Experiment # 3

Making the Wireless Home Network Connection in Windows XP without a Router

In this experiment, client computers will be connected to the Internet via ad hoc network. We will start with same steps in Experiment # 1, in which we created an ad hoc network, and then we add Internet Connection Sharing on the host computer and all connected computers will be surfing the net wirelessly in no time at all.

We will start with a single computer that already has a wired Ethernet broadband connection to the Internet. Then we'll build the ad hoc wireless network in three steps:

As you read through the procedures below, note that the accompanying images are captured from both the host and client computers and that the screen shots of the host computer contain a silver title bar, while the client computer screen shots contain a blue title bar.

Use the Internet Connection Firewall

Before we process we configure the Internet Connection Sharing we should configure the firewall. A firewall is a security system that acts as a protective boundary between a network and the outside world. Windows XP includes Internet Connection Firewall (ICF) software you can use to restrict what information is communicated between the Internet and your home or small office network. ICF also protects a single computer connected to the Internet with a cable modem, a DSL modem, or a dial–up modem.

Note: If you are running Windows XP Service Pack 2 (SP2) your firewall is turned on automatically. To learn more see,

http://www.microsoft.com/windowsxp/using/security/internet/sp2_wfintro.mspx

If your network uses Internet Connection Sharing (ICS) to provide Internet access to multiple computers, you should use ICF on the shared Internet connection. However, ICS and ICF can be enabled separately. You should not enable the firewall on any connection that does not directly connect to the Internet. ICF is not needed if you already have a firewall or proxy server on your network in your home or office.

You must be logged on to your computer with an administrator account in order to enable the firewall.

You should not enable Internet Connection Firewall on virtual private networking (VPN) connections, which are typically used to securely log in to a corporate network. You should not enable ICF on client computers that are part of a large company or school network with a server-client structure. ICF will interfere with file and printer sharing in these scenarios.

If you are sharing an Internet connection, enable the firewall only on the host computer that is connected to the Internet. The host computer appears to the Internet as the only computer on the Internet, hiding the computers in your home network, read more about Network Address Translator (NAT). The host computer with ICF enabled provides a single point of security for your host computer and home network computers. In such home networks, computers running earlier versions of Windows are protected without the need for additional firewalls. See the illustrations in this http://www.microsoft.com/windowsxp/using/networking/expert/davies_july30.mspx. article to help you understand where ICF should be enabled on your home network.

To enable or disable Internet Connection Firewall

1. Open **Network Connections** (Click **Start**, click **Control Panel**, and then double–click **Network Connections**. In Category View, click **Network Connections**.

2. Click to select the Dial–up, LAN or High–Speed Internet connection that you want to protect as shown in Figure 1 below.
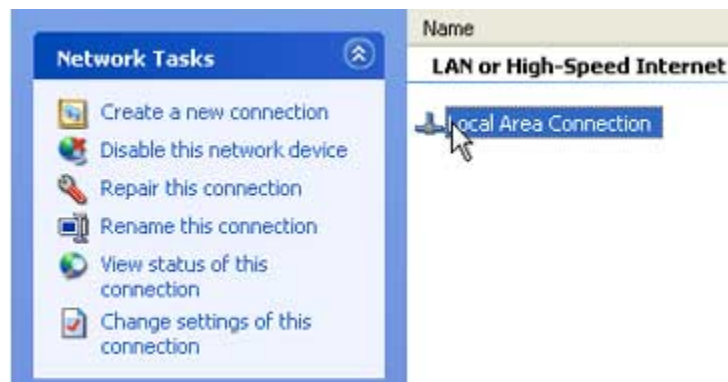

Figure 1

3. In the task pane on the left, under **Network Tasks**, click **Change settings of this connection** as shown in Figure 2 below.

Figure 2

4. On the **Advanced** tab as shown in Figure 3 below, under **Internet Connection Firewall**, select one of the following:

• To enable Internet Connection Firewall (ICF), select the **Protect my computer and network by limiting or preventing access to this computer from the Internet** check box.

• To disable Internet Connection Firewall, clear the **Protect my computer and network by limiting or preventing access to this computer from the Internet** check box. This disables the firewall; your computer and network are then vulnerable to intrusions.
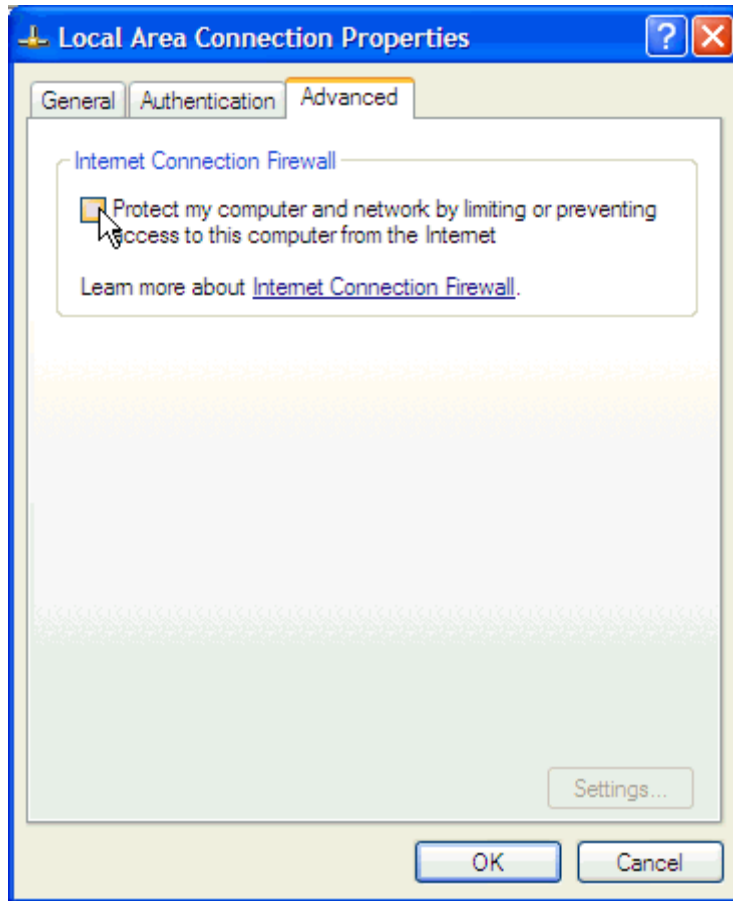
Figure 3

Sharing the Connection

After a successful ad hoc wireless network has been created, we will set up Internet Connection Sharing.

1. Open **Network Connections** on the host computer. (Click **Start**, click **Control Panel**, click **Switch to classic view**, and then click **Network Connections**.

2. Click the connection to be shared, and under **Network Tasks**, click **Change settings of this connection**.

3. On the **Advanced** tab, select the **Allow other network users to connect through this computer's Internet connection** check box.

4. If you are not using a third party firewall and have not already set up the **Internet Connection Firewall (ICF)**, be sure to check the box enabling this feature.

5. Finally, optionally enable the setting to let other users control or enable this connection.

After completing ICS configuration, the **Network Connection** window on the host computer will display the original wired Ethernet connection and display the status as **Shared** as well as **Enabled**. The Network Connection window on the client computer will display the connection on the host as an **Internet Gateway**.
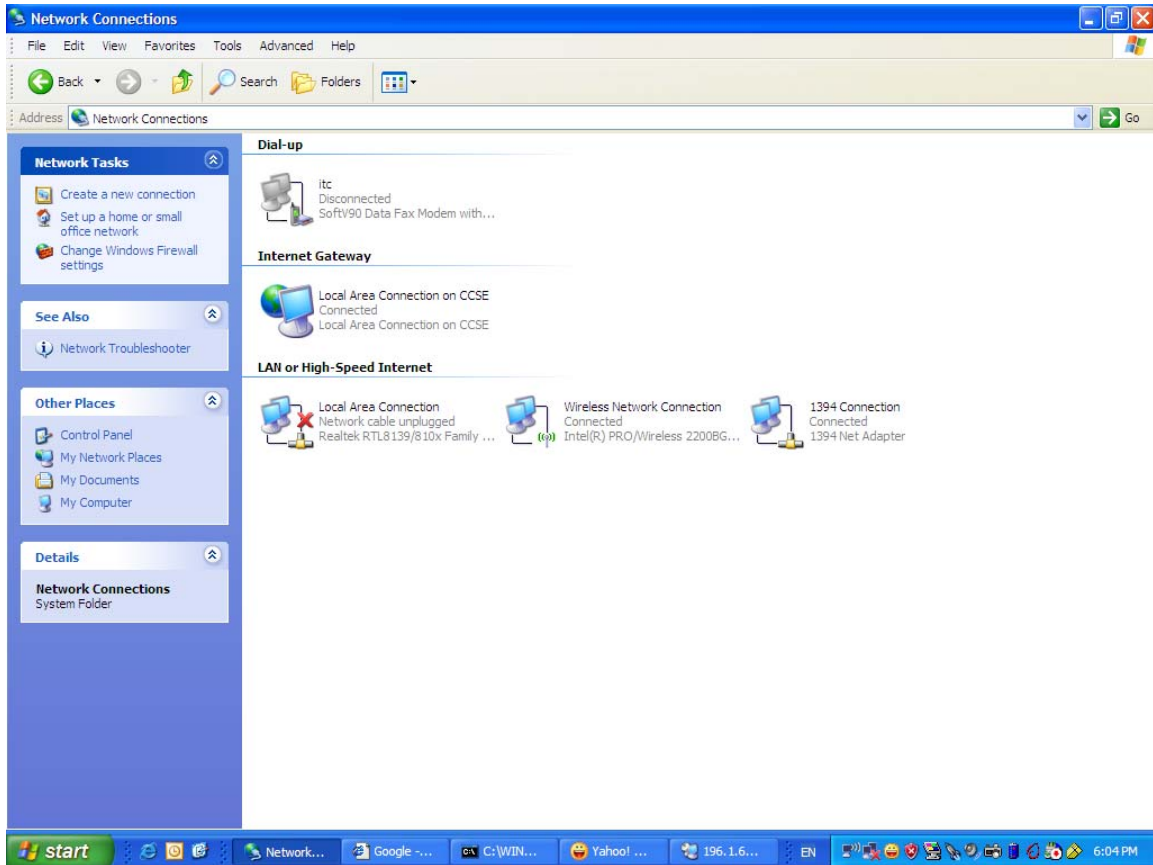

Figure 5

The client computer(s) should now receive a private class, non-routable IP address in the 192.168.0.* address range via DHCP from the host computer and should have full Internet connectivity.

References:

1. http://www.microsoft.com/windowsxp/using/networking/expert/bowman_02april08.mspx
2. http://www.microsoft.com/windowsxp/using/security/internet/sp2_wfintro.mspx
3. http://www.microsoft.com/windowsxp/using/networking/expert/davies_july30.mspx