

# Wireless Networking

The Plain English Guide to Wireless Networking covers three vital wireless areas:

- Quick Guide - 10 Steps to a secure wireless network
  - Equipment for a wireless network
  - Connecting your wireless network
- 10 Steps to a secure wireless network
- 1 - Position your wireless router in a central location. The position of your wireless router can greatly affect the level of reception. It is always a good idea to experiment a little with where it is placed. Sometimes it is not as easy as putting the wireless router or access point in the middle of the room, office or floor. If you cannot locate it centrally just be aware that some PC's or Laptop in your home network may experience low signal levels.
  - 2 - Interference caused by walls and metal objects. If you are experiencing a weak signal check to see if the router is placed too close to a wall or floor. If it is the signal can be quite a lot weaker. If you can get the router off the floor and away from the wall. Also make sure that large metal items like fridges and metal filing cabinets are not in the way of your signal. {mospagebreak title= Replacing Equipment}
  - 3 - Replace your router or its antenna.

If you really want to get serious about your reception you can either change your wireless router to ones that can compensate for interference using antenna arrays. Or replace the omni-directional antenna in your current router. This can work as your router sends its signal in every direction. If you can direct the signal you may find that the reception level is much better.

4 - Replace your computer's wireless network adapter.

Of course there is another side to the reception of a wireless signal. What about the wireless adapter in you PC or Laptop? One great way to test if the wireless network in your home has a good enough signal is to get a friend with a Laptop that has a wireless adapter in it to see if they are able to get a great signal. If they can you may need to replace your adapter! Ouch..

Note: Always try to use the same manufacturer for both the router and adapter.

5 - Add a wireless repeater.

So far we have tried to get the best signal out of our existing wireless router. If we have been unsuccessful then a good (not very cheap) solution is to purchase a wireless repeater. This will allow the signal to cover a greater "foot-print" that with a router on it own.

Note: Make sure you have tried everything here first before spending any of you hard earned money! {mospagebreak title=Tweaking Performance}

6 - Change your wireless channel.

Wireless routers can broadcast on several different channels, similar to the way radio stations use different channels. In the United States and Canada, these channels are 1, 6, and 11. Just like you'll sometimes hear interference on one radio station while another is perfectly clear, sometimes one wireless channel is clearer than others. Try changing your wireless router's channel through your router's configuration page to see if your signal strength improves. You don't need to change your computer's configuration, because it'll automatically detect the new channel.

7 - Reduce wireless interference.

If you have cordless phones or other wireless electronics in your home, your computer might not be able to "hear" your router over the noise from the other wireless devices. To quiet the noise, avoid wireless electronics that use the 2.4GHz frequency. Instead, look for cordless phones that use the 5.8GHz or 900MHz frequencies.

8 - Update your firmware or your network adapter driver.

Router manufacturers regularly make free improvements to their routers. Sometimes, these improvements increase performance. To get the latest firmware updates for your router, visit your router manufacturer's Web site.

Similarly, network adapter vendors occasionally update the software that Windows XP uses to communicate with your network adapter, known as the driver. These updates typically improve performance and reliability.

9 - Pick equipment from a single vendor.

While a Linksys router will work with a D-Link network adapter, you often get better performance if you pick a router and network adapter from the same vendor. Some vendors offer a performance boost of up to twice the performance when you choose their hardware:

10 - Upgrade 802.11b devices to 802.11g.

802.11b is the most common type of wireless network, but 802.11g is about five times faster. 802.11g is backward-compatible with 802.11b, so you can still use any 802.11b equipment that you have. If you're using 802.11b and you're unhappy with the performance, consider replacing your router and network adapters with 802.11g-compatible equipment. If you're buying new equipment, definitely choose 802.11g.

Wireless networks never reach the theoretical bandwidth limits. 802.11b networks typically get 2-5Mbps. 802.11g is usually in the 13-23Mbps range.

{mospagebreak title=Choose Equipment}You can download the rest of the Guide as a registered user. In the rest of the guide we cover: Tips on choosing equipment for a wireless networkHow to set-up and connect to your network