



# Tech Info Library

## Desktop Network Troubleshooting (10/94)

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TOPIC -----

This quick reference will help you diagnose common connectivity problems in your Local Area Network (LAN). With this information, you can fix the problem yourself, or give support personnel the most helpful information.

The topics include:

- Overview
- LAN defined
- LocalTalk/PhoneNET hardware
- Checking LocalTalk connections
- Checking the Chooser
- LocalTalk hints and help
- EtherTalk hardware
- Checking Ethernet connections
- Checking the Network Control Panel Device (System 6.0.x)
- Checking the Network Control Panel Device (System 7.x)
- EtherTalk hints and help
- Where to get more information

DISCUSSION -----

LAN Defined

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A Local Area Network, or LAN, is made up of computers and shared devices that are physically connected in a limited area. A shared device can be a LaserWriter printer, modem, file server, or print spooler. The two major network types discussed here are LocalTalk/PhoneNET (PhoneNET is a LocalTalk cabling system by Farallon Computing, Inc.) and EtherTalk.

LocalTalk/PhoneNET Hardware

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A LocalTalk/PhoneNET network uses the following hardware:

- 1) Connector module
- 2) Standard phone cable
- 3) Terminating resistor

#### Checking LocalTalk Connections

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Follow these steps to check LocalTalk connections:

- 1) Each Macintosh on the LocalTalk network should have the 8-pin (round) end of the connector module plugged into the Printer port.
- 2) Each shared device on the LocalTalk network should have the 8-pin (round) end of the connector module plugged into the Network (Ø ) port.
- 3) Standard phone cables connect the computers and shared devices in a LocalTalk network. The box end of the connector module has two phone jacks. Either two phone cables, or one phone cable and one terminating resistor, should be attached.

#### Checking the Chooser

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The Chooser can give you valuable information about the network. This section includes a list of questions to help you collect worthwhile information for support personnel. Select Chooser from the Apple menu, and the Chooser window appears. Here are the questions:

- 1) Is the AppleTalk Active radio button selected?
- 2) Do you see the AppleShare icon in the (upper-left) box?
- 3) Do you see any names in the file server (upper-right) box?
- 4) Do you see the name of the file server or shared disk you want in the file server (upper-right) box?
- 5) Do you see any zone names in the AppleTalk Zones (lower-left) box?
- 6) Do you see only a few zone names in the AppleTalk Zones (lower-left) box?
- 7) Do you see your zone name in the AppleTalk Zones (lower-left) box?

#### LocalTalk Hints and Help

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If you're having problems, try these tips:

- Select Shut Down (not Restart) from the Special menu, wait 30 seconds, and then power on. This simple procedure often fixes the problem.

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- Try swapping out the various hardware components (terminating resistor, connector module, and phone cable) one at a time.

WARNING: ALWAYS SHUT DOWN BEFORE MAKING ANY HARDWARE CHANGES.

- Re-install the AppleShare Workstation (System 6.0.x) or File Sharing (System 7.x) software.

### Ethernet Hardware

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An Ethernet network uses the following hardware:

- Ethernet NB Interface Card -or- built in Ethernet AUI (Attachment Unit Interface) port
- Ethernet (coaxial) cable -or- twisted pair (telephone) cable
- BNC T-connector -or- an Apple Ethernet NB Transceiver, often referred to as a "friendly-net connector". Apple Ethernet NB Transceivers are available in two varieties:

Apple Ethernet Thin Coax Transceiver (M0329LL/A)

Apple Ethernet Twisted Pair Transceiver (M0437LL/A)

### Checking Ethernet Connections

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Make sure the basic Ethernet connections are correct:

- 1) Does each Macintosh on the EtherTalk network have an EtherTalk Interface Card installed -or- is using the built Ethernet AUI port?
- 2) Does each Macintosh on the EtherTalk network have the BNC T-connector plugged into the round connector on the installed on the older EtherTalk NB Card -or- a Transceiver plugged into the AUI port on the newer Ethernet NB Card.
- 3) Check the jumper on the EtherTalk NB Card to ensure that the EtherTalk signals go out the right port (preset for AUI). The jumper area is located near the bottom end of the card near the connectors. There are three pins of which the jumper sets over two. With the EtherTalk NB Card face up, and the connectors to your right, when the jumper is on the left two pins the signal goes out the AUI port, and when the jumper is on the right two pins the signal goes out the BNC port.
  - EtherTalk NB Cards are shipped with the AUI port as the default.
  - The Apple AUI port, which looks similar to a video card port is slightly larger.
  - The BNC port. This is a round port, similar to a cable television cable plug.
- 4) Do the network LaserWriters and ImageWriter printers still use LocalTalk? (The EtherTalk network is joined to the LocalTalk network to access these printers by using either a bridge, or router.) See

steps 2 and 3 in the "Checking LocalTalk Connections" section.

- 5) Are coaxial cables connecting the computers and devices in the EtherTalk network? There should be a cable attached to each end of the BNC T-connector -or- the Ethernet Thin Coax Transceiver. If the computer is last on a particular Ethernet segment, the BNC T-connector a cable attached to one end, and a terminator attached to the other end.
- 6) Is the latest Networking software installed? Update your AppleTalk EtherTalk, or TokenTalk software using the latest version of the Network Software Installer disk.

IMPORTANT: You cannot use the older EtherTalk NB Card in a Macintosh Quadra or later. You MUST use either the on-board AUI port or the newer Ethernet NB Card.

#### Checking the Network Control Panel Device (System 6.0.x)

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If you're running System 6.0.x, follow these steps to check your Control Panel device:

- 1) From the Apple menu, select Control Panel.
- 2) Click the Network icon and the Network window appears.
- 3) Is the EtherTalk icon selected? If not, click the icon name to select it.
- 4) Close the Control Panel window.

#### Checking the Network Control Panel Device (System 7.x)

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If you're running System 7.x, follow these steps to check your Control Panel device:

- 1) From the Apple menu, select Control Panel.
- 2) Double-click the Network icon. The Network window appears.
- 3) Is the EtherTalk icon selected? If not, click the icon name to select it.
- 4) Close the Network window.
- 5) Close the Control Panels window.

#### EtherTalk Hints and Help

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Keep these tips in mind when troubleshooting:

- Select Shut Down (not Restart) from the Special menu, wait 30 seconds, then power on again. This simple procedure often fixes the problem.

- Check that the Ethernet Interface Card is seated properly.

WARNING: ALWAYS SHUT DOWN BEFORE MAKING ANY HARDWARE CHANGES.

- Try swapping out the Ethernet Interface Card.
- Re-install the EtherTalk software from the latest version of the Network Software Installer disk.

#### Where to Get More Information

- "Apple EtherTalk NB User's Guide" by Apple Computer, Inc. (030-2216-A)
- "Apple LAN Literacy" by Apple Computer, Inc.
- "Apple Network System Overview" by Apple Computer, Inc.
- "Macintosh Networking Reference" (System 7.0) by Apple Computer, Inc. (030-3936-A)
- "Understanding Computer Networks" by Apple Computer, Inc.

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#### Article Change History:

27 Oct 1994 - Reviewed for consistency and updated format.

21 Dec 1992 - Updated to include new networking software information.

#### Support Information Services

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