance—**A tasking mechanism significantly reduces the path length associated with initializing and terminating tasks. For more performance information, visit: **http://www.networking.ibm.com/tcm/tcmperf.html.**
- ◆ **Listener usability—**The listener has been redesigned, giving you the option of running more than one listener, no listener, or writing a customized listener. You can specify a number of new options for the listener, such as backlog, number of in-process connections, timeout values, translation options, and length of the initial message.
- ◆ **Configuration usability—**A facility similar to the CICS Resource Definition Online facility is now supported. Configuration information is stored in a configuration data set that you can modify via a transaction. New operational transactions for startup and shutdown are modeled after the CICS Master Terminal transaction, making configuration easier.
- ◆ **Improved Initialization and Termination usability—** Initialization and Termination can now be initiated via PLT processing, by invoking the operational transaction or by using a CICS LINK to the initialization/termination module.

### IBM NETWORK STATION SERVER AND CLIENT SUPPORT
Communications Server for S/390 now supports the IBM Network Station, a compact desktop network computer that provides low-cost network computing. The IBM Network Station has no diskette or hard drive and must be connected to an IBM server from which the necessary operating software can be downloaded.

The software is stored on the server and downloaded "on demand" when the IBM Network Station is powered on or when a user activates new functions. Because the software is stored on the server, you can easily manage and update even thousands of desktops from a central point. Trivial File Transfer Program (TFTP) is required to download the client code from the server to the client.

The Network Station Manager for OS/390 provides the following additional function:

- ◆ Management and retrieval of terminal applications and user preferences enable users to tailor the Network Station capabilities rather than using a common configuration.
- ◆ Enhanced TFTP provides the basic capability needed to download to the IBM Network Station.
- ◆ BootP establishes the client-to-server connection that enables a client to boot from the network.
- ◆ Dynamic Host Configuration Protocol (DHCP) extends BootP capabilities by enabling reusable IP addresses and the ability to support client-specific configuration options.
- ◆ TimeD enables you to set the time for the IBM Network Station from the server.

For more information about the IBM Network Station, visit: **http://www.internet.ibm.com/computers/networkstation/**.

### ACCESS TO HOST APPLICATIONS FROM A JAVA-ENABLED WEB BROWSER
Host On-Demand is IBM's 100% Pure Java solution that incorporates industry-standard Telnet 3270 (TN3270) protocols. It provides a high-performance, low-cost solution for intranet and Web users who need access to their central computer applications or databases from any Java-enabled, end-user platform. Access to centralized host information is as simple as pointing and clicking on an SNA application hot link from within a Java-enabled Web browser. No programming or additional hardware is required. For more information, visit: **http://www.networking.ibm.com/hex/hexprod_en.html.**

> **For more information**
>
> Visit **http://www.networking.ibm.com/cms/commserv.html**

# Introducing IntranetWare for SAA: AS/400 Edition 2

*IBM and Novell team up to*

*improve networking for AS/400 users*

**IBM and Novell®** recently introduced a new version of the industry's only AS/400-specific LAN-to-host gateway software, a release that simplifies administration, improves performance, and adds new connectivity features. Intranet-Ware™ for SAA: AS/400 Edition 2 leverages the underlying strengths of Novell's IntranetWare network operating system, in much the same way that other members of IBM's eNetwork Communications Server product line utilize their respective operating systems.

In 1996, IntranetWare for SAA: AS/400 Edition was the first product to result from the IBM-Novell connectivity alliance. Today, the new version exploits Novell Directory Services™ (NDS™) to greatly simplify and ease network administration. For example, IntranetWare for SAA and NDS enable clients to be configured in an automated manner from a central workstation. Without this ability, administrators would have to travel to each client workstation and spend as much as a half hour installing new emulator software—a time-consuming task in even the smallest of installations.

IntranetWare for SAA: AS/400 Edition 2 also works in conjunction with the Inter/intranet capabilities of Intranet-Ware. Through IntranetWare's Web server, users can access host data. Gateway performance is also improved in Intranet-Ware for SAA: AS/400 Edition 2. One system integrator who tested a beta copy estimates that the new version is at least 20 percent faster than the previous one—what he termed "a noticeable performance improvement."

Additional enhancements to IntranetWare for SAA: AS/400 Edition 2 include:

- ◆ TN5250 gateway function
- ◆ Frame-Relay Support
- ◆ AS/400 Integrated PC Server (IPCS) exploitation
- ◆ FTP-AFTP gateway
- ◆ National language support (English, French, German, Italian, Brazilian Portuguese, and Spanish)
- ◆ Host file access through a Web browser

> **For more information**
>
> Visit **http://www.networking.ibm.com/eNetwork/news0715.html**
> Visit **http://host.novell.com/as400**

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## New Functions Included in CS for OS/390

◆ **Routing Information Protocol (RIP) Version 2 for enhanced routing and availability—**RIP Version 2 for RouteD and NCPROUTE applications provides multicasting, which improves performance by reducing the network load produced by broadcasting routing information. Variable-length subnet masks and supernetting improve usability and maintenance by allowing smaller routing tables. Dynamic reconfiguration of interfaces and automatic clearing of IP routing tables have been added to RouteD to improve usability.

◆ **Support for the IMS Open Transaction Manager Access (OTMA)—**OTMA gives IMS™ TCP/IP clients access to host IMS applications without modifying the applications. OTMA is an alternative to the current TCP/IP IMS Sockets support via an IMS Listener and IMS Assist modules. With OTMA, all output from the IMS transaction is passed to the IMS message queue for routing as in normal IMS processing, thereby preserving data integrity. Both RACF and MSC transactions are supported.

◆ **High-Performance Data Transfer (HPDT) for User Datagram Protocol (UDP)—**HPDT for UDP extends the existing HPDT services capability introduced in VTAM 4.4 to now include support for applications that use UDP. HPDT UDP reduces CPU cycle consumption and enables a more efficient transfer of data.

◆ **Performance enhancements for TCP/IP—**TCP/IP exploits the new hardware checksum instruction provided on CMOS machines to improve performance.

◆ **HPR for External Communications Adapter (XCA)—**XCA connects VTAM to LAN-attached devices in APPN/SNA networks. Establishing HPR routes over XCA connections improves both throughput and performance for LAN devices.

◆ **High-Performance Data Transfer (HPDT) Services for Record API (RAPI)—**To better capitalize on high-speed networking, the existing HPDT services capability in VTAM 4.4 has been extended to include applications written to RAPI. HPDT services for RAPI optimize performance for RAPI applications—particularly those that transfer larger data objects. CICS and IMS applications that transfer large data objects are good candidates to benefit from this enhancement.

reduces the cost, complexity, and time required to deploy mobile computing solutions. Mobile users can then access the same data and applications as if they were working in the office, directly connected to their organization's computer network.

ARTour works on mobile devices that are running Windows 3.1, Windows 95, or OS/2. With an easy-to-use graphical interface, the ability to replicate electronic forms, and international language support, ARTour can make it much easier for network administrators to deploy wireless data communications.

Also included in the ARTour family are IBM's new Express products. ARTour Emulator Express optimizes wireless access to 3270 and 5250 applications and reduces data traffic by more than 50 percent. ARTour Web Express provides convenient, cost-effective wireless access to Internet and intranet applications and reduces traffic between 70 and 95 percent.

**SPEED IS KEY TO SAFETY**
When expediency can significantly determine the outcome of a call for help, public safety officers, and rescue and emergency medical technicians require quick access to police and medical records and other crucial data on the spot. Citizens also want police officers to be fighting crime on the streets, not sitting in a station house completing detailed reports.

With IBM's FORMRunner application, officers can complete reports electronically and transfer information over wireless networks via ARTour for further processing or immediate printing. Report information can then be integrated quickly into global databases to update criminal activity, thereby providing other public safety officials with the most up-to-date information.

**PUBLIC SAFETY OFFICIALS PRAISE ARTOUR**
IBM began its educational seminars in Washington, D.C., where delegates from the FBI, CIA, Treasury, Customs, Immigration, the Armed Forces, and Secret Service came together with their counterparts from state and local law enforcement, fire, and emergency service agencies in Maryland and Virginia. Steve Souder is an Arlington, Virginia-based director of emergency communications and a coordinator of response efforts in that area. He calls the seminar "the most important session of its kind we have seen, due to IBM's presentations and interest in learning directly from the public safety folks what their needs are."

Tom Wheeler, president of the Cellular Telecommunications Industry Association, has also described IBM's wireless communications activity as "critical to many industries, but of particular significance to public safety, where it is helping save lives."

**ARTOUR ADDRESSES 911 COMMUNICATIONS PROBLEMS**
One of the key topics of discussion at the seminars was the way wireless communications could help overcome some of the obstacles associated with traditional communications channels. For instance, voice communications systems, like

911 emergency phone lines, have too frequently become overburdened in large metropolitan areas. Souder relays an anecdote about an AMTRAK® collision in Virginia last year when, as a result of an avalanche of calls from the media and a curious public, all interagency communications broke down for a critical ten minutes.

Senior communications officials in Boston and San Francisco have echoed that story with incidents in their own areas. "The ability to function wirelessly with data communications can offer a viable and efficient alternative to our over-reliance on traditional voice methods," Souder says.

**WHAT ARTOUR USERS ARE SAYING**
"RAM Mobile was an early adopter in the ARTour Beta Program. RAM finds the software much better than what was used before for wireless users. The ability to use TCP/IP-based applications immediately is very attractive to RAM. RAM Mobile uses and endorses IBM's ARTour family as the most comprehensive wireless enabling software we've yet found. We use it internally and recommend it to our subscribers."—Buzz Lieffer, RAM Mobile

**ADDITIONAL SEMINARS TO FOLLOW**
Based on its initial success in providing essential seminar training and product demonstrations, IBM has received requests for similar presentations from many law enforcement and emergency services agencies. IBM plans to take its expert team on the road to visit several other cities in the United States.

So far, the seminar series has even captured the attention of the consumer and trade press. After attending the seminar, Mark Kellner of The Washington Times wrote, "IBM's ARTour is a key element in a variety of significant applications of wireless technology. In the public safety arena, this technology is critical not only for increasing efficiency, but helping to preserve the lives of officers in the field and the public. It is obvious that federal, state, and local agencies are anxious to learn more about this new opportunity."

An ABC news anchor in Reno might have summed it up best when she concluded coverage of the local event by saying, "Clearly there is no more important function for the amazing mobile and wireless technology being developed by IBM and its partners than the applications that accompany a police officer or fireman into a man-made or natural crisis."

Any public safety officials interested in attending future IBM seminars should contact IBM Networking Software for details.

**For more information**

In North America, call 1 800-735-7638
or visit **http://www.software.ibm.com/mobile/**

# IBM Delivers Networking Solutions for Windows NT

*IBM eNetwork Communications Server and MQSeries join DB2 in receiving "Designed for Microsoft BackOffice" certification*

**With three of its products** recently receiving the "Designed for Microsoft BackOffice™" logo certification, IBM is fulfilling its commitment to provide software that integrates smoothly into a Windows NT environment. Late last year, IBM's DB2® for Windows NT received "Designed for Microsoft BackOffice" certification, and now eNetwork Communications Server for Windows NT and MQSeries® have gained that distinction as well.

**IMPROVED INFORMATION ACCESS**
IBM eNetwork Communications Server for Windows NT is the most cost-effective, high-performance SNA gateway server on the market. IBM Distributed Database Connection Services (DDCS) Gateway for Windows NT provides the most secure, feature-rich service for workstation client access to host databases. Together, Communications Server and DDCS provide the best combination of services for PC and UNIX® client connections to databases on DB2 for AS/400, DB2 for OS/390, or DB2 for VM and VSE.

Although DDCS Gateway for Windows NT 2.3.2 documentation produced prior to the Communications Server availability lists Microsoft® SNA Server as a prerequisite, IBM now recommends that you instead use Communications Server for Windows NT as the prerequisite. This enables you to take advantage of the enterprise-class dependability, end-to-end universal access, and easy implementation and use of Communications Server.

Together, DDCS and Communications Server provide the best solution for organizations that want to implement a replicated branch office, departmental data mart, or Web application that can deliver both host data and multimedia content. In particular, the insurance, retail, banking, and health care industries that rely on data distributed across multiple platforms and queried from distributed sites would likely find this combination of products an indispensable foundation to their specific environments.

**For more information**

Visit **http://www.networking.ibm.com/cms/commserv.html**
or **http://www.software.ibm.com/data/**

## IBM's New "Designed for Microsoft BackOffice" Certified Products

**COMMUNICATIONS SERVER FOR WINDOWS NT**
An integral part of IBM's eNetwork Software product line, eNetwork Communications Server for Windows NT provides host and Internet access, multiprotocol integration, and end-to-end connectivity solutions. You can use these solutions to interconnect people to the information they need—with enterprise-class dependability and network computing support for electronic commerce. Communications Server is an industrial-strength communications solution that supports all major platforms, including AIX, OS/2, OS/390, Windows NT, and NetWare. It is also fully interoperable with OS/400 environments. SNA applications running on these familiar LAN-attached desktop environments can communicate across both SNA and TCP/IP to host-based SNA applications.

**MQSERIES**
As critical business information is increasingly spread across distributed systems, the need for communications between platforms is more essential than ever. That's why IBM developed MQSeries—award-winning software that provides the reliable transfer of information between applications regardless of the type of computer or network used. This design enables you to take advantage of best-of-breed applications on the platforms or communications protocols you choose. MQSeries runs on more than two dozen leading business computing platforms, including IBM, HP™, Digital, Sun®, Windows, and Windows NT.

# Networking Made Easy

## The eNetwork On-Demand Education CD-ROM

## is a one-stop multimedia resource



a one-stop multimedia resource center for IBM eNetwork Software. Whether you are an executive, technical support specialist, or somewhere in between, this CD-ROM was designed with you in mind.

IBM eNetwork On-Demand Education combines the ease of Web browsing with the latest in frames and JavaScript™ technologies to provide an easy-to-use, self-paced learning tool. Just select the path that takes you to the educational material in which you are most interested:

◆ **Get familiar with the products—** Product features and benefits for Communications Server, Personal Communications, ARTour wireless solutions, and Communications Suite are described with clear, supportive, graphic examples.

◆ **Learn about integrated solutions—** You can discover how these products can be used together to create customized solutions for a variety of networking situations.

◆ **Browse the complete library of marketing collateral—**Announcement letters, brochures, articles, press releases, and presentations are included in PDF format for easy viewing and printing.

**Clients. Servers. Multiprotocol.** Sockets. Nodes. APPN. Wireless. Windows. OS/2. AIX. The networking world seems to have a language of its own...a hodgepodge of terms where only thing seems constant—continuous change.

If you've ever been confused by the complexities of networking, you're not alone. Networking can be an intimidating environment that includes a wide range of products extending from your desktop all the way to your S/390 mainframe. Learning what products can solve your networking needs— and understanding how certain clients work with certain servers to reach applications on another server or mainframe—can be difficult tasks.

To simplify these tasks and to help make networking a little less intimidating, IBM now offers its *eNetwork On-Demand Education* (order number GV40-0548-01) CD-ROM,

◆ **Help prevent installation jitters—**Let eNetwork On-Demand Education teach you how to install, configure, customize, and troubleshoot before you begin.

Not only do you get all of this great information—you can learn on your own schedule, at your own pace, in your own location. There are no classes to attend, no travel costs, and best of all, the CD is free. If you're ready to explore this rich educational tool, be sure to get your copy today.

### For more information

Visit **http://www.networking.ibm.com/eNetwork/ecd**

# Upcoming Events

**SHARE**
Atlanta, GA
**AUGUST 10-15, 1997**
http://www.share.org

**IBM TechCon, Building Networked Computing Solutions**
Boston, MA
**AUGUST 12-14, 1997**
http://www.dciexpo.com/TechCon/

**COMMON Australasia**
Sydney
**AUGUST 17-19, 1997**
http://www.common.org

**Australian SHARE/GUIDE**
Sydney
**AUGUST 17-20, 1997**

**COMDEX/Sucesu-SP Brazil '97**
Sao Paulo
**AUGUST 18-20, 1997**
http://www.comdex.com

**COMDEX Korea**
Seoul
**AUGUST 26-30, 1997**
http://www.comdex.com

**COMMON**
San Antonio, TX
**SEPTEMBER 21-26, 1997**
http://www.common.org

**COMDEX/SCIB '97**
Montreal
**OCTOBER 7-9, 1997**
http://www.comdex.com

**COMDEX and Object World**
Frankfurt
**OCTOBER 7-12, 1997**
http://www.comdex.com

**NetWorld+Interop**
Atlanta, GA
**OCTOBER 8-10, 1997**
http://www.interop.com/

**COMMON Regional Conference**
Baltimore, MD
**OCTOBER 8-10, 1997**
http://www.common.org

**GUIDE**
New Orleans, LA
**OCTOBER 12-17, 1997**
http://www.guide.org

**NetWorld+Interop Paris**
Paris
**OCTOBER 20-23, 1997**
http://www.interop.tm.fr

**Networking Systems Technical Conference (NSTC)**
Miami, FL
**OCTOBER 20-24, 1997**
http://www.training.ibm.com/ibmedu/conf.htm/nstc/

**Japan GUIDE/SHARE**
Kyoto
**OCTOBER 23-24, 1997**
http://www.jgs.org

**NetWorld+Interop London**
London
**OCTOBER 27-30, 1997**
http://www.interop.com

**NETech**
Mandelieu, France
**OCTOBER 27-31, 1997**
http://www.training.ibm.com/ibmedu/conf.htm

**Networks Expo**
Dallas, TX
**OCTOBER 28-30, 1997**
http://www.networksexpo.com/dallas97/index.html

**GUIDE/SHARE Europe 2nd Technical Symposium: Systems Management**
Rome
**NOVEMBER 3-4, 1997**
http://www.gse.org/confrenc.htm

**APPN Implementers' Workshop (AIW 15)**
Raleigh, NC
**NOVEMBER 3-6, 1997**
http://www.networking.ibm.com/app/aiwhome.htm

**COMMON Regional Conference**
Nashville, TN
**NOVEMBER 5-7, 1997**
http://www.common.org

**COMDEX Fall**
Las Vegas, NV
**NOVEMBER 17-21, 1997**
http://www.comdex.com

**NetWorld+Interop Sydney**
Sydney
**NOVEMBER 24-28, 1997**
http://www.interop.com.au/

**COMDEX/IT India '97**
New Delhi
**DECEMBER 3-6, 1997**
http://www.comdex.com

**Fall Internet World '97**
New York, NY
**DECEMBER 8-12, 1997**
http://events.iworld.com/fall97.html

These events represent select conferences and trade shows of potential interest to *eNetwork Connection* readers. IBM makes no claim as to the value of these events. To list an event that is not shown here, send e-mail to enetwork@vnet.ibm.com.

# Sign Up Today for NSTC '97

Plan now to attend the 1997 Networking Systems Technical Conference (NSTC) being held October 20–24 at the Fontainebleau Hilton in Miami Beach, Florida. This year's conference is the place to be for e-business—you can learn about IBM's wide range of Internet solutions designed to help your business make the most of this technology.

NSTC helps keep you up to date on the latest trends in networking with more than 100 in-depth sessions spanning four topic tracks:

◆ Systems Management    ◆ Internet/e-business    ◆ Networking Hardware    ◆ Networking Software

This year's conference features two outstanding keynote speakers:

• *Rick McGee, Vice President of Strategy and Business Development, IBM Networking Hardware Division* will help you gain insight into IBM's vision of network computing and its focus on providing total solutions designed to meet the challenges you face today and tomorrow.

• *Al Zollar, IBM General Manager of Networking Software* will describe the fundamental issues of extending your enterprise network and discuss how the IBM eNetwork Software strategy provides all the tools you need for network computing.

Be sure to visit the Product Expo to see demonstrations of the newest networking products, technologies, and solutions. The Expo was one of the liveliest and most popular parts of last year's NSTC, and this year it will be even bigger and better.

While at the conference, you can also complete your testing for The Professional Certification Program from IBM at no extra charge. Study ahead by checking out the certification Web site at http://www.ibm.com/certify.

*For more information or to register:*

In North America, call  1-800-IBM-TEACH (1-800-426-8322) and ask for "Conferences." From elsewhere, call 001.770.858.5902 or visit http://www.training.ibm.com/ibmedu/conf.htm/nstc

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