



Unibrain The FireWire Innovators

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Febrouary 2000

Dear FireNet™ Customer,

Thank you for purchasing Unibrain's FireNet™ software for Macintosh. This is FireNet™ Version 2.0.

FireNet™ is THE FIRST AND ONLY FireWire™ Networking Solution for Windows and Mac. A system independent software product that gives you full Ethernet compatibility at 400 Mbps speeds. The following are some features and characteristics of the Macintosh Version:

- Supports TCP/IP and AppleTalk.
- The FireWire Bus can be used simultaneously for other purposes (e.g. DV Camera, FireWire Hard Disk, FirePrint etc.).
- No hubs, no routers, no complicated cabling, no complex installations.
- Slows down, but does not collapse (like Ethernet) when overloaded.
- 100% Compatible with any Mac equipped with any host PCI FireWire board.
- 100% compatible with any G3, G4, iMacDV, PowerBook, iBook with build-in FireWire support.
- Fast and Easy installation
- Requires Mac OS 9.x
- Requires FireWire Support 2.5 or FireWire Support 2.7 that is included in the Mac OS 9.1.
Please notice that in case of a 1394 network interconnection between MAC(s) and PC(s), the FireWire Support 2.5 is specifically required.

The FireNet documentation includes the following main topics:

- Technical Support Information.
- FireNet™ Installation.
- FireNet™ User Guide.
- FireNet™ Benchmark

Additional support is available through a dedicated email address manned by Unibrain's 1394 technical support staff.

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Technical Support Information

Technical Support is available by phone or email.

Email: Direct all technical support questions to support@unibrain.com.

Phone:

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(USA) +1-925-866-3000

Europe & Asia
(GREECE) +30-1-6756320

Introduction

The purpose of this document is to explain you in detail the required procedure in order to setup and operate the FireNet™ product on a Macintosh Computer.

It is required to have a FireWire Network, consisted of a set (at least two) of MACs equipped with the FireWire interface.

Given that your have already setup your host Mac, you are ready to setup the FireNet™ application. **Please recall that the host Mac operating system should be 9 or above and that the FireWire support and enabler files must be 2.5 or above.**

You can download the 2.5 version from:

<http://asu.info.apple.com/swupdates.nsf/artnum/n11838?OpenDocument>

The FireNet™ software you are about to install is a complete, fully functional, unauthorized version of FireNet™ software. As such, it will operate with all its features for 30 minutes between reboots. It is important to note that when a version of FireNet stops working after its time limit, it does not affect the rest of the user's computer operations in any way. The user is required to reboot if he wishes to re-enable FireNet for another 30 minutes.

To enable unrestricted use of the FireNet™ software, a "Name" and "Product Key" per station is required. You can purchase product keys online at the [1394 Store](#) or from any [distributor](#), in order to enable FireNet™ to run continuously.

Setup Checklist

Before continuing with the FireNet™ installation please verify that:

Check No.	Description	Check? (✓)
1	Your Macintosh operating system is MacOS ver 9 or later.	
2	Make sure that the files FireWire Support ver. 2.5 and FireWire Enabler ver. 2.5 are installed into the Extensions folder in System Folder . These files are distributed by Apple from: http://asu.info.apple.com/swupdates.nsf/artnum/n11838?OpenDocument	
3	Your Mac has FireWire™ (IEEE-1394) interface.	

Now you can proceed with the setup of the FireNet™ application

FireNet and the “ Personal File Sharing bottleneck”

FireNet is optimized to function in its full speed potential in Macintosh networks where Apple's Appleshare IP, or Mac OS X (to be released March 24) or Microsoft's Windows 2000 server is used. Using one of these Servers gives FireNet the ability to bypass the “Personal File Sharing bottleneck” and perform up to 4 times the speed of Fast Ethernet by using pure TCP/IP.

If you connect your Mac workstations in a network where one of the above-mentioned servers is not present, then you rely totally on the performance of Personal File Sharing, which unfortunately functions as a bottleneck for high-speed data transfers. Similar low transfer rates will result by the use of the Personal TCP/IP which is also based on Personal File Sharing. In such cases you should not expect FireNet to be any faster than Fast Ethernet.

FireNet will also perform better in fast machines. This means that if you compare FireNet's performance on an older G3 desktop to that of a G4 500 you will see significant improvement in data transfer. You should also keep in mind that since FireNet's bandwidth is much greater than Fast Ethernet's, you can connect more Macs to the network before it becomes saturated.

FireNet™ Installation

Installation of the unauthorized version

As is already mentioned the FireNet™ software that you are about to install and use is a complete, fully functional, unauthorized version. As such, it will operate with all its features for 30 minutes between reboots. To enable an unrestricted use of the FireNet™ software in your Macintosh you need to enter a "Name" and "Product Key" per station as described in the next section entitled "Authorization procedure".

In order to make a fully authorized FireNet™ installation you first install this complete, fully functional but unauthorized version (time limited usage for 30 minutes) and then you authorize the application by getting from Unibrain the respective Product Keys.

The procedure to install the unauthorized version is simple and straightforward as described in the next steps:

1. Run the "FireNet™ Installer" application and follow the instructions on the dialogue boxes. The "FireNet™ Installer" application will install all the required FireNet™ software into the "**Extensions**" folder of your Mac and the FireNet™ Authorization application and FireNet™ Documentation into the "**FireNet Folder**" or any other folder of your choice.
2. Restart your Macintosh.
3. Select from the **Control Panel->AppleTalk->Connected via:** the option "**FireNet slot 0**". If you have a newly installed OS then this option will be chosen automatically.

Now you are ready to practice and evaluate the complete, fully functional but unauthorized version of FireNet™ application for only 30 minutes. When the time elapses you will be informed for the inability of network communication via FireNet™ and you will have to reboot your Mac for another 30 minutes of usage etc.

In order to authorize your FireNet™ application and have unlimited usage please follow the next simple authorization procedure described in the next section.

Authorization procedure

To enable an unrestricted use of the FireNet™ software, a unique "Name" and "Product Key" combination per station is required. You can purchase Product Keys [online](#) or at any local distributor, in order to enable FireNet™ to run continuously.

Please notice that you need a unique Product Key for each Macintosh, member of your FireNet™ network ! In case that you have accidentally two or more Mac's with the same Product Key the FireNet™ application will not function.

After having purchased the **Product Key** per station you must run the **Unibrain FireNet™ Authorization** application (please refer to **figure 1**) located into your "**FireNet™ Folder**". Enter the **Name** and **Product Key** in the appropriate fields and press OK. The application will display a message indicating if the operation was successful or not. **If the operation was completed successfully, then you must Reboot before using the FireNet™ application.**



The image shows a Macintosh-style dialog box titled "Unibrain FireNet Authorization utility". Below the title, it displays the copyright "Copyright © Unibrain 2000-2001", the website "www.unibrain.com", and the email "ubinfo@unibrain.com". There are two input fields: "Name:" followed by a single-line text box, and "Product Key:" followed by a four-part box where each part is a small text box separated by hyphens. Below these fields is a block of instructional text explaining the purpose of the utility and the consequences of not having a product key. At the bottom, there are two buttons: "OK" and "Cancel".

Unibrain FireNet Authorization utility
Copyright © Unibrain 2000-2001
www.unibrain.com
ubinfo@unibrain.com

Name:

Product Key: - - -

To enable an unrestricted use of the FireNet™ software on your Macintosh you need to enter a "Name" and "Product Key" per station as described in the section entitled "Authorization procedure" of the FireNet™ documentation.
If you don't have a "Product Key" click "Cancel" to use FireNet™ with all its feature for 30 minutes between restarts.

Figure 1: Unibrain FireNet Authorization Utility

FireNet™ User Guide

After successfully installing the FireNet™ for Macintosh, you are ready to use its powerful features over AppleTalk or TCP/IP:

Please give special attention to your Macintosh FireWire network topology. In case that you have more than two Macs please use tree topology avoiding any closed-loop connection. IF ANY CLOSED-LOOP CONNECTION IS CREATED INTO YOUR NETWORK, THE FIREWIRE PROTOCOL (AND CONSEQUENTLY FIRENET™) WILL FAIL!

AppleTalk

In order to use FireNet™ over the AppleTalk protocol, please follow the next simple steps:

1. Open **Appletalk** Control Panel and from the "Connect via:" list box, select the respective connection option according to the FireWire™ interface that your Mac is equipped with. So if you have built-in FireWire™, select the " FireNet built-in" option (see **figure 2**), if your Mac has an add-on FireWire™ board, select the " FireNet slot 1" option (see **figure 3**), while if your Mac has a second add-on FireWire™ board, select the "FireNet slot 2" option, etc.
2. Close **Appletalk** and save settings.
3. Open **Chooser** and select AppleShare icon. Any available Macintosh computers running FireNet that have enabled File Sharing should be listed and the user can be connected to any of them.

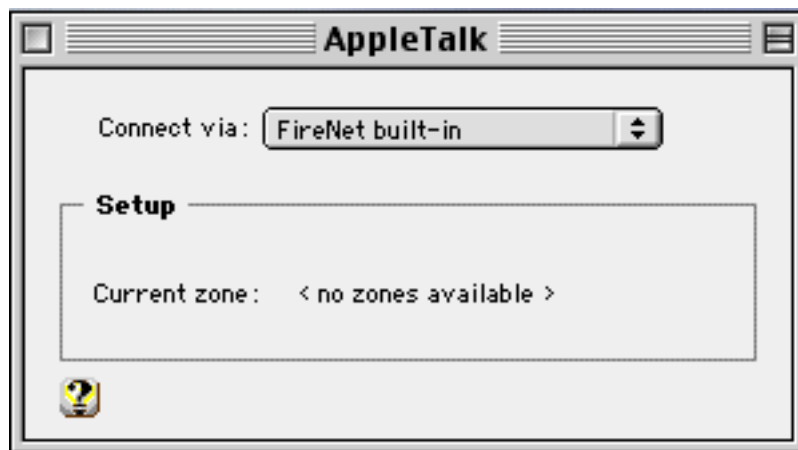


Figure 2: Using FireNet™ over the AppleTalk protocol with built-in FireWire™.

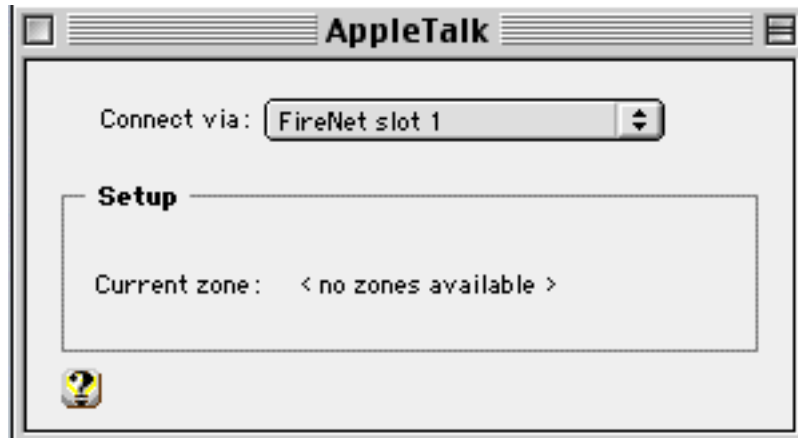


Figure 3: Using FireNet™ over the AppleTalk protocol using the first FireWire™ extension board.

TCP/IP

In order to use FireNet™ over the TCP/IP protocol, please follow the next simple steps:

1. Open **TCP/IP** Control Panel and in the "Connect via:" list box, select the respective connection (e.g. "FireNet built-in") as depicted in the next **figure 4**.
2. Close **TCP/IP** and save settings.
3. Run any application that requires TCP/IP protocol.

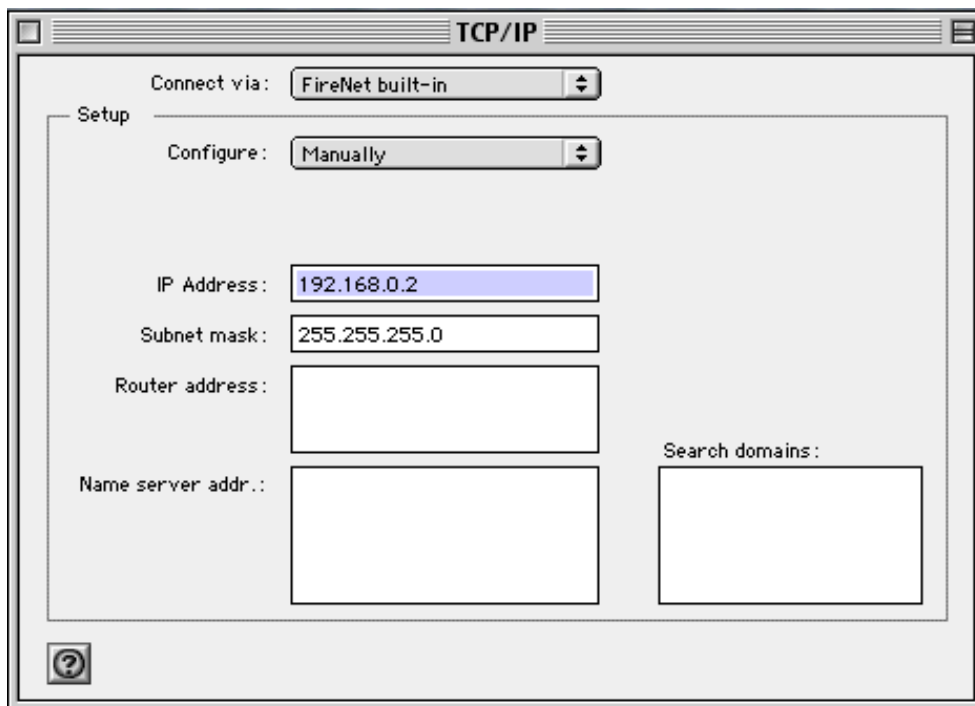


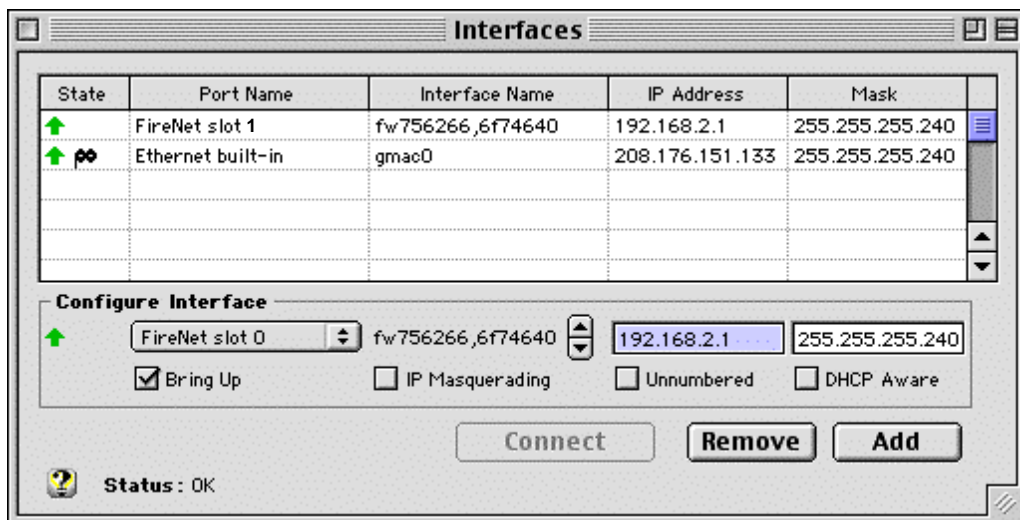
Figure 4: Using FireNet™ over the TCP/IP protocol.

IPNetRouter Configuration with FireNet and Ethernet

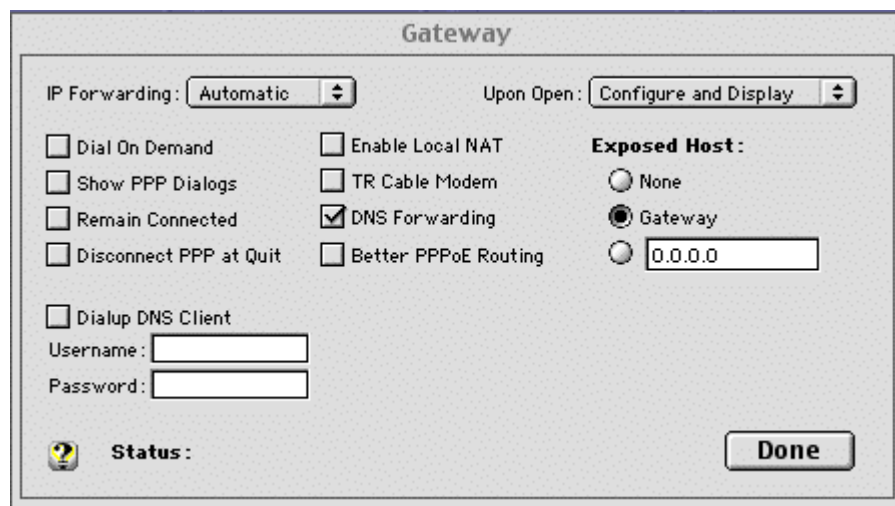
This paragraph describes the required procedures in order to configure your Mac equipped with both Ethernet and FireWire interfaces, to operate as a router. This means that will play the role of the "go-between" for the two networks. To do so you will need the IPNetRouter Software from Sustainable Softworks.
<http://www.sustworks.com/>

Please follow the next steps for the configuration of the Mac being the "router":

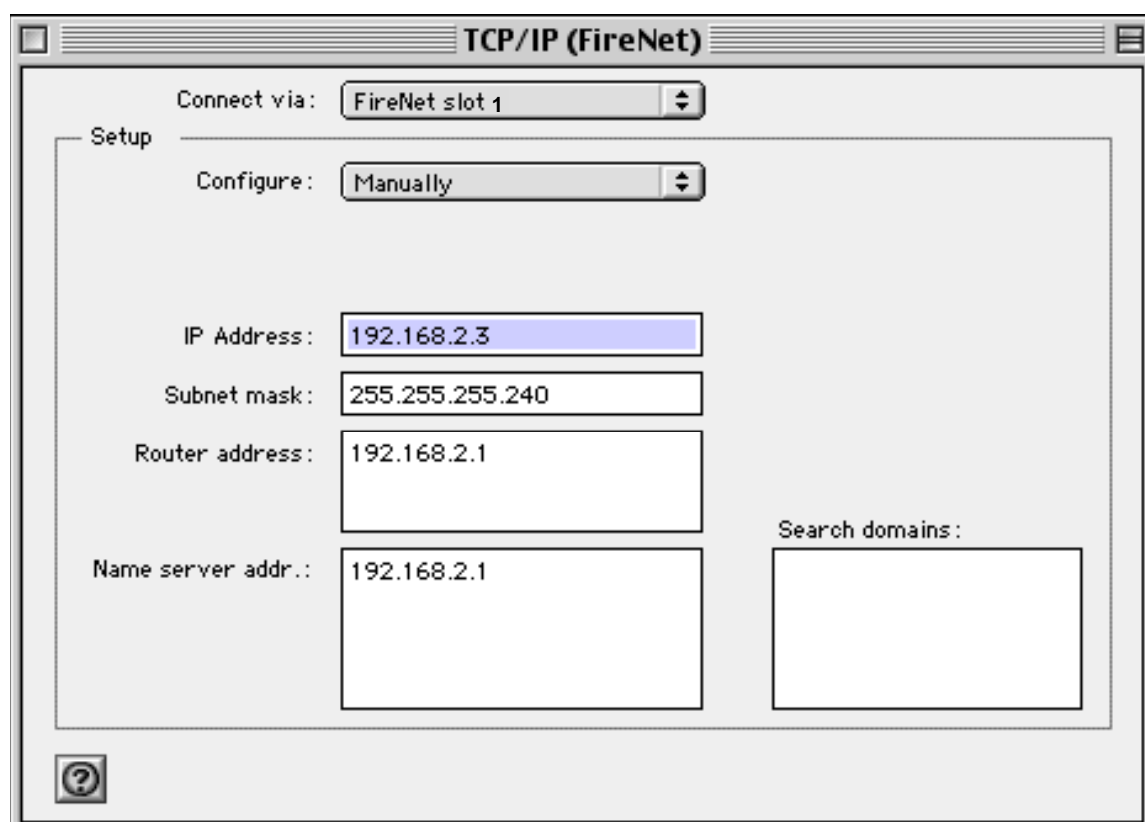
- Set up your TCP/IP Ethernet connection as normal, and if it is to a DSL/Cable Modem connection see your provider for the settings, in the TCP/IP control panel.
- Launch IPNetRouter, in the Interfaces window click on the top row showing your Ethernet port IP address. With this row selected, check the "IP Masquerading" box and then press the "ADD" button.
- Next you need to add your FireNet IP Interface. Using the "Configure Interface" area choose FireNet slot, check the "Bring Up" box and then enter a private IP Address and Mask. Note these choices, as you will need this information when configuring your other Macs.



- Next select the Gateway window for IPNetRouter and in "IP Forwarding" select Automatic. Also check either "TR Cable Modem", "DNS Forwarding" or "Better PPPoE Routing" depending on your Ethernet connection. Please see IPNetRouter's Manual for more information on this.



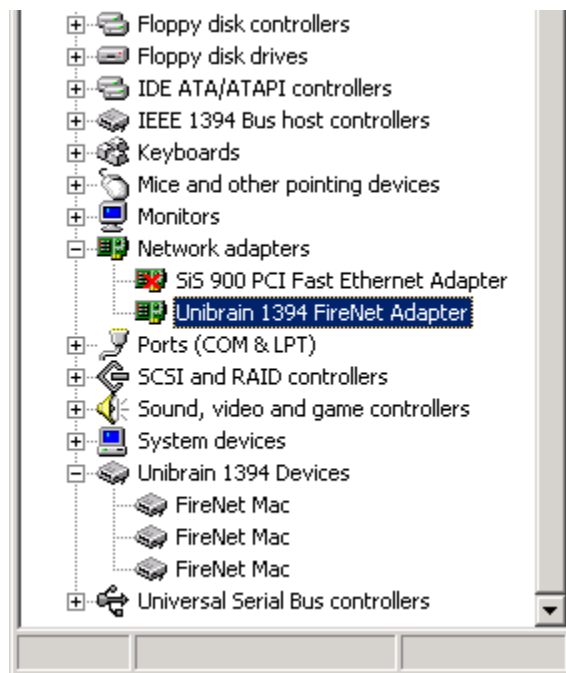
On your Macs that will be using FireNet to connect to the Mac that you just set up with IPNetRouter open the TCP/IP control panel. From “Connect via” choose FireNet slot, then from “Configure” choose Manually. For your “IP Address” enter in the same IP as you use for the FireNet IP Address in IPNetRouter changing only the last number making it unique for each Mac. The “Subnet mask” will be the same as from the IPNetRouter. In “Router address” and “Name server addr.” you will enter the IP Address from the IPNetRouter FireNet info.



Appendix A: Benchmarks for FireNet™

This paragraph presents an overview of the performance of FireNet™ for the Mac operating systems.

The next test was performed with the use of a Windows 2000 Server (with PIII at 1 GHz/256 MB Ram, Ultra ATA 100 HDD) and 3 Apple G4 clients, which gradually connected to it, each running the **Helios Lan Test**. Below you can see the Server Device Manager, which show the 3 Mac G4 clients under the “Unibrain 1394 devices” group.



The graph below was also captured from the server's Performance Monitor. You can notice how the network performance increases up to 24Mbytes/sec as more and more clients connect.

