

NETWORK WORLD

The Newsweekly of Enterprise Network Strategies

Volume 9, Number 49

An International Data Group Publication

December 7, 1992

IBM to widen peer-to-peer net portfolio

By Michael Cooney
Senior Editor

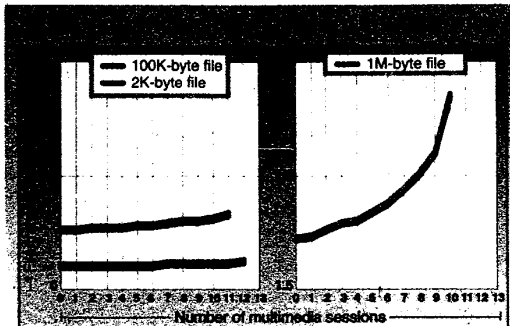
RALEIGH, N.C. — IBM will strengthen its peer-to-peer networking foundation next spring with the rollout of software products that ease network configuration and help bring existing equipment into the APPN era.

The new products include an automatic configuration facility for Advanced Peer-to-Peer Networking End Nodes, a software package that lets workstations participate in LU 6.2-based nets while emulating 3270s and an Advanced Program-to-Program Communications file-transfer program.

APPC is IBM's application program interface to underlying LU 6.2 peer-to-peer data transport services. LU 6.2, the key transport protocol in APPN, allows computers to communicate with one another directly without involving the mainframe.

One of the most significant APPC rollouts will be Discovery Architecture software, code IBM will implement in its OS/2, NS-DOS, OS/400 and AIX operat-

(continued on page 76)



Figures show the effect of multimedia sessions on server-to-client file-transfer times. The IBM bitless Token-Ring test network supported 13 Personal System/2 clients and 3 OS/2 servers — 2 for multimedia traffic and 1 for data — outfitted with new Busmaster Token-Ring adapters.

GRAPHIC BY SUSAN J. CHAMPNEY

SOURCE: IBM, RESEARCH TRIANGLE PARK, N.C.

IBM girds token ring for multimedia applications

By Joanne Cummings
Senior Writer

WHITE PLAINS, N.Y. — IBM is planning to announce software and a 32-bit token-ring adapter that will enable 16M bit/sec Token-Ring local-area networks to support multimedia applications more efficiently.

The products, detailed in an internal white paper, will add to the company's growing arsenal of multimedia wares and flesh out its plans for distributed multimedia support ("Multimedia storm

to sweep over Las Vegas," *NW*, Nov. 16).

According to an IBM spokesman, the products will be announced shortly and will be generally available sometime in the first half of next year.

The white paper said IBM is working on software that will run under LAN Server 3.0 and enable a 16M bit/sec Token-Ring LAN to accommodate a set number of multimedia sessions along with traditional data.

(continued on page 74)

Info Builders expands data access horizons

Enhanced EDA/SQL gives CICS, NetWare users entree to new databases; firm widens ties to DEC.

By Wayne Eckerson
Senior Editor

CHICAGO — Information Builders, Inc. (IBI) this week is expected to announce a new version of its database access software that will give Novell, Inc. NetWare and IBM CICS users access to more than 50 databases.

In addition, IBI is expected to announce that its Enterprise Data Access (EDA)/SQL tool will run on five new Unix platforms and work with Digital Equipment Corp.'s Accessworks database access software to extend the reach of that product. IBI will also unveil a routing feature that will enable Unix and DEC VAX EDA/SQL servers to function as hubs for distributing SQL data requests throughout a network.

The announcements will be made Wednesday at Digital Consulting, Inc.'s Database World & Client/Server World Conference and Exposition here.

EDA/SQL is connectivity software that provides SQL access to more than 50 relational and non-relational data sources.

IBI is scheduled to team up with Novell to announce EDA/SQL products that run on NetWare servers. Since more than 60% of all local-area network

(continued on page 73)

INSIDE

■ Few users have swallowed the vendor's bait to use Advantage Networks as an enterprise backbone strategy. Page 53.

■ Innovator Jeff Case uses down-home style to push SNMP ideas. Page 79.

NETLINE

▲▲▲

LAWRENCE LIVERMORE embarks on nationwide ATM net project with AT&T. Page 4.

USL SLASHES OSI PRICES to jump-start market. Page 4.

BT TO CUT COST of frame relay service, expand Tymnet into 17 new countries. Page 6.

UNIX INT'L DELIVERS source code for its distributed management system. Page 6.

ment system. Page 6.

USERS SET OPEN SYSTEMS priorities at Xtra World Congress. Page 6.

MFS DATANET REVEALS progress in deployment of first wide-area ATM net. Page 6.

LAN USERS AT RISK of data-destroying disasters, according to new survey. Page 6.

PC price war isn't all good news for network vendors

By Bob Brown
Senior Editor

Network product suppliers have had good reason to be bullish in the personal computer price war, given that users are hooking most of their new low-cost PCs into networks.

But the war may wind up costing net vendors in the long run.

As PC prices plummet, the costs of associated network products, such as local-area network adapter cards and PC-to-mainframe gateways, are looking high in comparison. It seems likely that vendors will have to trim prices and profit margins due to pressure from customers.

"There are good and bad things for network vendors in the

PC price war," said Todd Dagues, director of data communications research at The Yankee Group, a market research firm in Boston.

"Lower prices are making it more attractive for users to downgrade from mainframes to client/server PC networks," he said. "On the other hand, users are asking why a network connection is now a bigger percentage of the cost of a workstation than it used to be, which will result in price pressure on the vendors."

Mike Nunnally, network specialist at Deaconess Hospital in Evansville, Ind., said costs for adapters and other PC peripherals should be falling along with PC prices. "The prices should

(continued on page 64)

AT&T opens SS7 net for 800 routing

By Bob Wallace
Senior Editor

BASKING RIDGE, N.J. — AT&T will offer an advanced 800 feature beginning Dec. 31 that lets users tap into its Signaling System 7 (SS7) network to re-route inbound calls in less than a second.

The feature, dubbed 800 Service Intelligent Call Processing (ICP), is an improvement over the carrier's current advanced 800-routing options, which require users to implement preset routing plans in the AT&T net. Those options take several minutes to invoke and are not as flexible in handling unforeseen calling spikes.

With ICP, a computer at the customer's site uses a direct link to AT&T's SS7 net to instruct

(continued on page 75)

NEWSPAPER

INTERNETWORKS

LAN-TO-LAN AND LAN-TO-WAN EQUIPMENT AND STRATEGIES

Words to Watch

“The dovetailing of LANs into SNA is not a painless, seamless or easy union. It is a process fraught with compromises and contention.”

Anura Guruge
Independent strategic consultant
New Ipswich, N.H.

Link Notes

Bytex Corp. has introduced the Series 7700 Multiplexed Fiber Ring In/Ring Out fiber-optic interface module for its Series 7700 Intelligent Switching hub. The two-port module limits the need for fiber by halving the amount of fiber required to link hubs from four to two strands. That is because the send and receive signals for ring out run on a single piece of fiber.

The module is hot-swappable and can be managed from the vendor's Simple Network Management Protocol-based Network Management System. It costs \$5,995 and is available now.

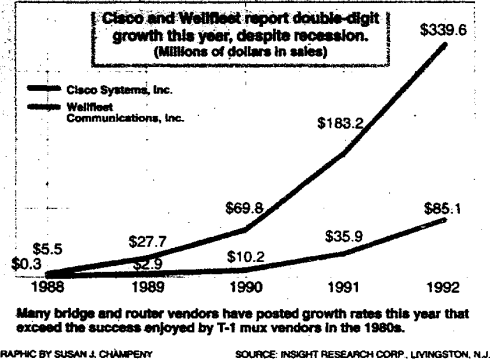
Hughes LAN Systems, Inc. last week added a 10Base2 concentrator module to its Ethernet family of modules for its Enterprise Hub. The new 12-port 312TN occupies a single slot in the hub and provides 12 BNC connections. It offers individual port isolation, internal port termination and an on-board Simple Network Management Protocol agent.

Available now, the 312TN costs \$2,895.

In the second quarter of next year, **SynOptics Communications, Inc.** will release the 3800 Multimedia Router hub module for its Lat-

(continued on page 43)

The darlings of Wall Street



LANNET, others tap into Wellfleet's IN technology

LANNET deal includes two WAN routing modules.

By Skip MacAskill
Staff Writer

HUNTINGTON BEACH, Calif. — Wellfleet Communications, Inc. last week agreed to develop modular versions of its Integrated Node (IN) router for LANNET Data Communications, Inc.'s Multinet LET-36 and LET-10 smart hubs.

This marks the second time in as many months that a hub vendor has teamed with Wellfleet for

expected to be available by the end of the second quarter next year and will include two wide-area network routing modules.

The Integrated Ethernet WAN Router will have two 10Base-T Ethernet ports, and the Integrated Token Ring WAN Router will have one token-ring port.

Both modules will have two synchronous ports that support various WAN interfaces, including frame relay, T-1, Switched Multimegabit Data Service and X.25.

The modules will forward Ethernet traffic at 14,500 packet/sec and token-ring traffic in excess of 10,000 packet/sec.

The module's network protocol support will include the Transmission Control Protocol/Internet Protocol, Digital Equipment Corp. DECnet, Xerox Corp. Xerox Network Systems, Novell, Inc. Internetwork Packet Exchange (IPX) and Apple Computer, Inc. AppleTalk II.

Additionally, both modules will support the Open Shortest Path First, Routing Information Protocol and Open Systems Interconnection's Intermediate System to Intermediate System routing protocol.

Bridging algorithms will also be supported, such as the Spanning Tree Algorithm, Source Routing and Source Routing Transparent.

According to a spokeswoman at LANNET, pricing has yet to be determined for the two routing modules. □

The modules will forward Ethernet traffic at 14,500 packet/sec and token-ring traffic in excess of 10,000 packet/sec.

its IN technology. Bytex Corp. integrated the IN routers into its Series 7700 Switching Hub last month ("Bytex announces routers, ATM strategy for 7700 hub," NW, Oct. 26).

A similar deal with Optical Data Systems, Inc. that also involves the IN technology is expected to be announced next week, according to industry sources.

The first products from the LANNET-Wellfleet alliance are

Resolving AppleTalk WAN routing woes

Protocol faces deficiencies in large router-based internets; consortium formed to address problems.

By Maureen Molloy
Senior Writer

For many users, trying to run AppleTalk across an enterprise-wide internet is like trying to fit a square peg into a round hole.

Apple Computer, Inc.'s routing protocol has long been criticized for its inordinate use of bandwidth, inefficient path selection and poor congestion management capabilities when routing across wide-area net links.

Mike Bailey, a systems integrator at Lockheed Missiles and Space Company, Inc. in Sunnyvale, Calif., is one such critic. When he began designing an AppleTalk net for the aerospace giant, Bailey was told to isolate the AppleTalk nodes to a single Ethernet segment and keep AppleTalk traffic off the company's multiprotocol backbone for fear it would bog down net performance.

"AppleTalk is the odd man out when it comes to corporate net-

working," he said. "No one wants to hear about AppleTalk because it causes too many problems and complicates the network." Although the protocol works well in small departmental work groups, Bailey said it breaks down when large numbers of Macintosh work groups are linked together.

But vendors are now taking strides to resolve the nagging issues users encounter with AppleTalk.

For instance, a consortium of vendors whose roster includes Apple, Cisco Systems, Inc., Novell, Inc., 3Com Corp. and Wellfleet Communications, Inc. will begin working this month to make AppleTalk more sturdy ("Consortium to shape fate of AppleTalk," NW, Nov. 16).

One of the main deficiencies of AppleTalk today is the Routing Table Maintenance Protocol (RTMP), a transport-layer protocol used to create and maintain

(continued on page 21)

CrossComm feature lets routers handle inventory

By Skip MacAskill
Staff Writer

MARLBOROUGH, Mass. — CrossComm Corp. has added a new inventory feature to its network management software package that enables customers to use the company's iLAN Universal Routers to compile information on remote network devices.

The new capability, dubbed Network Inventory, is possible because of enhancements in Version 5.1 of the company's Internetwork Management Software (IMS) and Version 5.04 of the company's bridge/router software that take advantage of the iLAN's Universal Router Architecture (URA).

With URA, each router can maintain a high-speed Address Processor and Directory database, which is a combination of hardware and firmware that has the ability to store information

on as many as 64,000 devices. Net managers can access that information via the software upgrades.

Because the net manager can configure the iLAN router to capture all traffic from the local-area network on which it resides, Network Inventory allows net managers to obtain management information down to the end-node level on any device on any LAN in the corporate-wide net by using a centrally located workstation running IMS 5.1.

Once the routers have been loaded with the new software, managers can click on an icon for an iLAN router and find a wide range of information, including the identity of computers added to the LAN or those moved from one LAN to another, as well as media access control address, Network Basic I/O System name, token-ring adapter type and the

(continued on page 21)

Resolving AppleTalk WAN routing woes

continued from page 17
routing tables on each router.

With RTMP, routers swap their entire AppleTalk routing databases every 10 seconds, consuming excessive bandwidth and prompting frequent logjams on wide-area links.

Apple has developed a protocol to supplant RTMP, called the Apple Update Routing Protocol (AURP), that will enable routers to route AppleTalk over WANs using Transmission Control Protocol/Internet Protocol encapsulation. The AppleTalk packet is cloaked in a TCP/IP envelope, which is discarded when it reaches the router. The AppleTalk identifier is then used on the AppleTalk net at the other end.

AURP's broadcasts are update-based only, thereby letting two autonomous AppleTalk domains be linked without the excessive overhead associated with RTMP. In addition, the AURP updates occur every 30 seconds instead of RTMP's 10-second interval, further trimming traffic congestion on the WAN.

Since many users are looking to reduce the number of protocols they natively route across the WAN, wrapping AppleTalk in TCP/IP would also help eliminate some of the intensive upkeep associated with a multiprotocol network.

Another specification jointly developed by the internet vendors and now embraced by Apple mirrors AURP in that it also encapsulates AppleTalk in TCP/IP and broadcasts routing table updates less frequently. The so-called Dr. Pepper specification is expected to be available by the end of this month, and implementations could be available as early as the first quarter of 1993. One official said Dr. Pepper will likely be merged into the AURP specifi-

CrossComm lets routers do inventory

continued from page 17
type of protocols being used.

Besides allowing users to keep an up-to-date inventory of the LAN, Network Inventory also assists in capacity planning because it provides information on file server loading, line utilization, LAN activity and network topology — essential pieces of information a net manager would need to assess future network requirements.

The feature also enables users to conduct network billing and accounting by collecting and logging net usage information and billing back departments.

"Until now, we couldn't charge back departments for their use of our WAN," said Robert Weiss, a systems engineer at the Kentucky Department of Information Services, who will be using Network Inventory to keep better track of the department's wide-area network. "The new ILAN Inventory feature will solve that problem because it gives us the number of packets sent and received and protocol usage needed for accurate accounting."

Network Inventory will be available in 60 days and comes bundled with ILAN 5.04 and IMS 5.1. Existing users of ILAN 5.04 can obtain a software upgrade to the new feature for \$550. IMS 5.1 is priced at \$4,995. □

cation.

Several vendors already sell routers that offer AppleTalk encapsulation. But without a standard, their routers cannot interoperate with each other.

Fixing other faults

While the Dr. Pepper specification, like AURP, targets one key drawback of AppleTalk, the forum will work together to advance AURP because it aims to resolve a broader scope of AppleTalk's shortcomings.

Other AppleTalk issues that still need to

be tackled include developing better path selection capabilities, better congestion management at the transport layer in AppleTalk nets and better addressing.

The forum will also investigate the possibility of developing a link state protocol like the Open Shortest Path First (OSPF) or the Intermediate System to Intermediate System (IS-IS) protocols for AppleTalk to provide better distribution of traffic and better responses to failed links.

AURP and Dr. Pepper are distance vector protocols that not only transmit frequent routing updates, but also select a

routing path based solely on the smallest hop count between the source and destination node.

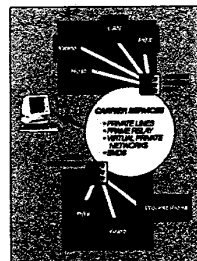
AppleTalk routers based on a link-state protocol such as OSPF or IS-IS, on the other hand, would not send one another entire routing tables, but rather information about which links each router has to adjacent routers.

Once that has been established, only keep-alive messages are sent, along with any routing changes that occur. In other words, updates are made only when the network changes. □

Access System 2000: Freedom Comes With The Ability To Change.

The issues are access and freedom. Access to existing and emerging carrier services — private lines and virtual private networks, frame relay and SMDS. And freedom from communications managers' most recurring nightmare — equipment obsolescence. Access System 2000, Verilink's versatile network access system, gives you the access, the freedom and much more.

T1 Or E1, Frame Relay Or SMDS, You Have The Freedom To Adapt --- And Grow.



Access System 2000 is designed to effectively deal with changing technologies in communications environments notorious for short product life cycles. It gives you intelligent network interfaces, as well as high speed digital applications interfaces. There's DSL/CSI

functionality, of course. And T1 or E1 time-division multiplexing functionality. You get access to today's frame relay networks. And new SMDS networks. All in a compact dual-line package. Or a multi-line, multi-port model that optimizes operational flexibility and expansion.

Extend The Life Cycle Of Your Investment.

Change can be a beautiful thing, particularly when it means return on your investment and not replacement of it. Call us toll-free at (800) 456-0589 for details on Access System 2000. Verilink Corporation, 145 Baytech Drive, San Jose, CA 95134.



VERILINK

Building Tomorrow Into Today's Networks.

Access System 2000 is a trademark and Verilink is a registered trademark of Verilink Corporation.