Guide to Wireless Networking and VRI

Running a VRI setup over a wireless network is a common scenario, especially in large hospitals where VRI stations are carried into or carted into patient rooms, recovery rooms or other locations. VRI Direct supports VRI over wireless networks with ease.

VRI call quality over wireless networks is affected by several different factors, including:

- The quality of the wireless access point
- The strength of the wireless signal
- The wireless protocols supported by the wireless access point (802.11n, g) and by the VRI stations
- The amount of local traffic running across the wireless network
- The distance between the VRI station and the wireless access point

The following are some guidelines and suggestions for wireless network management and use. The guidelines should help you make the best of your VRI experience on wireless networks.

Wireless Routers and Access Points

There are many different wireless routers on the market today (routers, bridges, extenders, etc.). Consider the following when designing a wireless network and choosing an access point:

1. Routers, bridges and other access points should support the 802.11n standard, as should the computers, laptops and tablets used to place VRI calls. Other standards result in slower transmission speeds.
2. Dual-band routers provide additional transmission capacity and are a great fit for audio/video streaming. Each VRI station would also have to support dual-band connectivity for this to be effective.
3. Some routers put out a stronger signal, and thus have a wider range, than others. Check the square foot coverage. For wireless-N routers, the typical coverage is 3000-6000 square feet. A few boast up to 10,000 square feet.
4. Larger buildings, floors, departments, etc. should plan to set up multiple access points whose coverage overlaps each other to minimize dead spots.

Here's a list of consumer- and small-business-oriented wireless routers with which we have had success:

D-Link Xtreme N Series: Comes in single-band and dual-band configurations; supports wireless-N (802.11n), wireless-G (802.11g) and wireless-A (802.11a) connections; 4-port integrated Gigabit switch; "Intelligent QoS" technology analyzes network traffic and prioritizes it based on latency and type of traffic (great for video applications). Examples: D-Link DIR-655; D-Link DIR-855.

Netgear N750 and N900 Wireless Dual-Band Gigabit Routers: Supports wireless-N (802.11n), wireless-G (802.11g) and wireless-A (802.11a) connections; 4-port integrated Gigabit switch; advanced features for improving quality of audio and video streams.

Cisco Linksys E4200 v2 Maximum Performance Dual-Band N900 Router: Supports Wireless-N (802.11n); 4-port integrated Gigabit switch; purchase with the RE1000 Wireless-N Extender/Bridge to increase areal coverage.

Wireless Adapters

Nearly all laptops and tablets sold today offer out-of-the-box wireless-N (802.11n) capabilities. Computers without built-in wireless network adapters can often be upgraded. Look for the following when choosing a wireless solution for your VRI computer:

1. Choose a solution that matches the wireless communication standards supported by your wireless network. Ideally, your wireless network will support the 802.11n standard; you would want your computers to also support this standard.
2. To take advantage of maximum speeds between your wireless adapter and your wireless router/access point, use a wireless adapter that is made by the same company as the company that manufactured the router. For example, D-Link claims that you can double your connection speed by using both a D-Link wireless router for your network and a D-Link wireless adapter for your computer. Netgear makes similar claims with its RangeMax series.
3. Many USB wireless adapters (also called "wireless dongles"; for example, the D-Link DWA-160) have a limited range due to a lack of external antenna, and we haven't had great success with them unless the USB adapter and the wireless access point are relatively close to each other and nobody moves the VRI station around.

   If you choose a USB wireless adapter, select one with an external antenna or use a short USB extension cable so that you can plug the USB adapter into the cable, then plug the cable into the computer, and then move the USB adapter around to get better reception. Or, choose a wireless card that you plug into the computer motherboard â€" wireless cards tend to be higher power than USB adapters.

0. Here are some options (Google each one to find stores and prices):

   º Amped Wireless - High Power Wireless-N 600mW USB Adapter
   º Amped Wireless - High Power Wireless-N 600mW Pro USB Adapter (bigger than the standard one, above)
   º D-Link DWA-552 32-bit PCI Xtreme Desktop Adapter
   º Netgear N900 Wireless Dual Band USB Adapter WNDA4100
   º Netgear N300 Wireless PCI Adapter WN311B
   º TP-LINK TL-WN722N Wireless Adapter

   º Linksys WMP600N Wireless-N Dual-Band PCI Desktop Adapter
   º Linksys AE2500 Wireless-N Dual-Band USB Adapter
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