

July, 2011

## White Paper Routers – Wired and Wireless

So! You're contemplating ordering High Speed Internet or you have High Speed Internet linked to a single computer. Either way, you're considering the purchase of a one or more additional computers or gaming devices and you're wondering how to make all of the devices share the High Speed Internet connection....Well, here are the answers to these questions!

### Overview

This paper will provide basic education about the function of a router, the differences between a wired and a wireless router, the approximate cost of these devices and our opinion about the Brand(s) to buy.

### What is a residential router?

A residential router is device which permits multiple computers in the residence to share a single high speed Internet connection. It permits the multiple computers in the residence to live on a residential network, share data and printers on that network and to pass traffic to the Internet over a single Internet connection.

There are two basic types of residential broadband router:

- a) A wired router that connects multiple devices together and to the Internet via Ethernet cables
- b) A wireless router that does everything a wired router does plus connect wireless devices together with the wired computers and to the Internet.

### Wireless Router Types:

There are currently a variety of wireless router types, some of which are:

- a) Wireless 802.11G routers
- b) Extended Range Wireless 802.11G routers
- c) Wireless 802.11N routers
- d) Extended Range Wireless 802.11N routers
- e) Dual Band Routers

The "N" devices are designed to help overcome connection issues in the home caused by furniture or other obstacles. N Routers require N wireless adapters in the connecting device(s) in order for N Features to become operational. If the device(s) are B or G devices, most N routers will successfully support those devices (e.g. provide backwards compatibility)

### Router Brands and Prices

Unlike many products, buying the least expensive router may NOT be a wise decision. First, the average consumer cannot bring a router home and program it and make all of the computers in their home talk to it. Consumers may call the router manufacturer's technical support line to seek assistance, but, in many cases, the consumer will be talking to an individual who may be hard to understand or may simply be speaking terms about which the consumer has little or no comprehension.

Alternatively, consumers may ask AZCI.net installers to install the router and the attached PCs, wired or wireless, which we will gladly do for a modest fee (ask when you call us).

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## Powering Community Hi Speed Internet

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Currently as of 07/11, we recommend the DLINK Wireless “N” router, the Netgear and the Cisco Linksys. Retail prices fluctuate periodically between \$69.00 and \$39.00, depending upon store sales. We superficially do NOT recommend a Belkin router.

### **Wireless Network Adapters**

If you have an older laptop, manufactured before wireless adapters became standard equipment or a desktop computer, then you may need to buy a wireless network adapter for your computer. The easiest to install are the USB connected wireless network adapters. Currently, we recommend the DLINK Wireless “N” network adapter, Netgear or Cisco Linksys. Their prices fluctuate periodically between \$69.00 and \$39.00, depending upon store sales. We specifically do NOT recommend Belkin wireless adapters. The three recommended adapters come with available toll free technical support or you may ask AZCI.net to install and configure this product for a modest fee.

### **In-Home Network**

Once the router and all of the computers are installed, you have built an in-home network. Periodically, you may encounter a situation where one or more computers cannot connect to the Internet. It is important to remember that in a network, “any link in the chain” can be causing the problem:

- a) The internet connection supplied by your ISP
- b) The router to which the Internet is connected
- c) The link between your computer and the router.

So, to isolate the problem and restore your service, try these helpful hints:

- a) Remove the power from the Internet service (ISP supplied equipment). Wait 5 seconds and then plug it back in
- b) Remove the power from the router. Wait 5 seconds and then plug it back in
- c) Finally, reboot your computers.

If that does not restore service, then contact your ISP for support. AZCI.net is available at 520-233-7400 or [support@azci.net](mailto:support@azci.net) or text 520483-8981.

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