IP Address and home network simplified

Each computer connected to the internet is assigned an IP Address by the ISP they use. You will select or be assigned an email address which essentially is a label that is placed over the IP Address to make it easier for you to remember. The IP Address is a set of numbers that is recognized by the ISP server but that would be difficult for you to remember. When you enter your screen name, the ISP recognizes the IP Address (numbers) that belongs to that screen name and with the proper password allows that computer to talk to it's computer.

Now when you set up a home network, a little more is involved. You've now plugged a ROUTER into the modem and sits between the ISP and the other computers connected to the router….the total being, the network.

During setup of the router using what's called DHCP (Dynamic Host Configuration Preotocol), it is the Router that asks the ISP for an IP address. The ISP assigns that Router an IP address. Now when you connect your 1st computer to the router, that computer must ask the router for an IP address so it can connect through the router to the ISP. The router assigns an IP address to each computer…all the IP addresses assigned to various computers will all begin with 192.168… …. Which indicates a local network.

When you sign onto your computer that is connected to the router that is connected to your DSL or Cable modem it goes something like this:

Computer to router…says, I am IP address 192.168…. ….please get me www.google.com The router recognizes that IP address as the one it assigned.

The router in turn…signals the ISP via the modem … and says I am IP address 205.188… ...please get me www.google.com

To the internet it appears that the router is making the request and it recognizes the IP address as the one which it assigned to that router, so it says ok…and connects to www.google.com as requested and now computer 192.168.xxx.xxx has google.com appear on it's screen.

To see what your particular IP address is, click START…RUN and type in CMD (if using win XP. Type in COMMAND if using pre-XP windows). Click OK

The dos screen will appear. At the blinking cursor type in ipconfig and press ENTER

You will get something that looks like this:
Connection-specific DNS Suffix
IP Address…….192.168.1.106
Subnet Mask…….255.255.255.0
Default Gateway……..192.168.1.1

The IP address is the one assigned to your computer by the router.
Type Exit to close the screen and return to windows.

Now, in your browser box type http://www.whatismyip.com and press GO
You'll get a screen that says YOUR IP ADDRESS IS 206.124…..(incomplete to protect privacy of IP address owner)

This is the IP address assigned to your Router. Regardless of what your particular IP address is for your particular computer, on the internet your computer appears to be the IP address of your router. This is the reason that the router acts a bit like a firewall and helps to protect your computer from hackers.

To see if you can communicate with a particular computer, click START…RUN and type in CMD or COMMAND if using pre-XP windows.
Type Ping (and the name of the other computer) press ENTER.
IF you can communicate, you will get the message x number of packets sent (number of packets of data sent from your computer; then x number of packets received(from the other computer replying to your ping). IF 0packets received…the other computer is not communicating with your computer.

If you cannot get an answer when pinging the Name of the computers in your network, try pinging their IP address. IF the IP address responds to the ping, but the name doesn't, it usually means a network software failure or just that you failed to put in the correct Name you assigned to that particular computer.
You may need to turn off your firewall to ping your own computers. It may be blocking entrance to them.

To ping your own computer to see if your network software is functioning. Type ping 127.0.0.1 which is the standard loopback address. If your software is working correctly, you should get x packets sent, x packets received meaning that communication is good. IF 0 packets returned, something is wrong with the TCP/IP installation on the computer from which you just pinged 127.0.0.1.

If you are using Wireless technology you MUST secure it via your Router's Security program. This is usually done by setting a WEP passcode.

WEP Wireless security

Question:

I have broadband service, a Linksys Cable Modem (model BEFCMU10), and a Linksys WRT54GS wireless router. I currently have a desktop computer (w/USB Wireless B adapter) & two notebooks (no adapter necessary, built in wireless) all working fine. Happy days! I am now interested in wireless security.

- My desire is that anyone visiting me could have internet access without me having to do anything. I would simply tell them the passcode/WEP key.
- There seems to be a multitude of security options, and I am ignorant. (64 bit WEP vs. 128 bit WEP, MAC address filtering, WPA, etc.) Is 128 bit WEP more secure than 64 bit WEP? Which should I use?

Answer:

You can use either the 64 or the 128. Sometimes the 128 makes it slower. I suggest you try 128 and if you notice any dragging, switch it to the 64. Keep in mind that if you change from 128 to 64, you must get a new WEP key also..

I do suggest using the WEP for security, that is what I use at home. You should have gotten a little book with your wireless router. In that it will have a web address you can go to to set the settings. And will also tell you the password to use for the User password box.

For Linksys

1. Type into Internet Explorer's browser box 192.168.1.1 and press GO.

2. This will bring up the User box, type in the password as supplied in the router booklet and click OK.

3. This will take you to the Linksys site. Now, click Wireless and then Wireless Security.

4. The Wireless Security box should be ENALBLED.

5. The most frequently used Security Mode is **WEP**.

6. The Default Key select #1.

7. The Encryption Level and be either 64 or 128, whichever works best for you. I set mine for 64.

8. Now, Enter a passphrase, must be at least 8 characters, some alpha,some numerals. Example: CROW4T610

9. Press the GENERATE button and it will fill the boxes below with numbers and letters. Your encryption key will be #1, but when you sign onto your wireless you'll just put in the passphrase which will generate the encryption key for you.

CAUTION: if you set it for Wireless B configuration only "B" cards will be able to connect. I would suggest setting it to "G" because then a "B" or a "G" can connect as long as they have the WEP key. Write this down somewhere where you'll be able to find it as you may forget it. Sometimes when I have to set up the WEP key on a laptop, I find that I have to reboot it a few times to get it to work so don't get discouraged if it doesn't work the very first time.

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MORE from an experienced computer user is

Maxine,

Here is a procedure I use with a modem that assigns DHCP addresses where you also have a separate wireless router assigning IP addresses.

I log into the modem like you mention below and change the default address so it will be different from the router address. (i.e. 192.168.2.1 to 192.168.5.1) Then if I need to access the modem, there is no confusion. I then unplug the power and plug in the modem power again. Once the modem is back online, I log in using the new IP address and go the WAN area of the modem menu. I change the modem to a “Bridge” instead of the default. Then I connect the router to the modem and connect the computer to the router and then power up the router. Now I only have one level of firewall to deal with. If you need to open ports for gaming software or in my case ham radio

software, there is only one place where it need to be done. Also I have a network printer with a static address. I use 192.168.2.5 as the lowest DHCP assigned address and the printer is 192.168.2.2 so there is never a conflict when I turn on the printer which is normally not on.

Another tidbit in dealing with DSL modems has to do with inconsistent connections. This can happen when the DSL filter for the phone and modem connections are reversed. (Modem plugged into the phone port and vice versa.) If that is not the situation, try plugging the modem directly into the wall. The filter is for the voice connection to eliminate noise in the phone. If that cures the problem, request a new split filter or plug the phone into another outlet using just a phone filter and not the split filter. If that fails to cure the problem, go to the Network Connection box outside the house and unplug and plug in the phone line again. Corrosion may have accord in our humid weather.

While at the Network connection box, plug in a plain phone. Generally there are two jacks in the box. In most cases, only one is being used. If you plug the phone into the “dead” jack, nothing will happen. If you plug the phone into the connected jack, you should get a dial tone. Hit a number on the phone to get rid of the dial tone. Listen carefully and see if you hear excessive noise. You may have a problem that the carrier needs to repair.

You can also use this technique if your phone is dead. If you have a dead phone line in the house but you get a dial tone when plugged into the network connection box, the problem is yours and you will have to pay for the repair. Go around the house and unplug each phone line. Then plug each one back in one at a time until you find the culprit. Sometimes cleaning people can catch the phone wire with a vacuum and short the wire. Finding it yourself with general save you about $100 for a service call!

John