

Computer Basics Part 2 – Network Computers

In these instructions we will cover the following:

- What does “network computer” mean?
- Why would I want to network my computer?
- What do I need?
- An easy way to network two or more computers.
- Is this expensive?

Here is a list of the words you will learn in these instructions:
network, network computer, switch, patch cables, NIC,

What does “network computer” mean?

A “**network**” is simply two or more computers linked or connected together.

A “**network computer**” is a computer that is networked or connected to other computers.

There are many different ways of networking computers. These instructions were written to show a home owner the simplest and cheapest way to connect your home computers using Windows (Windows 2000, Windows XP, or Windows Vista).

Why would I want to network my computer?

To network your computer gives you more freedom! It gives you the freedom to use one printer for more than one computer, it gives you the freedom to copy files between computers, and it gives you the freedom to use your high-speed Internet on more than one computer!

Do you have an older computer that you may not use as much, but works fine? If so then you can network it and use it to search the Internet or simply use it to backup your data from another computer!

What do I need?

Connecting your computers together may be easier and cheaper than you might expect. We will go a little more in detail a little later, however here is a quick overview:

First, you need the software... if you have Windows then you already have the software! You don't need to purchase it!

Second, you need a network card in each computer. Most new computers today have a network card built-into the computer. Look at your computer... do you see a connector (usually on the back of a desktop and can be on any side of a laptop) that looks like a large telephone connector? Usually, but not always there are two or three tiny little lights right next to it. If you have this connector then you have a network card! If you do not have one then you would need to get one. An example network card for a desktop computer can be seen in

illustration 1. Network cards come in different speeds. Older, slower cards are 10baseT. Faster cards are 100baseT. And if you want a very fast card then get a Gigabit card. The faster it is the more expensive it is, however if you do need to purchase a network card then you can sometimes find them for as little as \$5.00 each.

Third, you need one switch. A **switch** is a box which will allow you to connect each computer in order to filter and forward packets of data to each computer connected to it. Essentially, it is a box that you connect your computer to. The switch does not need any special software or knowledge to connect. You simply connect one end of the patch cable to the switch and the other end of the patch cable to your computer. (See Illustration 2 for an example of a switch). Note that there are different speeds you can purchase for a switch just like the network card: 10baseT, 100baseT, Gigabit. (Gigabit is the fastest and most expensive).

Fourth, you need a patch cable for each computer you have. **Patch cables** are network cables with plugs on the end (RJ45) which allow you to connect your computer to the network switch. Patch cables come in different colors and different lengths. They are also rated by Category such as CAT5 or CAT6. The higher the number of the category the faster they are designed to transfer data. The different colors do not matter, get whatever color you want.



An easy way to network two or more computers.

In this example we will be connecting two computers in a workgroup. (If you have three computers it would be done the same way).

I will assume that you have purchased the switch and a patch cable for each computer you want to connect. I will also assume that you have a network card already installed in each computer and it has had the drivers for it already installed (most new computers have this already done for you).

Step 1 – Network Hardware

Take the switch you have purchased and make sure the power is plugged in. Take a patch cable and connect it from any port on the switch to your **NIC** (NIC is short for Network Interface Card) on the computer. Now do the same thing on the second computer, connect another patch cable from a different port (connector) on the switch to the NIC of the second computer. That's it! The hardware is connected!

Step 2 – Configure the Software

Windows already has the software built-in to connect the computers together. You just have to simply configure it, or select the appropriate options to make it work.

If you have a Windows XP computer then do the following:

1. Click **Start**, right-click **My Computer**, and then click **Properties**.
2. In the **System Properties** dialog box, click the **Computer Name** tab. You will see a window similar to this:

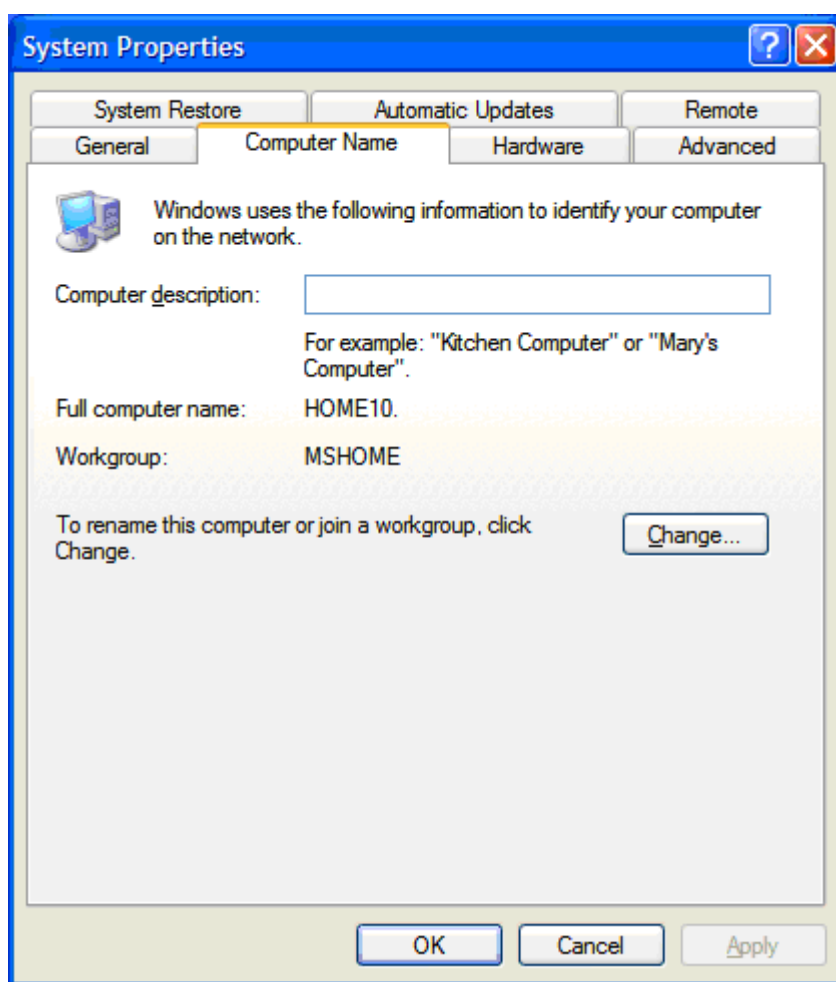


Illustration 4: System Properties window of Windows XP

1. If you have a Windows 2000 computer then Right-click on **My Computer** on the desktop and select **Properties**.
2. In the **System Properties** dialog box, click the **Computer Name** tab.
3. Notice the computer name and the Workgroup. Each computer must have a different computer name and must have the same workgroup name. So, for example, computer 1 could have the name "HOME1" and be on workgroup "WORKGROUP" and computer

- 2 could have the name "HOME2" and be on the workgroup "WORKGROUP"
4. Change each computer by clicking the **Change** button. Change the computer name if needed then click OK. The computer will need to reboot. When the computer comes up again then change the workgroup on each (if needed) so they are the same.

If your computer is running Windows Vista then do the following:

1. Click **Start**, right-click **Computer**, and then click **Properties**.
2. In the **System** window you will see the Computer name (Illustration 5, letter A), and workgroup name (Illustration 5, letter B). If you need to make a change either the computer name or the workgroup name then click **Change settings** (Illustration 5, letter C). If you have to change either the computer name or the workgroup name then you will be required to reboot the computer.

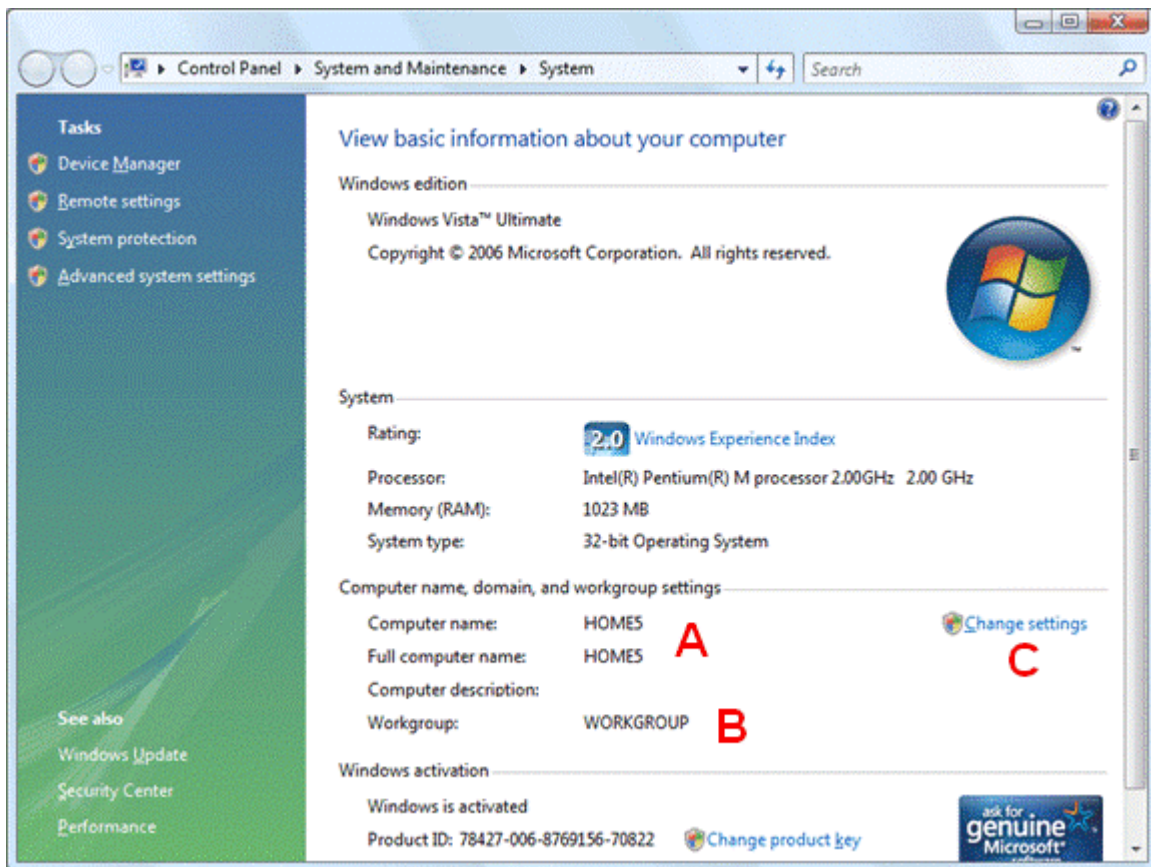


Illustration 5: Windows Vista System Properties window

After each computer has a different computer name and the same workgroup name then the network is running!

To verify this, you can open your Network Neighborhood or Network listing and see the other computer.

Although, the computers are connected you still can't do anything. You need to share what you have so the other computer can see it. You can share your printer, files, etc.

In Windows Vista do the following:

To enable file sharing, do the following:

1. In the **Sharing and Discovery** section of the **Network and Sharing Center** window, click the down arrow next to **File sharing**.
2. Within the **File sharing** settings, click **Turn on file sharing**, and then click **Apply**.

To enable printer sharing and share all of your connected printers, do the following:

1. In the **Sharing and Discovery** section of the **Network and Sharing Center** window, click the down arrow next to **Printer sharing**.
2. Within the **Printer sharing** settings, click **Turn on printer sharing**, and then click **Apply**.

You have now turned on File and printer sharing, but you still need to share files and your printer. Within Windows Vista this takes a little time to setup. For detailed instructions on setting up sharing please see the Windows Vista instructions located at:

http://www.microsoft.com/technet/network/evaluate/vista_fp.mspx

Windows 2000 and Windows XP is a little easier.

For Windows 2000 and Windows XP to share your printer do the following:

1. To share a printer, Click **Start, Settings**, then click **Printers and Faxes** (or **Printers**).
2. Right-click the printer you want to share and click **Sharing**.
3. Select to share the printer and click OK. If it asks to turn on File and printer sharing then turn it on. The printer is now ready to use on another computer!

To turn Simple File Sharing on or off in Windows XP Professional, follow these steps:

1. Double-click **My Computer** on the desktop.
2. On the **Tools** menu, click **Folder Options**.
3. Click the **View** tab, and then select the **Use Simple File Sharing** (Recommended) check box to turn on Simple File Sharing. (Clear this check box to turn off this feature.)

For Windows 2000 and Windows XP to share files do the following:

1. Open **My Computer**. Find a folder you want to share and right-click it and select **Sharing and Security**. If you can't find Sharing and Security then turn on Simple File Sharing as described in the previous paragraph.
2. A window will appear such as shown in Illustration 6. Simply select to **Share this folder**, a share name will be given which you can change if you want then click the **OK** button.

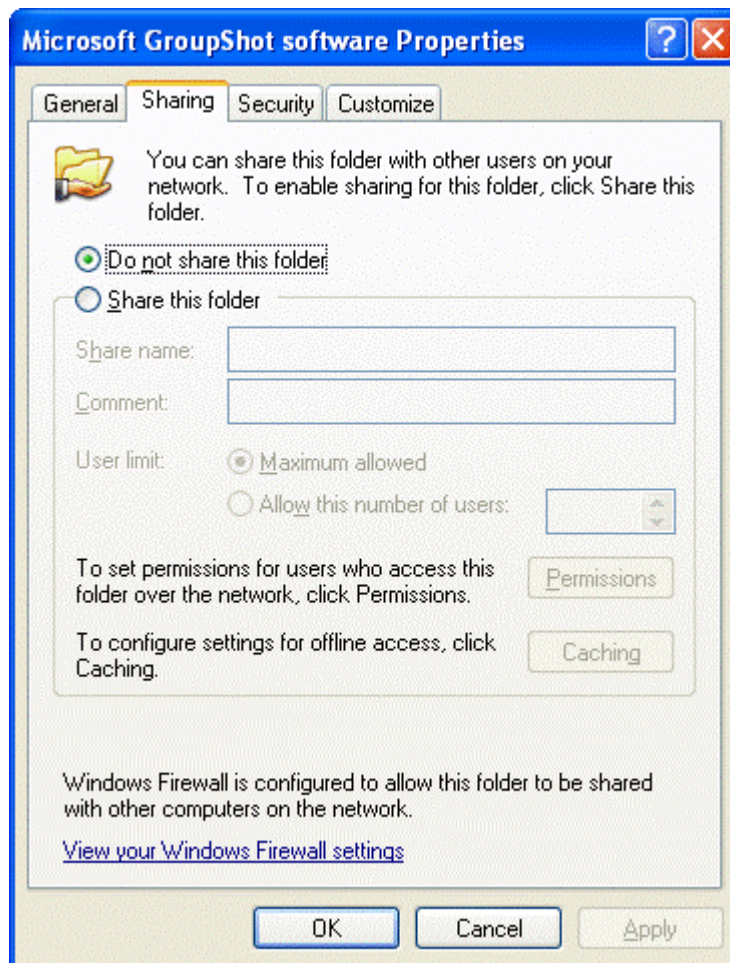


Illustration 6: A folder's Sharing option in Windows XP

To access the files from the other computer simply connect through Network Neighborhood.

For more detailed instructions on file sharing within Windows XP please see the following:
<http://support.microsoft.com/kb/304040>

Is this expensive?

Not at all! In fact, you can find a switch for as little as \$10.00 and patch cables for a dollar a piece or less!

Note that you can connect a Windows 2000 or Windows XP or Windows Vista computer together. They do not have to be all the same.

I hope this information has been helpful to you.

You may print this information if needed.

Check www.scottfam.us for additional information!