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## AppleTalk Over X.25 (8/93)

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TOPIC -----

Is it possible to connect two AppleTalk networks using X.25 and two half-routers (like a Shiva TeleBridge)? I understand that this would be much slower than pure LocalTalk, but it might be a nice alternative to a 9600-baud NetModem.

DISCUSSION -----

With the Apple Internet Router 3.0 Wide Area Extension options, you can connect geographically remote workgroups using wide-area telecommunications links. The AppleTalk/X.25 Wide Area Extension (available separately) enables two or more AppleTalk networks to communicate through an X.25 communications link. This wide area extension includes:

- Offers a wide variety of X.25 parameter settings, enabling you to implement the most effective X.25 service.
- Provides a set of standard profiles for the major public packet-switched networks worldwide.
- Allows you to create your own customized profiles for any public or private data network.

Apple's X.25 product, MacX25, can't route AppleTalk over a packet-switched network. You can also explore third-party solutions. Keep in mind that the PDN (Packet Data Network) provider's charges are based on, among other things, the size and number of packets.

One AppleTalk X.25 WAN routing scheme is from Access Privilege, a company in France. Their product named "The Link" is based on the CommToolBox and works with the Apple Internet Router. It provides routing over a variety of links including X.25, and eventually ISDN.

One of the more commonly used AppleTalk tunneling solutions comes from DEC. GatorBox and cisco offer good solutions.

In general, Apple does not control how third parties choose to implement routers and other such products based around AppleTalk. With every

solution, we recommend you check with the supplier to find whether their product serves your needs. It's a good idea to request testimonies and account referrals.

The rest of this article lists third-party router manufacturers who can route AppleTalk over X.25.

Ungermann-Bass, Inc.

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A remote router and software for an AppleTalk hub work with the company's Access/One multiprotocol hub system. The ASM 8320 plugs into the same multiprotocol hub as the company's MaxTalk--a 16-port, twisted-pair AppleTalk hub--to connect physically separated networks over several kinds of media. The router connects sites over standard serial lines, 56-Kbps leased lines, high-speed T-1 lines, or X.25 packet-switched networks at data transfer rates of up to 2.05Mbps.

The two-port version with router software can route packets locally between AppleTalk networks using any combination of LocalTalk, Ethernet or Token Ring. A separate DOS-based management program lets users configure the router to filter and restrict traffic according to protocol type, port number, or source or destination address. Managers also can identify high-priority packets from a particular address or of a certain type that the router will forward immediately.

New MaxTalk software adds AppleTalk Phase 2 support as well as Phase 1-to-Phase 2 routing to the company's combination AppleTalk hub and TCP/IP gateway. Improved security lets network administrators control access to printers and file servers.

cisco Systems, Inc.

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Like other cisco routers, the AGS+ routes a number of protocols, including TCP/IP, DECnet, OSI, XNS, Apollo Domain, Novell IPX, Banyan VINES, 3Com 3+Open, Ungermann-Bass Net/One, X.25, DDN X.25, and AppleTalk. Optional concurrent bridging and source-route bridging are available to handle non-routable protocols such as DEC's LAT and IBM's SNA and NetBIOS. It also supports multiple routing protocols (RIP, IGRP, BGP, EGP, RTMP) and the Simple Network Management Protocol (SNMP) for remote network monitoring.

Proteon Corp

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Proteon Corp offers the ProNet CNX series of RISC-based communications routers. The ProNet CNX series uses a special multiport shared-memory architecture and AMD's (Advanced Micro Devices) 29000 RISC processor. The CNX 500, the first in the series, runs at 25,000 packets per second. The router is intended for IBM SNA/multiple-protocol environments, particularly for work groups needing to move from 16M-bps token ring backbones to 100M-bps Fiber Distributed Data Interface (FDDI) backbones. The device routes IBM-environment messages into IPX (Novell Netware), OSI, DECnet, AppleTalk, XNS, and TCP/IP protocol stacks; it supports T1/E1 lines, X.25, and frame-relay fast-packet switching for WANs.

NCR Comten

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Mainframe vendor NCR Comten sells a line of intelligent communications servers, the Open Network System (ONS), that function as a freestanding OSI-based backbone for large heterogeneous environments. ONS integrates mixed systems to reduce the amount of interconnecting equipment. It allows growth and control of enterprise-wide computing by offering a configurable and scalable system that is built on industry standards: Intel Corp. processors, MicroChannel bus, SCSI connection, and the UNIX System V operating system.

ONS offers concurrent bridging and routing capabilities. It supports AppleTalk, NetBIOS, Netware IPX, OSI, SNA, TCP/IP, and 3Com 3+ XNS protocols. It supports the RS-232 and RS-422 serial, T1, X.25, and SDLC WAN interfaces. It also supports Stp and token ring source-routing.

BBN Communications

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BBN Communications markets the T/200 IPR as part of its internetwork product portfolio. The T/200 is a multi-protocol, multi-media router that supports such protocols as TCP/IP, DECnet, XNS, IPX, AppleTalk, and X.25 in addition to Spanning Tree bridging. The T/20 and T/200 IPRs are a family of products which can be used in the same network or internetwork.

AT&T Computer Systems

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AT&T Computer Systems enhanced its Datakit II Virtual Circuit Switch line by adding token ring support, support for AppleTalk networks, and by including access to multiple hosts. Release 2.0 of the product includes the capacity to relay switch, two-way communication between Datakit terminals and X.25 hosts on public and private packet networks. Disk storage was increased to include support of a 40MB SCSI hard disk and tape subsystem. Current users of the product can upgrade. An optional offering is the Maintenance and Redundancy Control Module, an interface which lets you switch the unit from a primary network to a backup.

To locate a vendor's address and phone number, use the vendor name as a search string.

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