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Configuring your ADSL / Cable Wifi router
By P. Hopkins

When we change our internet service provider we often get sent a new router and/or modem to setup before we can use the internet. The two types being Cable router where the connection is already cabled into the house and the router just plugs in to it leaving the router to setup..

The other is an ADSL router where the phone line has a filter plugged in and phone cable going into the router and you either use its wifi abilities or its 4 ports on the back to plug network cables in and lead them to your computers.

Both types of router need setting up and often supplied installation and setup discs don't go as planed, so here's the complete manual guide to setting up both routers.

Standard cable routers (not ADSL)

Before we begin make sure you have a network cable connected between your computer and one of the four network ports on the back of your Wifi router. You need this for logging into the router through your web browser.

At this point you can use the CD supplied by your internet provider or follow this guide if you don't have a cd, or cd's just not working out for you.

Note
Any previous ISP software not used anymore like AOL or talktalk internet management software suites should be un-installed first, unless your still using them. Router menus and firmware differ, but the principles in this white paper apply to all of them.

First connect your service providers supplied modem to the router, using supplied cable going from the modem/Broadband connection box to the internet port on the router. Don't use the ports numbered 1 to 4, 6 or 8 they are for your computers to use. The internet socket on routers is normally close to power jack.

Now get another network cable and plug it in from computer to port-1 on the router.

Picture.1

To PC/Laptop

To modem
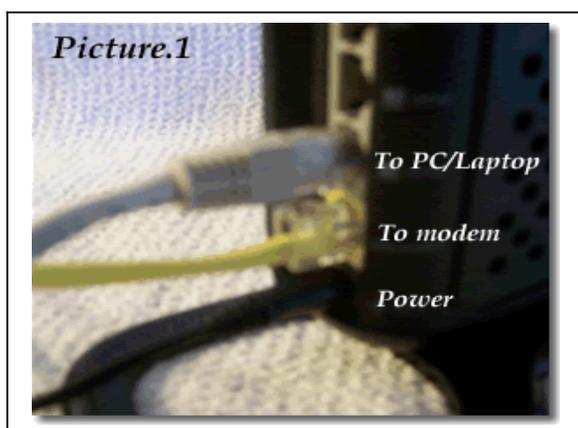
Power

When both cables are connected (see picture.1) you then need to power up the router and open your web browser. In the browsers address bar type the IP address of your router which will most likely be one of the following

192.168.1.1
or
192.168.2.1
or
192.168.0.1
or
192.168.1.0

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When you press enter you should see your routers login page and brand name displayed. If those IP's don't work, Google for how to log into your routers brand and model. Bellow is what the Belkin N-Wireless login page looks like .
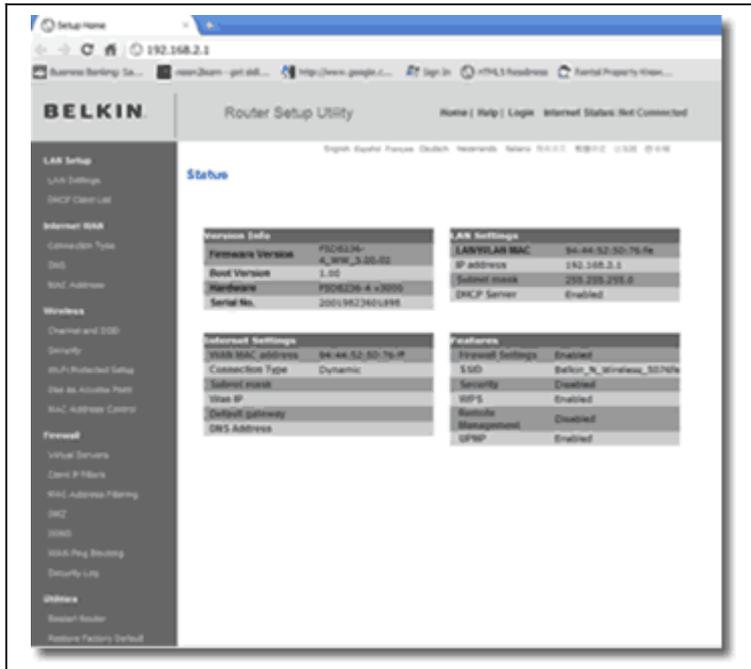
We used the Chrome browser to log in to our Belkin router settings.

The first page seen is normally a summery page showing firmware version and firewall status and connection status plus DHCP IP settings.

There should be a option or link to log in. click it and enter the routers default log in details, this will be in the manual.

If you don't have a manual then try leaving it blank

Or
User: Admin
Pass:Admin

If the router is 2nd hand the password may not be a default one and you will need to perform a Hard-Reset on the router. Look for a small whole labelled 'reset' to poke a pin into or a button some where whilst power is still on.

When you are logged in we need to run through and check some settings.

All the various sections for a router are often down the left hand side, similar to navigation in a web site. In a way, the router is allowing us to make changes to it, by using its built in website.

Lan and **DHCP** settings are a little more advanced for now and leaving them on default settings won't stop your connection to the internet.

Internet WAN settings
On rare occasions Your ISP may require you to supply a mac address of the main computer connected to the router. If there is a clone button in the settings for this then do it for your computer by clicking it. If you only see a line of boxes then it's a manual entry job

Go to last page to find out how to find your Mac Address

Wireless channel (SSID)
You could most likely run on the default settings for this section, but the *SSID* setting is a good one to checkout. This is like giving your router a name and is usually set to the routers make and model number. You can change it to 'Joe blogs' or 'petesNetwork' or what ever you want.

When windows scans for wireless networks that name or routers make will come up in the list, so you know it's your router.

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The other setting you might need to change is the ***wireless mode*** option. Your wifi card in your laptop or desktop will be of a certain type, such as 802.11g OR 802.11n. Check your computers Wifi card mode type and make sure it matches the setting for wireless mode on the router. Some routers have an auto-detect option.

Wireless (security)
This area requires attention. There are 4 types of security WEP / WAP / WAP2 / 64Bit-WAP AND 128Bit-WAP.

The easiest to setup is WAP where you enter a phrase which is used as a pass key. When setting up a computer to connect to the wireless router, you would set its security type to WAP and provide your phrase key. But this is NOT secure and can be easily hacked with tools freely available on the internet.

The best one is WAP2 128bit encryption, so we will setup that one if you have it. If you can't get your head around this one and go back to the simple WEP security method, make sure you disable SSID broadcasting and change the routers name.

Getting the routers security right is very important, as it stops outsiders from parking near your location and using your router to connect to your internet connection and using your internet bandwidth.

If a person use's your internet connection to commit fraud or hack another system you will be tied in with any investigations against the crime.

Ok, whilst logged into your router select wireless from the menu and then select security or encryption.

2. Select "128-bit WEP" from the drop-down menu.
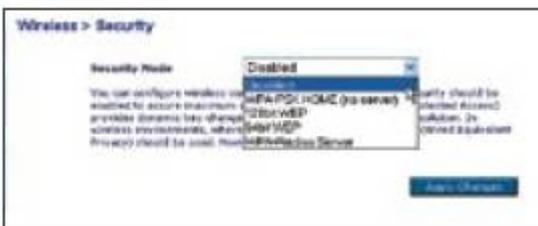
3. After selecting your WEP encryption mode, you can type in your hex WEP key manually, or you can type in a pass phrase in the "Pass phrase" field and click "Generate" to create a WEP key from the pass phrase.

Write down the pass phrase and generated key incase its needed when setting up your computers to connect to your router.

Click "Apply Changes" to finish. You must now set all of your computers to match these settings. A hex (hexadecimal) key is a mixture of numbers and letters from A-F and 0-9. For 128-bit WEP, you need to enter 26 hex keys. **For example:***C3030FAF4BB2C3D44BC3D4E7E4 = 128-bit key*
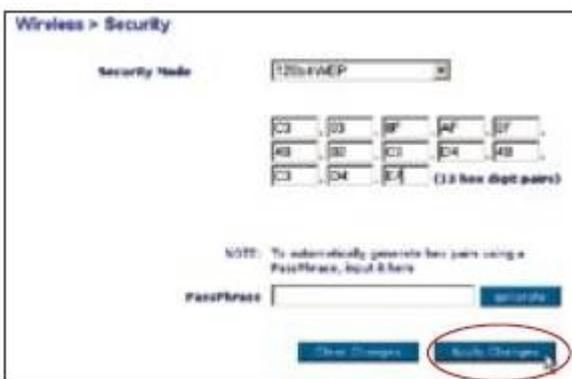
4. Click "Apply Changes" to finish. Encryption in the Router is now set. Each of your computers on your wireless network will now need to be configured with the same security settings.

WARNING
If you are configuring the Wireless Router or Access Point from a computer with a wireless client, you will need to ensure that security is turned on for this wireless client. If this is not done, you will lose your wireless connection.

Now the routers setup we have to setup the computers that will connect to the router.

The computer networking to router must use the same key as the router. For instance, if your router uses the key 00112233445566778899AABBCC, then the computer must be set to the exact same key.

Once the router has restarted you may see a 'Networks available' icon or balloon appear in the system tray (by clock bottom right). Right click on the connections icon and select '*Connect to a Network*' to see the following dialog.
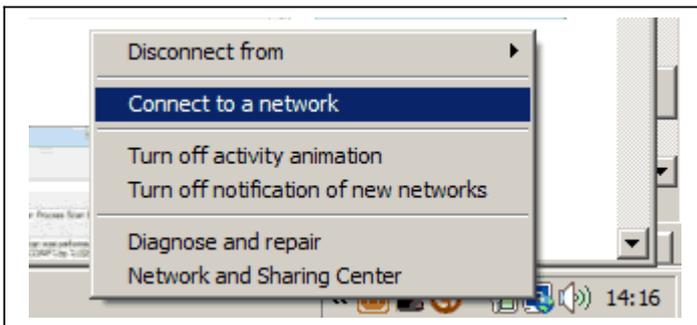
After selecting this option windows will open the Wifi connections dialog which looks like following picture bellow.

You should see the name of your router and a signal strength indicator next to it which should have full bars showing.

You should also see a paddock icon by your routers entry or at least some indication the router is secured.

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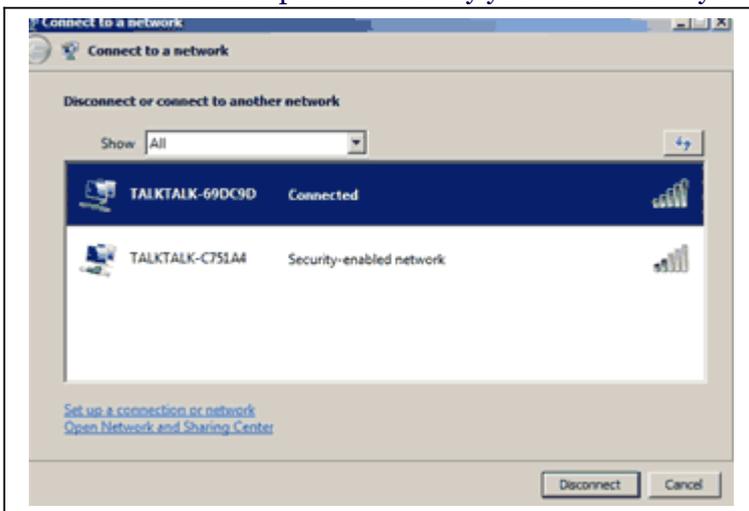
Make sure your router is selected then click on the 'Connect' button bottom right. Yes i know ours is saying disconnect ignore that..

After clicking on 'Connect' you should sea system dialog asking for security type and key.

The security type may be auto selected and the dialog may ask for the key or the pass phrase used to generate it.

If there is an encryption type option, make sure its set to 128bit.

Sometimes windows connection management is replaced by the ISP's preferred connection tools or wizards, but if you make sure the mentioned settings are correct you should have no problems using the internet through your router.

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Setting up gateway address & Locating MAC address

If you can't access the internet, you may need to renew the gateway address for your computers network card settings. The routers gateway and desktop gateway address should be the same. Your network cards gateway address may still be set to an old router or modems address (Gateway settings are IP addresses).

To make sure this is correct, do the following. Click start menu then type CMD into the search box or run box. When the Command window opens, type IPCONFIG /ALL and press enter.

Your command line window should look close to this one bellow.

If you just want the mac address, it's listed as **physicaladdress** in the ipconfig /all displayed settings.

In the above example my mac address is **00-1B-38-EE-02-7B** for the last network card show in bottom list.

Right.. Setting up gateway address... If the router and your computer both have the same gateway address, you don't need to change it, and can skip this part...

My routers IP address is 192.168.2.1 (for this lesson). Notice the line starting with;
Default Gateway............: 192.168.2.1
This is the IP Gateway address the network card or wifi card is set to. We will now use a new command to release the current IP settings from the network card/s ready for new ones that match the router.

We don't need to find this address, the system will do it for us. In the command window type the following command **ipconfig /release** and press enter.

The network settings are now wiped.... Now type **ipconfig /renew** and press enter.

Now type **ipconfig/ all** to view the new settings and verify that the router and network card have the same gateway address.