Expert IT Solutions Newsletter

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Here is our second newsletter for the year (slightly belated). This time around we'll look at wireless networking and how to choose a router for business or home.

Wireless networking

Perhaps this area of IT, more than others, have radically changed over the last ten years. Slow, clunky and with poor connectivity the first attempts at letting devices connect in the office has now been replaced with fast, reliable (mostly), ubiquitous and free connectivity. Whether it's the library, Starbucks or McDonalds, they all offer your smartphone, tablet or laptop a connection to the wider world.

Given the explosion in devices and the hunger for connectivity, let's see how wireless technology has changed and improved to provide decent connections everywhere.

Wireless tech goes by 802.11 standards, with the first (slow and unreliable) one being 802.11b, followed by 802.11a (only geeks can be that illogical) and then 802.11g. Today the established standard is 802.11n with 802.11ac (wave 1) coming in newer devices. The difference between all these numbers is speed (megabits per second), range and which frequency they operate at, with the two popular bands being 2.4 Ghz and 5 Ghz. That distinction is blurring however as modern Wireless Access Points (WAP) often use both bands.

So, depending on the age of your device it'll "speak" one or more of those standards and as long as the WAP supports at least one of those, the device will connect.

Another issue is security, with wired networking the boundary of being able to listen in to data traffic stops at your office wall, with wireless it's easy to sit outside your office and connect to your wireless signal for eavesdropping. Early attempts at stopping this was soon broken by curious hackers. Modern WAPs support WPA-PSK (WiFi Protected Access, Pre Shared Key) and WPA 2-PSK. These are more secure but given the right tools both standards have been shown to be hackable.

The issue lies in the Pre Shared Key (PSK) which is the password that you enter the first time you connect a device to a new wireless network. This is set on the WAP and that's the only way access is controlled. Larger businesses will work around this issue using a pass through model where the WAP doesn't actually authenticate the connection but rather passes the details to a server that decides if you should have access or not. The benefit of this model is also that because all WAPs talk to the same server, you can seamlessly move around a larger office (called "roaming) and be transferred from one WAP to another depending on signal strength.

So what should you look for in a WAP? Obviously it should support 802.11ac and WPA 2 and dual band (2.4 and 5 GHz). Easy management is a bonus and the ability to attach an external (stronger) antenna can be useful. We recently replaced an aging WAP in an office with a Netgear WAC 120 and everyone's been very impressed with the reliable and fast connection. Sometimes of course you don't even need to buy a separate Access Point and simply have a router for your internet connection with the wireless networking built in.

Routers

No - not the type that chisels out holes in timber or metal but the device that "routes" network traffic from your internal network to somewhere else - in most cases the internet through your ISP.

There are really two classes of routers for small businesses or home offices, "home" quality ones and "business" class ones. The main difference (although there's a fair bit of grey area) is the amount of control over settings, the quality of the firewall and the amount of reporting and inspection of internet usage.

We have installed the Netgear 9S as an example at two different clients over the last couple of years. This business class (sub $ 1000) firewall provides ADSL 2+ connectivity, wireless networking, scans the data stream for viruses (it's much better to catch malware on the router, before it even reaches the server / client devices), provides the ability to have a separate wireless network which can only access the internet, not internal systems (for visitors) and comprehensive reporting on what sites are most visited, highest downloading user etc.

For a home office we have had good experience with Netgear and Linksys routers, less so with Dlink and Belkin.

If you are looking to upgrade your router in the office to a more comprehensive and secure solution please don't hesitate to email or call me.

In the next newsletter we'll look at cloud services integration and Customer Relationship Management (CRM) solutions.

If you have any questions or suggestions for topics you'd like covered in this newsletter, please email me.

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