



VPN Configuration Guide

Linksys® RV042/RV082

Revision 1.0.7

equinux AG and equinux USA, Inc.

© 2006 equinux USA, Inc. All rights reserved.

Under the copyright laws, this manual may not be copied, in whole or in part, without the written consent of equinux AG or equinux USA, Inc. Your rights to the software are governed by the accompanying software license agreement.

The equinux logo is a trademark of equinux AG and equinux USA, Inc., registered in the U.S. and other countries.

Every effort has been made to ensure that the information in this manual is accurate. equinux is not responsible for printing or clerical errors.

Created using Apple Pages.

www.equinux.com

Apple, the Apple logo, iBook, Mac, Mac OS, MacBook, PowerBook are trademarks of Apple Computer, Inc., registered in the U.S. and other countries.

Finder and Mail are trademarks of Apple Computer, Inc. AppleCare is a service mark of Apple Computer, Inc., registered in the U.S. and other countries.

FileMaker is a trademark of FileMaker, Inc.

equinux shall have absolutely no liability for any direct or indirect, special or other consequential damages in connection with the use of the quick setup guide or any change to the router generally, including without limitation, any lost profits, business, or data, even if equinux has been advised of the possibility of such damages.

Introduction.....	5
Prerequisites.....	6
Scenario.....	7
Task 1 – Configure your Linksys RV042/RV082 router.....	9
Step 1 - Add a new VPN Tunnel.....	10
Step 2 - Configure your Group VPN Tunnel.....	12
Task 2 – Configure VPN Tracker.....	14
Step 1 - Create a new Connection.....	14
Step 3 - Network Settings.....	16
Step 4 - Authentication Settings.....	17
Step 5 - Identifiers Settings.....	18
Task 3 - Check the VPN connection.....	19
It's time to go out!.....	19
Test your connection.....	19
Troubleshooting.....	21
What's next?.....	22
Introduction.....	22
Known Limitations.....	22
Accessing Files.....	23
Accessing a FileMaker Database.....	25
Acquire more Licenses.....	29

Introduction

This document describes how VPN Tracker can be used to establish a connection between a Macintosh running Mac OS X and a Linksys RV042/RV082 VPN router.

The Linksys RV042/RV082 gateway is configured as a router connecting a company LAN to the Internet.

This paper is only a supplement to, not a replacement for, the instructions that have been included with your Linksys RV042/RV082. Please be sure to read those instructions and understand them before starting.

EQUINUX SHALL HAVE ABSOLUTELY NO LIABILITY FOR ANY DIRECT OR INDIRECT, SPECIAL OR OTHER CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE HOW-TO OR ANY CHANGE TO THE ROUTER GENERALLY, INCLUDING WITHOUT LIMITATION, ANY LOST PROFITS, BUSINESS, OR DATA, EVEN IF EQUINUX HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Prerequisites

First you have to make sure to use a recent Linksys RV042/RV082 firmware version. The latest release for your Linksys RV042/RV082 firewall can be obtained from <http://www.linksys.com/>

For this document, firmware version 1.3.7.2 has been used.

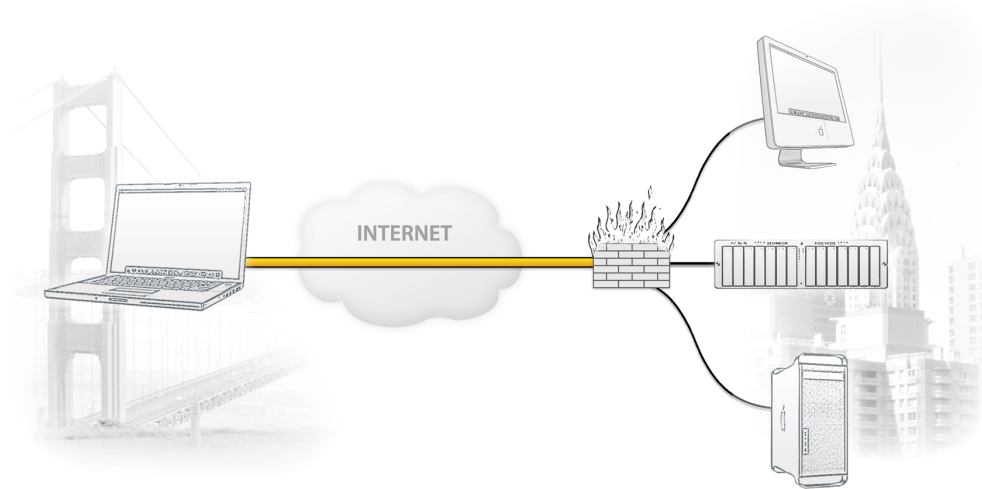
Please note: VPN Tracker has been only been tested with the Linksys RV042/RV082 and the above firmware version.

You will need one VPN Tracker Personal Edition license for each Mac connecting to the Linksys RV042/RV082.

We recommend one VPN Tracker Professional Edition for the administrator's Mac in order to export configuration files to the clients. VPN Tracker is compatible with Mac OS X version 10.2.5+, 10.3 and 10.4.1+

Scenario

In our example, we need to connect an employee's Mac Book in San Francisco to an office in New York. The following diagram illustrates this scenario:



The MacBook is directly connected to the Internet and has a public IP address, assigned by an ISP.

The office's VPN gateway is also connected to the Internet and can be accessed via an static IP address. The VPN gateway also has a second interface which is connected to the internal office network. In our example, the office network has the IP range 192.168.1.0/24.

A VPN tunnel will be established between the public interfaces in San Francisco and New York. Once the VPN tunnel is up, San Francisco can access the office network behind the VPN gateway.

Please note that the connection from a MacBook at home to an office network is just one possible scenario. The instructions also apply to connections from a desktop computer or notebook in your office to a VPN gateway at home or at another office. Please adapt the term "office network", which is used throughout this manual, to your scenario.

Task 1 – Configure your Linksys RV042/RV082 router

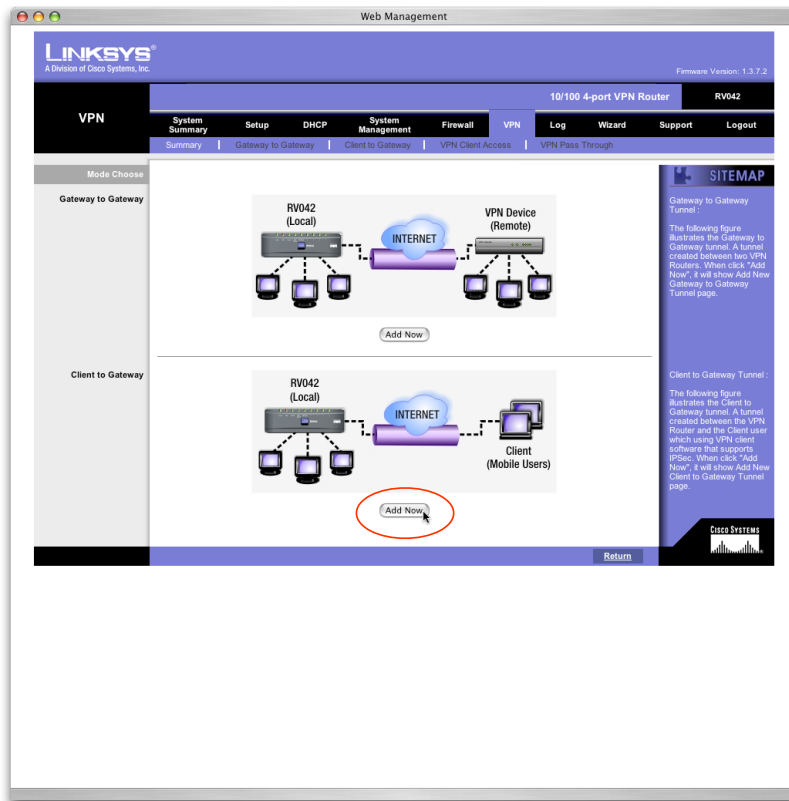
This section describes the configuration of your Linksys RV042/RV082 VPN router.

TIP When setting up a VPN, you'll have to handle a couple of parameters. Those parameters are marked with red dots with little numbers in it. Throughout the setup we will point back to those parameters.

Step 1 - Add a new VPN Tunnel



► Click on "Add new Tunnel".



- Below the “Client to Gateway” diagram, click on “Add now”.

Step 2 - Configure your Group VPN Tunnel

The screenshot shows the Linksys Web Management interface for a 10/100 4-port VPN Router (RV042). The 'VPN' tab is selected, and the 'Add a new Group VPN' section is active. The 'Group VPN' radio button is selected and circled in red. The configuration fields are as follows:

- Group No.:** 1
- Group Name:** (empty)
- Interface:** WAN1
- Enable:** ☒
- Local Group Setup:**
 - Local Security Group Type:** Subnet
 - IP address:** 192.168.1.0
 - Subnet Mask:** 255.255.255.0
- Remote Client Setup:**
 - Remote Client:** Domain Name(FQDN)
 - Domain Name:** (empty)
- IPSec Setup:**
 - Keying Mode:** IKE with Preshared key
 - Phase1 DH Group:** Group1
 - Phase1 Encryption:** DES
 - Phase1 Authentication:** MD5
 - Phase1 SA Life Time:** 28800
 - Perfect Forward Secrecy:** ☒
 - Phase2 DH Group:** Group1
 - Phase2 Encryption:** DES
 - Phase2 Authentication:** MD5
 - Phase2 SA Life Time:** 3600
 - Preshared Key:** (empty)

At the bottom, there are buttons for 'Advanced +', 'Save Settings', and 'Cancel Changes'.

► Select "Group VPN".

Web Management

LINKSYS
A Division of Cisco Systems, Inc.

10/100 4-port VPN Router RV042

VPN

System Summary Setup DHCP System Management Firewall VPN Log Wizard Support Logout

Summary Gateway to Gateway Client to Gateway VPN Client Access VPN Pass Through

Add a new Group VPN

Group No. [] Group VPN

Group Name [vpntracker]

Interface [WAN1]

Enable ☒

Local Group Setup

Local Security Group Type [Subnet] [2]

IP address [192] [168] [1] [0]

Subnet Mask [255] [255] [255] [0]

Remote Client Setup

Remote Client [Domain Name(FQDN)]

Domain Name [vpntracker]

IPSec Setup

Keying Mode: IKE with Preshared key

Phase1 DH Group [Group1]

Phase1 Encryption [DES]

Phase1 Authentication [MD5]

Phase1 SA Life Time [28800]

Perfect Forward Secrecy ☒

Phase2 DH Group [Group1]

Phase2 Encryption [DES]

Phase2 Authentication [MD5]

Phase2 SA Life Time [3600]

Preshared Key [secretkey]

Advanced +

Save Settings Cancel Changes

SITEMAP

Group No.: The group no. will be generated automatically from 1-2. Two GroupVPNs are supported by RV042.

Group Name: Enter the Group ID Name. Such as, American Sales Group.

More...

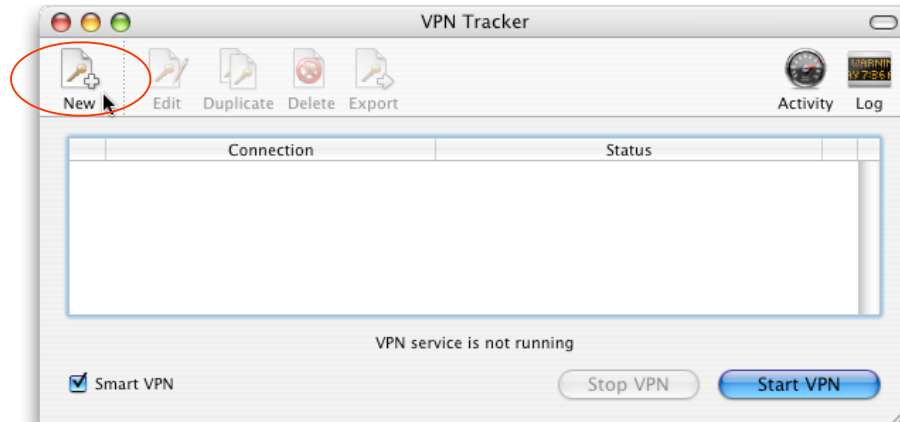
CISCO SYSTEMS

- ▶ **Group Name:** Enter an arbitrary name (e.g. vpntracker)
- ▶ **Local Group Setup:** Enter the IP address and the subnet mask of your office network **1**
- ▶ **Domain Name:** Enter a unique name for this Group VPN (e.g. vpntracker) **2**
- ▶ **Preshared Key:** Enter your desired password (pre-share key) (e.g. secretkey) **3**
- ▶ Click on "Save Settings".

Task 2 – Configure VPN Tracker

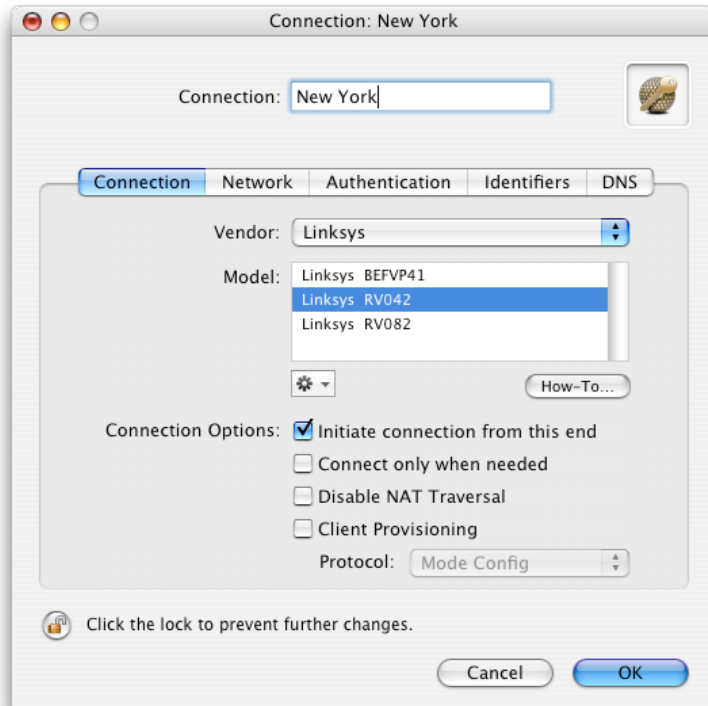
This section describes the configuration of VPN Tracker for your Linksys RV042/RV082 router.

Step 1 - Create a new Connection



► Click on "New" in the VPN Tracker main window.

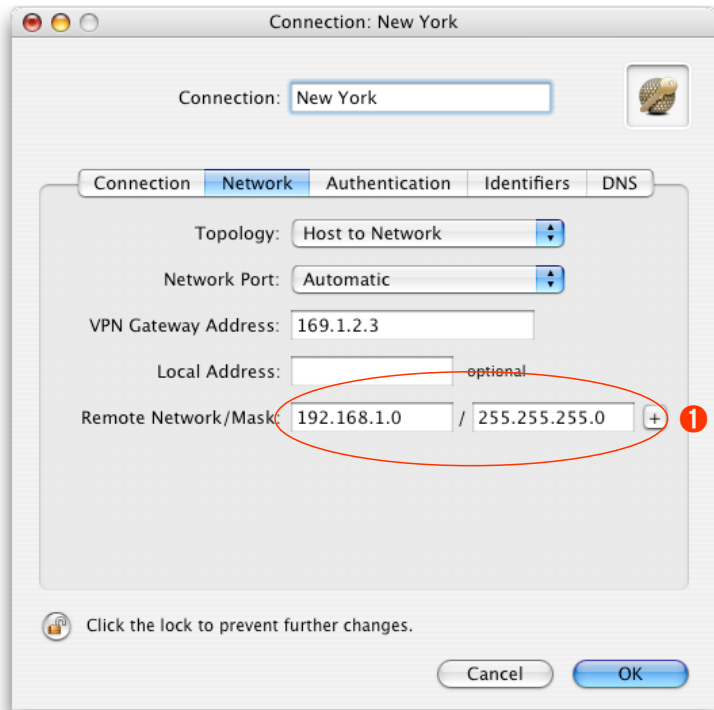
Step 2 - Connection Settings



- ▶ Select the vendor (**Linksys**)
- ▶ Select your VPN router model (**Linksys RV042** or **Linksys RV082**)
- ▶ Make sure to enable “Initiate connection from this end”

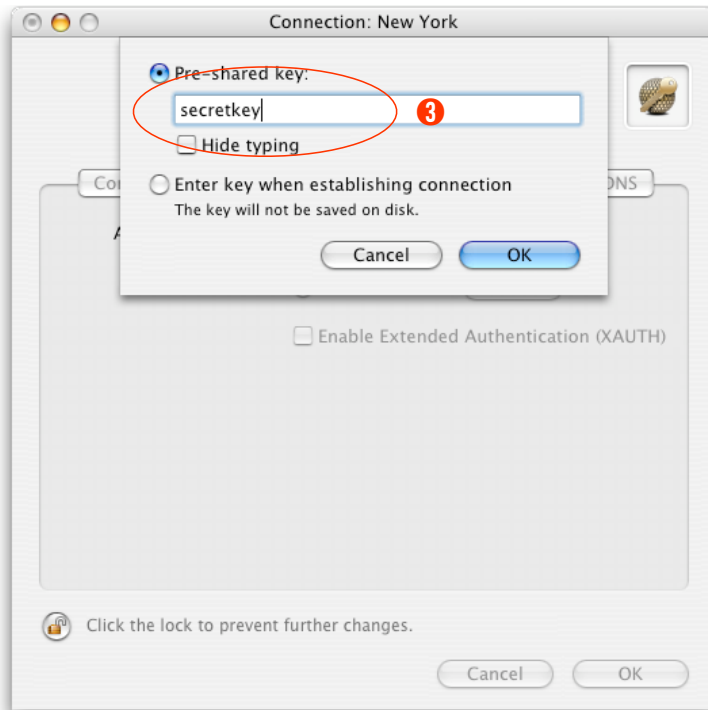
TIP The pre-defined VPN Tracker connection for the Linksys RV042 and the Linksys RV082 VPN router is based on the default settings for your Linksys VPN router. If you or the administrator changed any of the settings while configuring the device, you might have to adjust the connection type in VPN Tracker by double-clicking the model.

Step 3 - Network Settings



- ▶ **VPN Server Address:** public IP address of your VPN Gateway (e.g. 169.1.2.3)
- ▶ **Remote Network/Mask:** network address and netmask of your office network. **1**

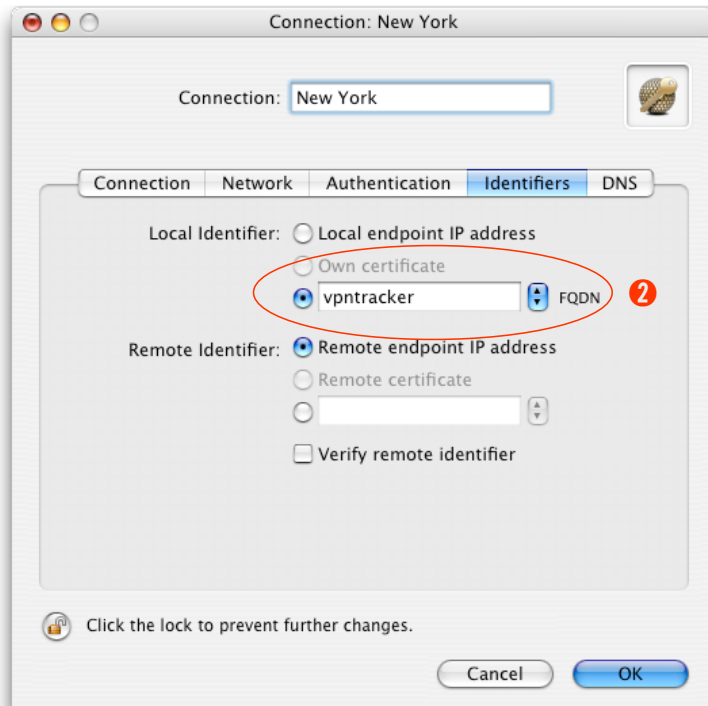
Step 4 - Authentication Settings



- **Pre-shared key:** Enter the Pre-shared key you used earlier when configuring the Linksys RV042/RV082.

3

Step 5 - Identifiers Settings



► **Local Identifier:** Enter the domain name you used when configuring the Linksys RV042/RV082. **2**

Task 3 - Check the VPN connection

This section explains how to start and test your VPN connection.

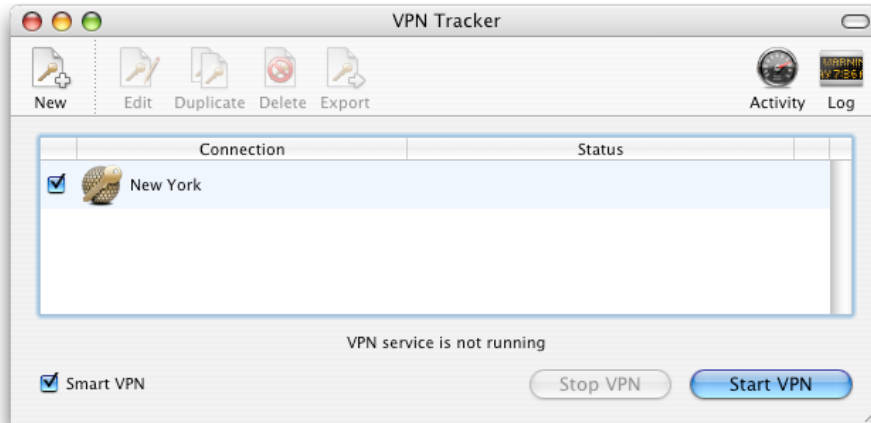
It's time to go out!

You will not be able to test and use your VPN connection from within your office network. In order to test your connection, you'll need to connect from a different location. That's why it's now time to go out. Take your MacBook Pro and have a coffee at your favorite Internet cafe or go visit a friend.

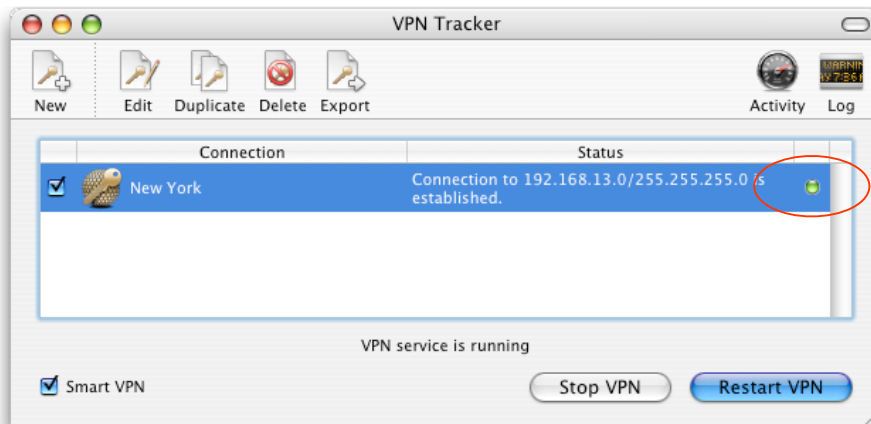
Test your connection

To test if everything is setup correctly please follow the steps below:

- ▶ Get access to the Internet
- ▶ Make sure the Internet connection is working; open your Internet browser and try to connect to <http://www.equinux.com>
- ▶ Start VPN Tracker if it's not already running



- ▶ Select the connection you configured for your Linksys RV042/RV082 device
- ▶ Hit the **Start VPN** button



- ▶ If the light turns red after a few seconds, then please read the **Troubleshooting** section on the next page
- ▶ If the light turns green, that means you've successfully established a connection

Congratulations! You did it!

Troubleshooting

I don't get a green light in the VPN Tracker main window

- ▶ Make sure that your computer is not connected directly to the office network you want to connect to.
- ▶ Make sure, that the **Identifier** and the **Pre-shared key** you've entered in the router configuration match the settings you entered in VPN Tracker.
- ▶ Verify that the **public IP address** you entered in VPN Tracker matches the public IP address of your router.
- ▶ Download our sample configuration and connect to our test device at <http://www.vpntracker.com/connectiontest/>
 - If the test connection cannot be established: Make sure, that the internet connection is working and verify that your local router is not blocking any connection attempts.
 - If the test connection is established successfully: Your internet connection is working and does not block VPN connections. Please check the log file of your Linksys RV042/RV082 for error messages.
- ▶ If you're still having issues with your connection, please create some screenshots of your settings on both ends, gather the log files and send them over to our support team via <http://www.equinux.com/us/products/vpntracker/contactus.html>.

What's next?

This section explains how to use your VPN connection.

Introduction

As the VPN connection has now been established, you should be able to access most of the resources in your office network.

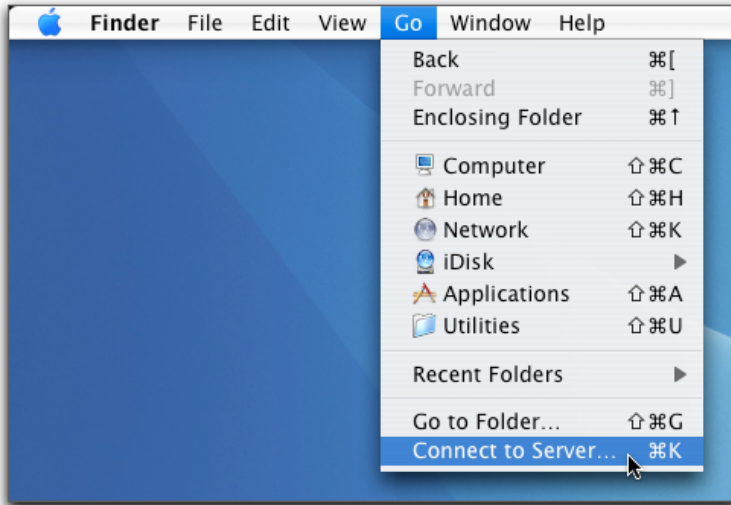
Known Limitations

There are some limitations of a VPN connection compared to a direct connection to a office network.

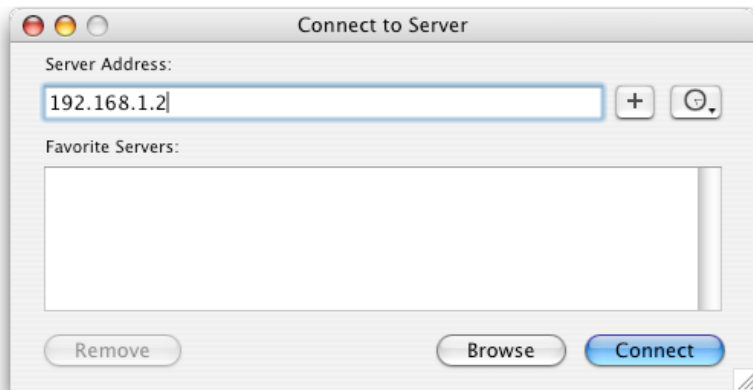
- ▶ **Bonjour:** As Bonjour Chat is not supported over a VPN tunnel, you'll need to use iChat server in order to chat remotely.
- ▶ **Browsing the network:** You can't "browse" the remote network as you're normally used to. You need to connect to each machine manually, as described on the next page.

Accessing Files

To access files in your office network, just follow the steps below:



- ▶ Go to the **Finder** application
- ▶ In the menu bar, click on **Go->Connect To Server...**



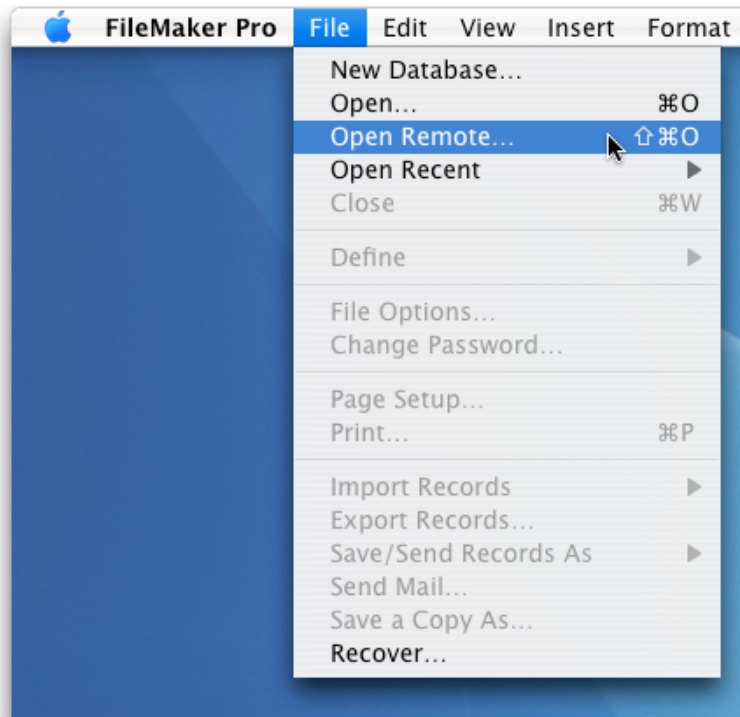
- ▶ Enter the IP address of the machine you want to connect to. In our example network this would be the IP address **192.168.1.2**
- ▶ Click on the **Connect** button
- ▶ Enter your **Username** and **Password** to access the files

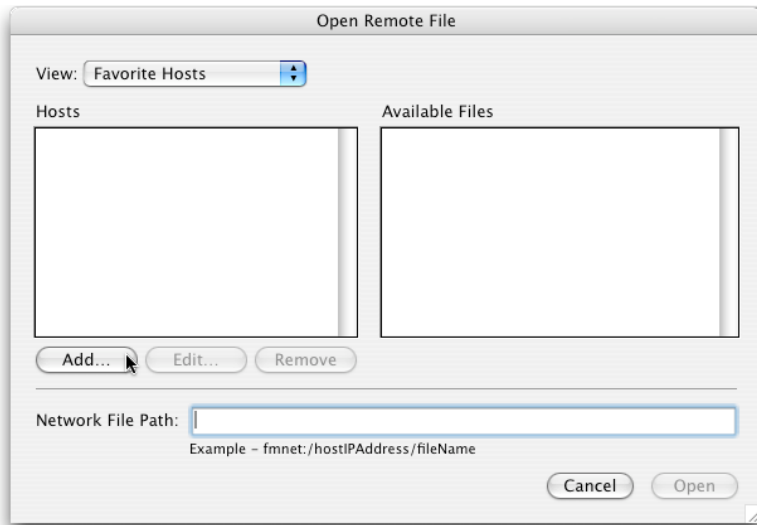
TIP When connecting to a Windows fileserver, you'll need to prefix the IP address with "*smb://*"; e.g. "*smb://192.168.1.2*".

Accessing a FileMaker Database

To access a database available in your office network, just follow the steps below:

- ▶ Start the **FileMaker** application
- ▶ In the menu bar, click on **File->Open Remote...**





► Click on the **Add...** button

Edit Favorite Host

Favorite Settings

Host's Internet Address:
(Example - host.domain.com or 192.168.10.0)

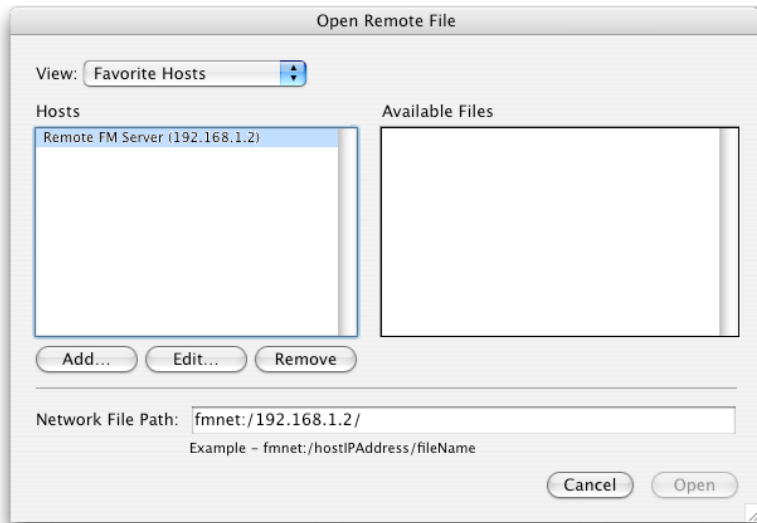
Favorite Host's Name:
(optional)

File Settings

☒ Show all available files for this host
☐ Show only these files

Enter one file name per line, separated by a carriage return

- ▶ Enter the **IP address** of the FileMaker server machine
- ▶ Enter a hostname for this machine (optional)
- ▶ Click on the **Save** button



- ▶ Select a database from the list of **Available Files** and click **Open**
- ▶ You are now able to access your FileMaker databases as usual

Acquire more Licenses

If two or more people need to access your office network via VPN, then you need to acquire more VPN Tracker licenses.

To get more licenses, please contact your reseller and inquire about „VPN Tracker Personal Edition“.

Or point your browser to <http://store.equinux.com> and buy additional VPN Tracker Personal Edition Licenses online.