EtherTalk and PacerLink: How They Can Delay Screen Echo

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TOPIC ----------

When using the following elements, I notice delays in screen echo:

- Apple EtherTalk card in a Macintosh II (2MB RAM)
- PacerLink (on Macintosh)
- Pacer (running on a DEC/VMS system)

For example, when typing data, I am forced to wait for the screen to show what was typed. The problem seems to be consistent, regardless of the number of users on the network or VAX. Likewise, the problem is consistent across all 23 Macintosh IIs.

However, the problem does NOT exist when using the Kinetics FastPath. The screen echo is consistent with the interactive mode the user expects. What's the problem?

DISCUSSION ----------

We suspect that you are running into packet routing problems being caused by a remote AppleTalk bridge somewhere on the Ethernet. If there is a slower-speed link somewhere in the Ethernet (perhaps a 9600-baud link between remote sites), and, if that remote site has an AppleTalk bridge anywhere on it, you can get the situation you describe.

The problem arises because AppleTalk is treating the Ethernet as a single AppleTalk network, even though the Ethernet may consist of many networks in a complex setup. Because of this, the Macintoshes directly connected to the Ethernet use whichever bridge on this network was the last one to send an RTMP (Routing Table Maintenance Protocol) packet. Even though the VAX running Pacer software and the Macintoshes are on the same physical cable, a Macintosh cannot send its keystroke packets via that remote bridge, because it has no way of deciding which bridge is "closest" in terms of actual transmission time.

This does not happen when you put a Kinetics FastPath between the Macintoshes and the Ethernet, because the only bridge the Macintoshes get RTMP packets from is the FastPath, and it knows enough about the Ethernet to properly route the keystroke packets directly to the VAX.

One possible solution is to have the Ethernet bridges on the local side of the network refuse to transmit AppleTalk packets. If this is done, then the VAX running the Pacer Software once again begins acting as its own bridge for the Macintoshes directly connected to the Ethernet. The two packet types that you want the bridges to exclude are RTMP (Ethernet type 809b) and AARP (Ethernet type 80f3). You need to consult the documentation for your bridges for instructions on how the bridge excludes packet types from retransmission.

Be aware that stopping these packets from being transmitted over a bridge keeps you from using AppleTalk over the remote link.

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