



# Tech Info Library

## Power Macintosh: Networking Options (9/95)

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Security: Everyone

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TOPIC -----

I would like to network two Power Macintosh computers together. These computers are located a few houses away from each other. Can we use the built-in networking features of the Macintosh to connect these two computers? What about connecting them via the phone lines?

DISCUSSION -----

You can use the built-in networking capabilities of your Power Macintosh computers to communicate but there are some limits to how far one can run network cabling. You can use Apple's Remote Access (ARA) software to connect your two Macintosh computers via modems.

There are three methods you can use to have your Macintosh computers communicate:

- LocalTalk - directly networking the two computers using LocalTalk via unshielded RJ-11 cabling
- Ethernet - directly networking the two computers using shielded, 10-base-2 (thin coax) Ethernet cabling
- ARA - using Apple's Remote Access software to connect the two computers by modem.

You need to consider required network performance, distance between computers, difficulty in running cabling, and how much money you are willing to spend when choosing which method works best in your situation.

### Additional Hardware Needed

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#### LocalTalk

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The first networking method would require you to purchase a LocalTalk RJ-11 Connector Kit (M1657Z/A) for each computer. This kit is manufactured by Apple

but there are solutions available from third parties.

#### Ethernet

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There are several different Ethernet networking schemes, including 10-Base-T (twisted pair), 10-Base-2 (thin coax), and 10-Base-5 (thick coax). Each have their advantages and disadvantages, but thin coax allows the longest cable length and does not require an additional hardware hub or router making it a good choice for a low cost solution.

To use thin coax, you need to purchase one Apple Ethernet Thin Coax Transceiver (M0329Z/B) for each computer.

You can attach the transceiver directly to the built-in Ethernet port on your Power Macintosh computer. However, if the computer you are connecting to does not have an Ethernet port (all Power Macintosh computers and most Macintosh Quadra computers have an Ethernet port), your neighbor will either need to add Ethernet functionality to his computer (with an Ethernet card) or you will have to use either the LocalTalk or Modem networking scheme instead.

#### ARA

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If you want to use Apple's Remote Access software and existing telephone lines, each computer would require a modem. Although any Macintosh compatible modem will work, modems capable of 14.4 kilobytes per second (kbps) or greater data transfer rates are preferred. You also need to purchase one copy of Apple Remote Access Personal Server software v2.0.1 (M2726Z/B). This software package includes license for one client to log on to your computer. If you want to allow additional users to access your computer, you need to purchase one copy of Apple Remote Access Client v2.0.1 (M5227Z/B) for each user.

#### Cabling

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Depending on which method you choose, you will need specific cabling.

#### LocalTalk

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LocalTalk uses unshielded, RJ-11 cable. This type of cable is similar to regular phone cable. However, it would be best to purchase this cable from a computer cable shop as one continuous cable without any extending connectors.

The problem you may encounter with this method is that RJ-11 cable is usually unshielded against external interference. This means the two computers may have difficulty communicating with one another due to outside interference, such as nearby broadcasting transmitters or high-voltage power lines. However, you may be able to locate shielded RJ-11 cabling for greater reliability. The maximum limit on cable length using this method is approximately 1000 feet. Repeaters can also be used if distances are greater, or if you are experiencing weak signals. The longer your cabling, the more likely you are to encounter interference.

#### Ethernet

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Ethernet is considerably faster than LocalTalk. Thin coax Ethernet uses shielded coax cable, similar to cable used by most cable television installers. Be sure to use RG-58 Ethernet cabling, not the RG-62 used by most cable TV installers. RG-58 cable is less susceptible to interference. The overall cable length of this type of network is approximately 600 feet.

ARA

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No additional cabling is necessary since you are using modems and existing phone lines.

Part numbers mentioned in this article are accurate as of this writing. Before ordering, verify that they are still correct as they are subject to change.

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