AppleTalk: Connecting to Phone Company New Advanced Services

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TOPIC ---

A customer wants to route AppleTalk into what sounds like an ISDN circuit. Pacific Bell is offering a new service called "Advanced Digital Network" (ADN). This new topology is ready through central offices, and the charge has been approved by the California Public Utilities Commission.

The circuit end points require a third-party device called CSU/DSU (Customer Service Unit/Digital Service Unit).

1) Whose CSU/DSU works?
2) How do I get AppleTalk into the CSU/DSU?

DISCUSSION ---

ADN is a new Pacific Bell Telephone service facilitating high-speed point-to-point communication. It is a 64K digitized voice or 56K bps data DDS (Digital Data Service) line incorporating new, digital, cross switches. These switches are better suited to high-speed digital transmissions than to sending digital information modulated on carrier signals over standard, public, telephone, voice-communication circuits. Note that this service is currently marketed under many different names by other common carriers.

DSU stands for "Data Service Unit," which is the interface to the ADN. It is somewhat analogous to a "digital" modem. The DSUs translate the computer's unipolar serial data to baseband bipolar signals. The DSU uses a DCE interface to communicate with the terminal, and then transmits the data in a special format over the ADN.

CSU ("Channel Service Unit") is sometimes required at the end of some links. The trend today is to incorporate the CSU into the DSU.

AT&T offers many types of DSUs/CSUs. They vary by the data rates they support for use in stand-alone or multiple-mount installations. Installations can run short distances point-to-point in a building or campus environment using LADS ("Local Area Data Sets"), using DSU units, CSU units or combinations of both. These units usually conform to EIA

RS-232-C standards, with data and clock signals that meet CCITT V.35. The DSU DCE-to-terminal interface is full duplex.

Routing AppleTalk packets over ADN should be straightforward. You need an AppleTalk bridge between the Macintosh and DSU. Because the AppleTalk bridges are asynchronous, you also need a commonly-available, asynchronous-to-synchronous converter between the bridge and DSU. Among the bridges, only Telebridge supports data rates up to 57,600 bps; R-Server currently supports up to 19.2K bps. You could substitute an Ethernet bridge for the AppleTalk bridge above if using EtherTalk.

Apple uses many types of links, including Ethernet, LocalTalk, T-1, and fiber. We are not presently using ADN. Data rates can be much higher using T-1 or ISDN lines as compared to ADN.

ISDN lines are not yet a "tariff" service; they are not priced by the California Public Utilities Commission. This doesn't mean ISDN lines are not available. They are and are acquired via contracts, usually making them less cost-effective presently than other services. Additionally, ISDN interfaces are not yet commercially available for the Macintosh.

Because Pacific Bell offers intrastate service, the account may need to contact MCI or AT&T, for instance, to discuss interstate services.

For more details, search the Tech Info Library under "Shiva Corp".

Editor's note 22 June 1992: Removed reference to Solana Electronics.

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