**Troubleshooting Wireless Connectivity**

There are a few common issues with wireless networking you can look at if you’re having

problems connecting to your wireless network. Following are a few problems and solutions:

**Ensure that your wireless network card is enabled.** Here’s one I see regularly: Many

newer laptops and tablets have either a switch or a hot-key setting that enables and disables the wireless device. Often, a laptop switch will somehow be turned off, or a user will somehow

press the key sequence to shut off the PC’s wireless radio. The Physical Layer is always

a good place to start looking.

**Ensure that your wireless card and the access devices are compatible.** Cards that are compatible

with the 802.11b standard can connect to only 802.11b or 802.11b/g access devices

configured to accept b. Cards using 802.11a can connect to only 802.11a or 802.11a/b/g

access devices configured to accept a. An 802.11n card needs to connect to an 802.11n

access device for efficiency, although most will autonegotiate to the best specification

available.

The specification you’re using on the card has to be available and turned on in

the wireless access device.

**Ensure that the access point signal is available.** I find radio frequency (RF) to be a funny

thing. You can’t see it, and you assume that it is everywhere. Not a good assumption. The

output power of the signal might be fine, but the RF power is absorbed or attenuated as it

goes through walls, insulation, or water. You need to make sure there is nothing that might

be causing interference of the wireless signal.

**Ensure that the security parameters are configured alike.** The SSID, encryption type,

encryption algorithm, and passphrase/security key have to be set the same on both the wireless

access device and the wireless client. Here’s another one I see quite often: In the desire to

make the initial setup and the secure setup easier for end users, some hardware vendors have

a nice little button that allows the network access device to negotiate a secure set of parameters

with the client. In one instance, after the wireless network had been working correctly

for a while, a failure showed the parameters to be incompatible, thanks in large part to

someone pressing the easy button just before the failure.

**Ensure automatic connections if the SSID is not being broadcast.** If you are having

trouble connecting to a network that does not broadcast its SSID, select the Connect Even

If The Network Is Not Broadcasting check box in the Wireless Network Properties dialog

box. I have solved several wireless network connection issues with this fix.

**Consider how a wireless router interfaces with hard-wired devices.** Many times when I

go into a small or midsize network, I find that the company (or home user) is connected to

a multifunction type of device. The wireless routers that are often deployed are really quite

technologically sophisticated. They have switch ports for connecting hard-wired devices on

the private network as well as an Internet port to connect to the outside world. The wireless

portion of the device is like another switch port on the private side, allowing the wireless

devices to interact with the hard-wired devices.

When I troubleshoot and eliminate issues, I start with the hard-wired devices and

see whether they can communicate to each other and the outside (the other side of your

wireless router). Try to communicate between the hard-wired and wireless as well, to

eliminate the router components. It’s also not the best idea to use the wireless network to

configure the wireless devices. Configuring through the wireless interface will ultimately

cause you to lose connectivity in the middle of a configuration and may force you to connect

with the cable, often leaving the access point unusable until you complete the task

you started wirelessly.