

# Network Sharing guide for Windows

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A step by step guide to setting up network sharing in Windows XP and 7

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## **Contents**

Introduction

Setup for Windows XP

Setup for Windows 7

Connecting to shared network

## 1. Introduction

There are several different methods to share a network from a computer. Mainly Bridging and NATing.

Bridging effectively connects the two network cards as though they were part of a switch, and thus the computers are all treated equally by the network, and the settings on the bridging computer in no way affect the other computers connected to it.

NATing effectively makes the computer a server. It controls the flow of information between the main network and the devices that are plugged into it. There are several reasons for wanting to do this, including having more control over the other devices, setting up routing, or limiting IP assignments.

Both setups have their pros and cons, this guide focuses only on NATing.

Both setups require that you have a computer with 2 network cards. Purely due to availability, the Windows XP guide shares a Wi-Fi network to a LAN network and the Windows 7 guide shares a LAN network with another LAN network. There should be only very minor differences if alternative setups are used.

If you want to use a computer to share internet via a Wi-Fi card, I advise using a program such as Connectify ([www.connectify.me](http://www.connectify.me)). It will automatically setup a Wireless AP for you, and includes the setup of security and passwords.

The Windows XP guide was done using Windows XP Professional SP3 x86, and the Windows 7 Guide using Windows 7 Ultimate x64, but the steps should be fairly uniform among the different Windows offerings.

## Terminology

**Main Computer** – The computer running Windows XP/7 on which the sharing is to occur which has two or more network devices.

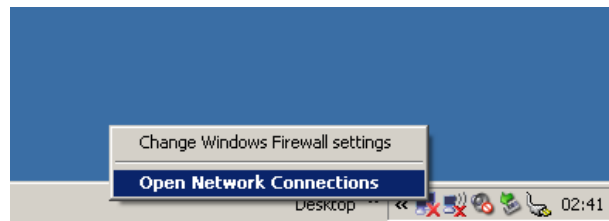
**Main Network** – The Network that is to be shared.

**Client Devices** – Any IPv4 device such as computer or playstation which is to connect to the shared network.

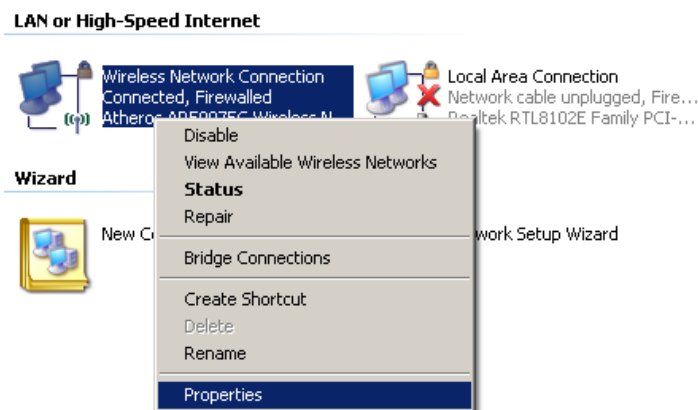
## 2. Sharing a network in Windows XP

To start off with, ensure that your Main Computer is connected to the Main Network, and that any client devices are disconnected.

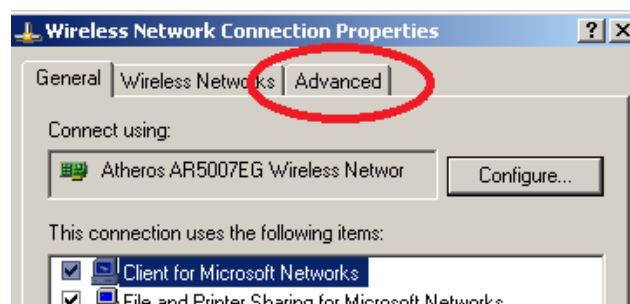
Right click on a Network icon in your notification area and select "Open Network Connections" (If there is no icon, go Start>Settings>Network Connections).



There should be at least 2 Network connections here. In this case I have a Wireless and a Local Area Connection. We are going to connect to the Main Network via the Wireless Connection. So right click on your Main Network Connection and go to properties

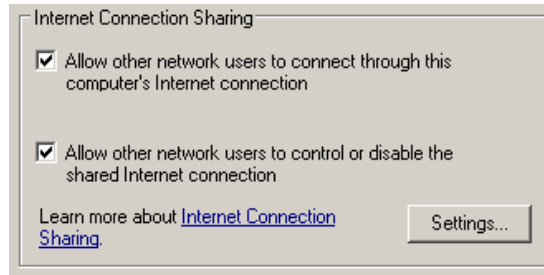


Select the Advanced tab



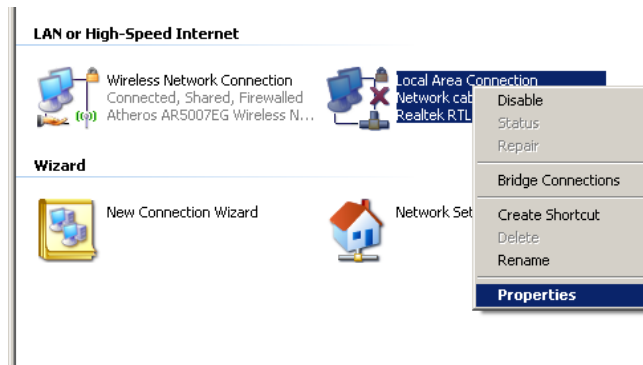
Click the “Allow other network users to connect through this computer’s internet connection”.

If you want you can look at the “Settings” listed there, but no changes are required to get the network running.

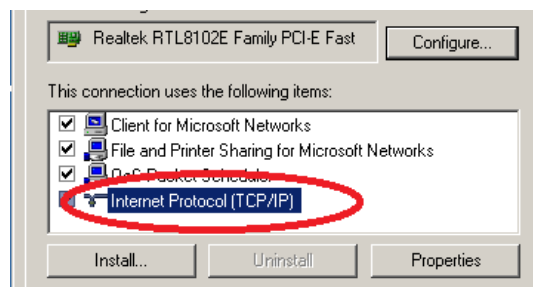


Click OK.

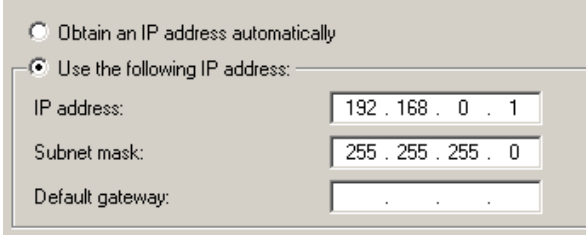
Right click on the other network device and click on Properties.



Double Click on “Internet Protocol (TCP/IP)”



Take Note of the IP Address and Subnet Mask specified here. They may be required for the setup of Client Devices. Write them down somewhere.



The image shows a network configuration dialog box with two radio buttons at the top. The first radio button is unselected and labeled "Obtain an IP address automatically". The second radio button is selected and labeled "Use the following IP address:". Below this, there are three input fields. The first is labeled "IP address:" and contains the text "192 . 168 . 0 . 1". The second is labeled "Subnet mask:" and contains the text "255 . 255 . 255 . 0". The third is labeled "Default gateway:" and contains three dots ". . .".

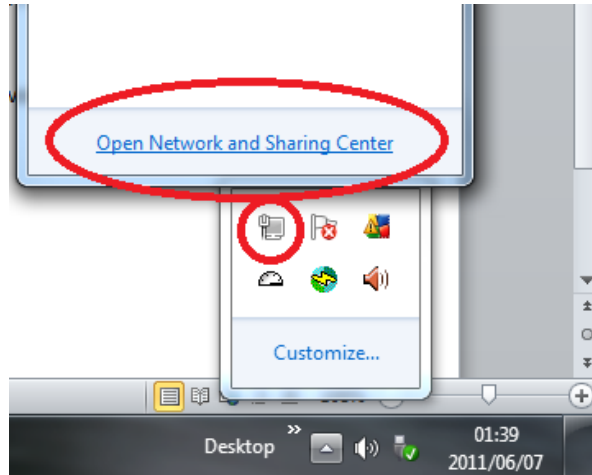
Click OK twice.

The Network should now be shared, and you merely have to setup your client devices to make use of the shared network.

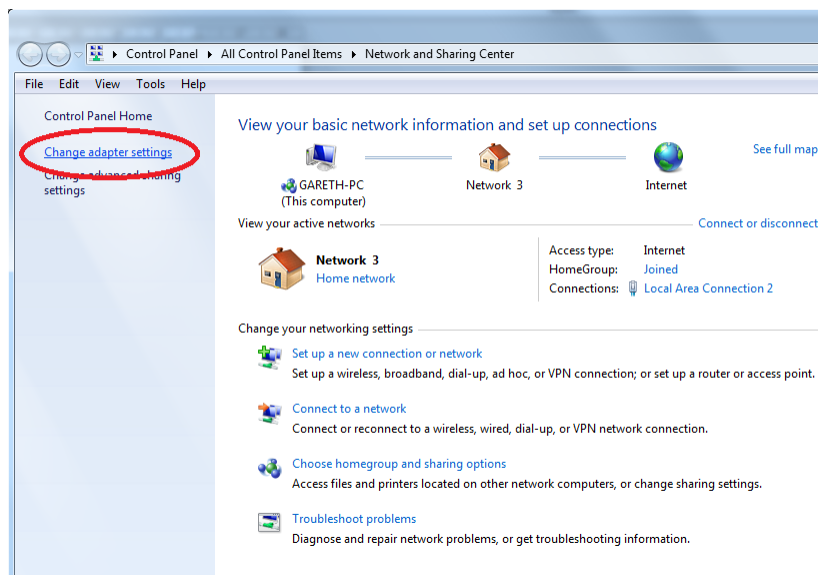
### 3. Sharing a network in Windows 7

To start off with, ensure that your Main Computer is connected to the Main Network, and that any client devices are disconnected.

Left click on the Network icon in your Notification area and open the “Network and Sharing Center”



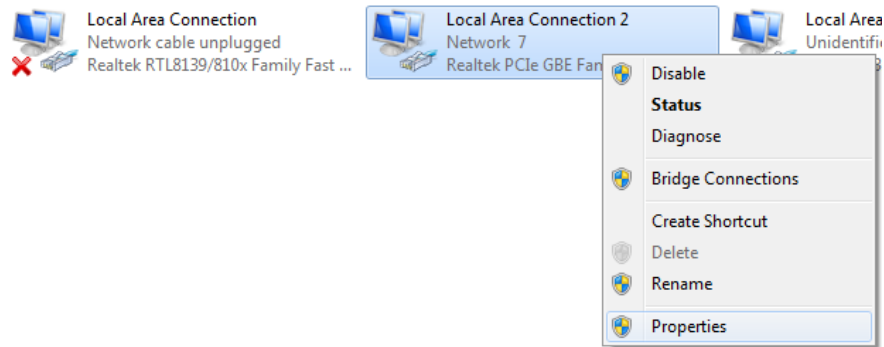
Click on “Change adapter settings”



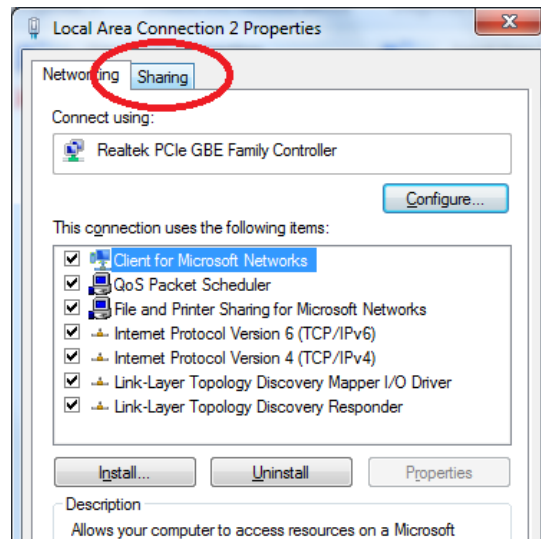
There should be two or more Local Area Connections listed. At least one of them should be connected (The one plugged into your Main Network and the one you are going to share), and one of them should say “Network Cable Unplugged”, this is where you are going to share the network to.



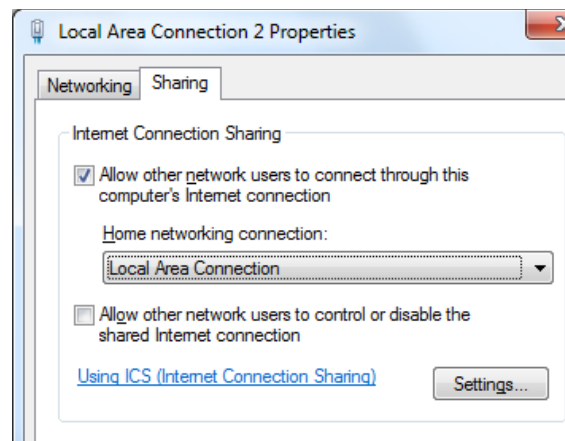
Right click on the Local Area Connection relating to your Main Network and click “Properties”



Click on the “Sharing” tab at the top of the page.



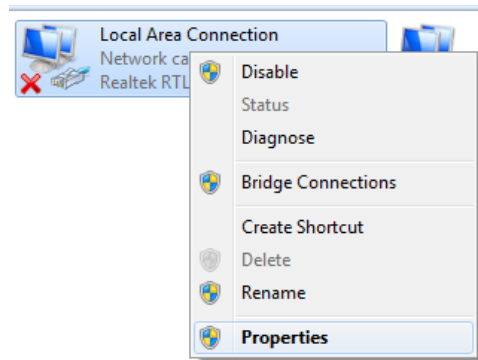
Select the “Allow other network users to connect through this computer’s Internet connection” box. Select the appropriate Local Area Connection from the drop down menu. It should be the one relating to Local Area Connection that was marked as “Network cable unplugged”. Looking at the image two back on my computer, this relates to “Local Area Connection”



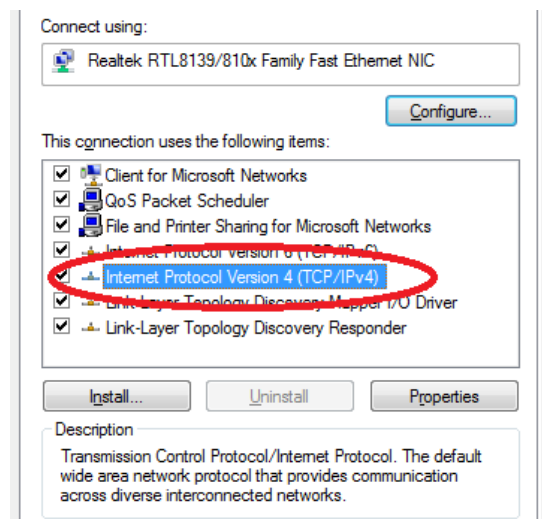
If you want you can look through the settings, but for a basic setup this is not necessary.

Click OK to complete the process.

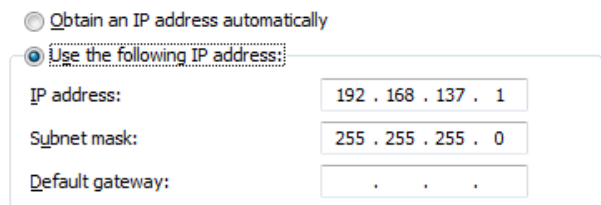
Now right Click on the Local Area Connection that is going to be plugged into the client devices and click on “Properties”.



Double click on “Internet Protocol Version 4 (TCP/IPv4)”.



Take note of the IP Address and Subnet mask that are filled in, these may be needed in a later step. Write them down somewhere for reference.





Click OK twice.

The Network should now be shared, and you merely have to setup your client devices to make use of the shared network.

## 4. Setting up your device to connect to network

Depending on what device you are using, this step can be as simple as plugging in your device. It can however be slightly more complicated, involving some manual settings. If your Main Computer has been setup correctly it should have DHCP enabled, which means that it automatically assigns IP addresses to computers that connect to it and also set any other necessary settings.

I tested my shared networks in Ubuntu 10.04, Windows XP, Windows 7 and on my PlayStation 3. All devices were set to automatically acquire the necessary details, and all successfully connected to the internet via the Main Computer's shared network. For the PS3, when asked for custom/easy setup, I had to select custom, but thereafter set everything to automatic and it functioned perfectly.

If you have problems with this, you may have to manually setup the network on the client device. To do this you will need to set the following values. The values you reference are those you copied down from the Network Sharing setup in the last stage.

**IP Address:** This must be in the same range as you your Main Computer's. The first 3 values must be the same, but the last value must be something different. In my Windows 7 example's case, the Main Computer's IP address was 192.168.137.1 so on my client device I have to set the IP address to be something like 192.168.137.2 or 192.168.137.3. The last value must be in the range 0-255 and must differ from all other devices in the range.

**Subnet Mask:** This must be the same as the Main Computer's Subnet Mask, in my example, the value was 255.255.255.0.

**Default Gateway:** This must be the same as the Main Computer's IP address, in my example this was 192.168.137.1.

**Primary DNS Server:** This must also be the same as the Main Computer's IP address, in my example this was 192.168.137.1.

After setting these the network should be setup.