TECHNOLOGY TODAY

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Inside This Issue…

Routers are traffic cops

Routers are the traffic cops standing up on the block in the middle of the intersection between the internet (your modem, Suddenlink, AT&T, etc) and your internal network, your PC). It routes each packet of information going to and from the internet to the right place so that when you click on MSN on your PC at the same time your child clicks on World of Warcraft on theirs you actually get the MSN page and not the WOW site.

The router cop makes that happen.

Routers and UTMs and Firewalls

This is one of those hazardous newsletters. I'm writing about a fairly complex subject and I know there will be some of my peers reading it. But the information is obviously for our customers. So I've got to be sufficiently technical without putting everyone, including myself, to sleep.

There was a time not that long ago when routers were rare. The primary function of a router, doling out addresses to internal computers so they can all use the same external portal to the internet, was not so important when the only way to get on the internet was through a dial up modem. And, really, who needed more than one PC in a household?

Ah, how things have changed. Now we've got two, three or more PCs and laptops in our homes and everyone has a phone that is also on the network. Routers do a lot more work now and as the first line of defense are facing increasingly aggressive attacks from the outside. As a result, routers have become more sophisticated. Even most home routers have the ability to run antivirus within the router. Although few households use this feature it does put another roadblock to help keep the bad guys out. These routers a more expensive but may be worth it to some.

Once we get to the business level a more sophisticated router is needed. There is a huge difference between business class routers and residential routers but, again, only the more expensive choices have integrated antivirus. The big difference with business routers is they can be remotely accessed, configured and maintained. This is a huge benefit when you can call your IT support (think Friendly Connections IT when you say that) and the support tech can remote into your router to find out why your Internet is slow (it's the guy in the back office watching Netflix!).

Bill Schubert

Unified Threat Manager

This device is so much more sophisticated and full of rich security and performance features they don't even call it a router. Until recently these were called 'firewalls' but they grew out of that too. I'll talk about the ones we sell but the field is pretty full becoming more so as the new HIPAA standards and PCI/DSS (merchant services) standards are coming online.

We sell Sophos UTM's. They are enterprise level devices that act, on their simplest level as routers, information traffic cops. But they do so much more. About half of the functions of these devices are security related, the rest of the features are related to performance.

1—Antivirus. They have integrated antivirus. This is the first level of active threat intercepts. They block sites that users attempt to access if they meet the criteria of malware. There is an ongoing cost for this. Sophos sells a three year license with their UTM's.

2—Firewall. When a user clicks on a web site link the computer sends out a request to the server hosting the site to reply with the requested information. A firewall registers the outgoing request and the responding answer. If an 'answer' comes back without a preceding request it is blocked by the firewall. This is hopefully what happens when someone tries to hack into your network. The whole picture is more complex but the firewall and antivirus work hand in glove as the first layer of defense of your business.

3—Antispam. The UTM also performs some antispam functions. This is best handled by the email host (usually Office 365 if you're a small business) but the UTM also helps here.

4– VPN. This stands for Virtual Private Network. If your business has two locations and you want to run them as one business, VPN is the way that works. It establishes a secure pipeline through the internet between the locations so that everything works as if it were in the same building. With the availability of cloud databases and email, VPN's are not seen as frequently but are sometimes necessary.

5– Load balancing. Is someone on your team using up all the bandwidth of your internet connection watching 'training' films? A UTM can fix that by throttling the available bandwidth by PC, by group or by application so that everyone has a fair share of what they need. This is less important as more bandwidth is available but we still see it.

5a—Quality of Service. If you've got Voice Over Internet Protocol as we do, essentially telephone service running through the internet, then QOS is critical. The UTM can be configured to wall off a segment of the available bandwidth so that it can only be used by the VIOP phone service. Voice quality is far more sensitive to internet slow downs than is your standard web site. The UTM manages this flow ensuring that telephones always have priority service.

6—Logging. Maintaining an audit of security events is required by HIPAA and for anyone running credit cards through their internet connection (PCI/DSS). If there is a security breach, the auditors will want to have immediate access to a year's worth of security events including everything that has been changed or updated in your firewall. They want to know that virus definitions have been updated and that security holes have been plugged. All businesses should be logging their IT security.

7—Remote access. We support our Sophos partners remotely through a portal in which was can see what is going on in the back of the client's network, manage updates and shape the throughput and Quality of Service. This is a huge advantage of the Sophos UTM system. We can be immediately responsive to our partner needs and ensure their security is maintained.

We not only sell these UTM's outright but also provide them with a very reasonable monthly contract. Give us a call and we'll quote one for your business.

Ubiquiti business class router

Somewhere in between the residential TP-link and a full Sophos UTM lies the business class routers made by Ubiquiti. This company reached widespread usage and nearly universal acclaim in the tech world over the past couple of years.

We began using them last year and now deploy them in all businesses who do not quite require the complexity of a UTM. Like the UTM they can be set up for remote management. Although they don't have all of the features and, of course, they cost a lot less.

They are very secure, very flexible and also able to shape bandwidth. While they do not have internal antivirus they do provide an outstanding firewall. Setting up a Ubiquiti router is fairly complex and not configurable by the customer. Deploying these requires a fairly thorough understanding of networking concepts.

Like most UTM's they do not have integrated wireless capability. Rather they have separate 'Access Points' which broadcast the wireless signal. This is in general a better solution for businesses. It allows the router to be located near the modem and allows the wireless access points to be moved to a central place in the business or even on another floor to better provide a strong signal throughout the business. To facilitate this the router provides something called Power over Ethernet. When configured it allows the electricity that powers the remote Access Point to be run through the network cable that attaches to the router. So your business does not have to have a power outlet in the ceiling in the middle of the office to run the Access Point. This allows a much simpler deployment of wireless signals. We have found this to be critical in such businesses as restaurants with guests who want their phones to be on wireless internet or in businesses hosting conferences. Having an access point in the middle of the restaurant or conference room solves all kinds of problems.

One rather extraordinary thing that Ubiquity can do well is broadcast between buildings. Using a direction oriented Point to Point "Beam" broadcaster and receiver, the business internal network can be connected without a physical wire between the two buildings. Once set up it can be managed remotely and results in performance rivaling that of a physical connection. In most situations the connections ends up costing less and being more flexible.

Two speeds of networking

Inside the walls of your home and business the speed of your network is entirely dependent on the type of router you have and how everything is set up. The lower speed is called Fast Ethernet or 10/100 (I'm guessing that Slow Ethernet was dial up?). Nearly everyone reading this is running at this speed. It works fine unless you are a high end gamer or stream movies from your server to your PC.

We have Fast Ethernet here in our shop and it works fine.

The other term you might hear is Gigabit. Generally Fast Ethernet is up to 100 Megabits per second, Gigabit is 100 Megabits per second. It requires new router, new network cards for the PC and new switches.

The upside for businesses and gamers? A Fast Ethernet connection will take 2.5 minutes to move a 1GB file while a Gigabit connections will do it in 15 seconds.

The benefits for some businesses are there but not for most homes.

The Lion and the Elephant

A lion woke up one morning feeling rowdy and mean. He went out, cornered a small monkey, and roared, "Who is mightiest of all jungle animals?"

The trembling monkey says, "You are, mighty lion!"

Later, the lion confronts an ox and fiercely bellows, "Who is the mightiest of all jungle animals?" The terrified ox stammers, "Oh great lion, you are!" On a roll now, the lion swaggers up to an elephant and roars, "Who is mightiest of all jungle animals?"

The elephant snatches up the lion with his trunk, slams him against a tree half a dozen times, then stomps on him.

The lion lets out a moan, lifts his head weakly and hollers, "Just because you don't know the answer, you don't have to get so upset about it!"
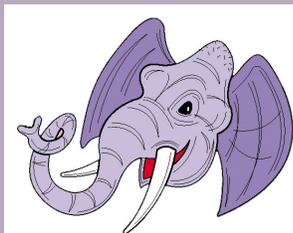
TP-LINK N450 Wireless
Wi-Fi Router, Up to 450Mbps
(TL-WR940N) - V3

The answer has changed over the years but right now we are deploying the TP-Link router into residential homes.

It is a reliable router, easy to set up, easy on the pocketbook and it has excellent wireless range and speed.

We've been through a number of different residential routers over the years, Linksys, Buffalo, etc. But the TP-Link line has really turned out to be the best.

The set up for this is fairly straightforward and many of our customers could probably do this themselves. BUT there are a number of security features and processes in setting this up that it is far more secure when we do it for them.

Getting wireless printers and other wireless devices set up correctly can also be more than a little annoying. So let's do it right the first time. Give us a call and let's talk security and performance on your home network!