Network Time

Version 2.0

A program to automatically set the time of day on your Macintosh®
using the Apple® MacTCP® network software

Shareware brought to you by
Pete Resnick

Table of Contents

Introduction to Network Time

Network Time is a control panel program that sets the clock on your Macintosh computer to the correct time of day. To do this, Network Time contacts a *time server* using the Apple MacTCP network software to get the correct time of day. Network Time automatically adjusts your clock taking into consideration the time zone and the daylight savings time rules that you configure using the Network Time control panel.

You can use Network Time on any Macintosh from the Macintosh Plus right up to the Macintosh Quadra™ (and anything in between). Network Time requires at least system software version 6.0.5, but it is "System 7 Savvy"™ and has many of the new System 7 features available. You must also have installed on your Macintosh the Apple MacTCP network software version 1.1 or later. Finally, Network Time requires network access to a computer running a time server; the function of the time server will be described in the configuration portion of this manual.

## Installing Network Time

Network Time is very easy to install. Drag the Network Time control panel icon onto the icon of your System Folder on your startup disk. Using System 6, this will put the Network Time file in the proper place to access it using the Control Panel. Under System 7, you should get the following message:
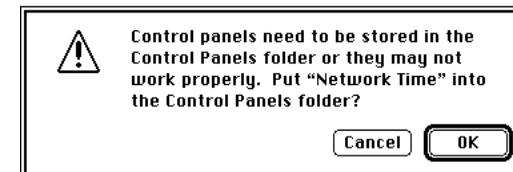
Simply click "OK" to install Network Time into your Control Panels Folder.
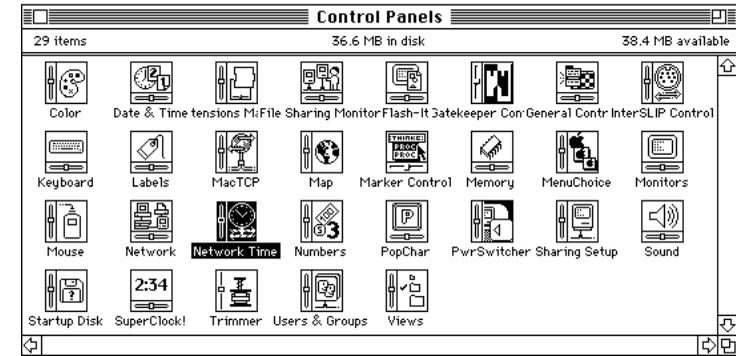
In either System 6 or System 7, the Network Time control panel should initially appear as it is shown here:
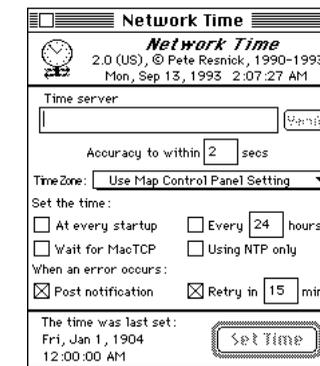
▲ **Note** Unlike earlier versions of Network Time, there is no default time server specified in the "Time server" box and most of the checkboxes are left unchecked when you first open Network Time. This is purposeful; please configure these settings as indicated in the next sections. ▲

Configuring the time server

The first thing you need to configure for Network Time is the "Time server" box. In this box, you must type the domain name (like "timeserver.domain.edu") or numeric Internet address (like "1.2.3.4") of a computer on your network that Network Time can query for the time of day. Network Time is able to use two protocols to converse with time servers: The Network Time Protocol (NTP) version 3, which is documented in the Network Information Center Request For Comments 1305 and the older Time Protocol (TIME), documented in

3

verification process, the appropriate error message will be displayed instead. More than one address may be associated with a given domain name (like a machine with multiple network connections or a canonical name for multiple machines). Network Time will use up to four of these addresses and will display them in the dialog box.

Configuring the time zone

After you have configured your time server, the next step is to configure the time zone in which your Macintosh is located. The time that Network Time gets from the time server is given in Universal Time, commonly called Greenwich Mean Time. When Network Time sets the clock on your Macintosh, it must know the difference between Universal Time and local time.

Network Time initially is configured to use the time zone that is set up in the Map control panel provided with your system software.[2] The Map control panel sets a value in *parameter RAM,* a special memory chip that keeps its settings even when the computer is turned off. Every time Network Time sets the clock on your Macintosh, it will read the time zone information from parameter RAM to calculate the current local time. If you wish to use leave Network Time configured to read the value in parameter RAM, make sure you have correctly set the time zone in the Map control panel before using Network Time.

▲ **Note** When Network Time is configured to use the Map control panel setting, it cannot automatically update the clock for daylight savings (summer) time. When daylight savings time goes into effect, you must change the value in the Map control panel to correctly reflect the current difference between local time and Universal Time.[3] ▲

If you would prefer to have Network Time automatically update for daylight savings time and set the value in parameter

---

[2] With the release of Apple PowerTalk, settings for the time zone have been moved to the Date & Time control panel.

[3] The new Date & Time control panel has a checkbox for this purpose.

```
Set the time:
☐ At every startup      ☐ Every  24  hours
☐ Wait for MacTCP       ☐ Using NTP only
```

The first three options specify when Network Time should set the time:

1. *At every startup.* When you check this box, Network Time will set the time every time you start up your Macintosh. Network Time will always wait for all extensions to load before attempting to set the time.

2. *Every ✘ hours.* When you check this box, Network Time will set the time after the number of hours you specify have elapsed since the last time the clock was set. You can change the number of hours by typing in the box. Network Time will accept values between 1 and 596 hours. The amount of time until the next setting of the clock is kept track of even when your Macintosh is turned off. So, if you have Network Time configured to reset the time "Every 24 hours" and only 12 hours have elapsed from the time the clock was last set when you restart your Macintosh, Network Time will wait an additional 12 hours to set the time.

3. *Wait for MacTCP.* This is a special setting which is useful to users who have dial-up MacTCP connections (like PPP, SLIP, and AppleTalk® Remote Access) or for those users who sometimes restart their Macintosh when it is not connected to the network. If you are in one of these categories, it might be problematic for Network Time to attempt to set the time before you have a chance to connect your machine to the network since this would cause MacTCP initialization to fail. When this box is checked, Network Time will always wait for another application to open MacTCP before it attempts to set the time.

newer Network Time Protocol. If the box is unchecked, Network Time will try NTP first, and if that doesn't work will then try the old TIME protocol. If you have an NTP server available, selecting this option is a good idea. That way, if the server is down for some reason, you will not try to get a less accurate time from the old protocol.

Telling Network Time what to do if an error occurs

Sometimes an error may occur when Network Time is trying to set the clock on the Macintosh; the network may be down, the time server may not be ready to receive requests, or Network Time may not have enough memory to operate in. When an error occurs, there are two things you can have Network Time do.
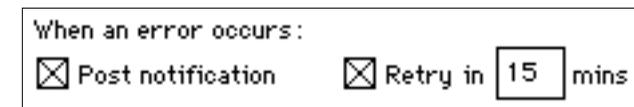
1. *Post notification.* When this box is checked, Network Time will display a "notification" alert on the screen with a description of the error that occurred. Most of these are self-explanatory, but even if an error occurs that Network Time does not expect, you will get at least some information to send to the author. Some Macintosh applications (such as dedicated file servers) have trouble working when error alerts are displayed, so you do have the option to turn this feature off. However, if you are usually in front of your machine when it is on, it is strongly recommended that you leave this option turned on so that you can diagnose potential problems.

2. *Retry in ✗ minutes.* When this box is checked and an error occurs while setting the time, Network Time will wait the specified number of minutes and then attempt to set the time again. Network Time will accept any value between 1 and 35,971 minutes.

▲ **Note** While the Network Time control panel is open, Network Time will not attempt to set the clock automatically; it will always wait until the control panel is closed to resume normal operations. ▲

Setting the time manually

At the bottom of the control panel window is a button labeled "Set Time". To set the time manually, simply click on this button or press the Return key on your keyboard.

The time was last set:
Thu, Aug 5, 1993
11:53:50 AM   **Set Time**
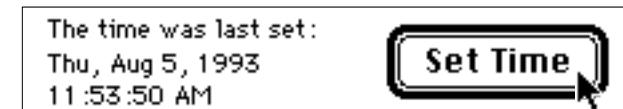
▲ **Note** The "Set Time" button is disabled if MacTCP is not installed on the Macintosh, or if there is no time server address in the "Time server" box. ▲

When you click this button, Network Time will verify the address of the time server if it has not already been verified, and then will set the clock on your Macintosh. While it is setting the time, a dialog box will be displayed:

Setting the Macintosh clock ...

Type ⌘-. to cancel and return to the control panel.
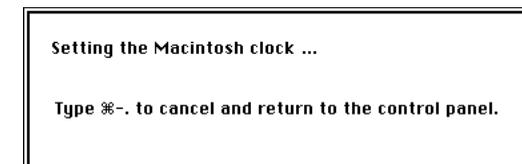
If you wish to cancel the operation, hold down the command key and type a period.

When setting the clock manually, Network Time does not behave exactly as it does when it sets the time in the background. First of all, Network Time will not honor the setting of the "Wait for MacTCP" checkbox; when you click the "Set Time" button, Network Time will immediately try to

11

Appendix A: Adding and changing time zones

The time zones for the mainland United States are available in Time Zone pop-up menu in the Network Time control panel. But you may live in an area for which there is no time zone listed, and the rules for time zones change from time to time. This section describes how to add time zones to the Network Time control panel and how to change the time zone rules for any time zone in the list.

Viewing the time zone list dialog

To make any changes to the time zones, you first must open the time zone list dialog box. To do so, select "Add/Change Time Zones…" from the Time Zone pop-up menu in the Network Time control panel.
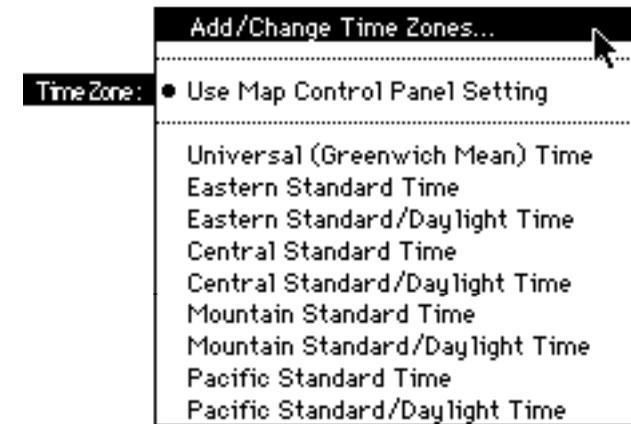

After a few seconds, Network Time will have read all of the time zone information into memory and the time zone list should appear. All of the time zones that Network Time knows about will be displayed in the list.

minutes and seconds boxes. Also, click on the button labeled "Universal Time -" to indicate that this is less than Universal Time.
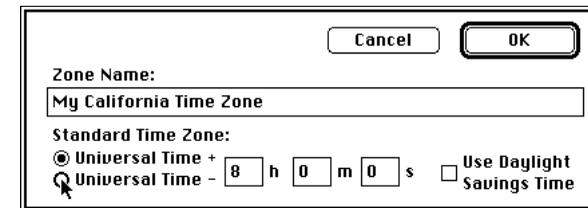
If the time zone you are in does not observe daylight savings time, simply click the OK button to confirm the new time zone settings. If you don't want to use this time zone configuration, simply click Cancel. If you click OK, the new time zone will appear in the time zone list.
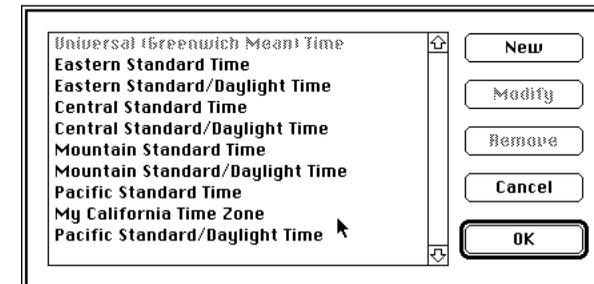
Notice that new time zones don't appear in the list in alphabetical order. Zones are always sorted in the list by the number of hours from Universal Time that the time zone uses. The Universal Time zone always appears first, followed by time zones which are less than Universal Time, from -1 hour to -12 hours, and then by time zones which are greater than Universal Time, from +1 hour to +12 hours.

Configuring for daylight savings time

If you want to create a time zone which uses daylight savings time, click in the box labeled "Use Daylight Savings Time" in

15