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Located in historic downtown Wapakoneta, Ohio, FNGi has been instrumental in developing and supporting Internet Networks across the U.S. since 1993. The FNGi team can assist you with all phases of your Internet Network from initial planning through long-term support.

www.network1.net
800.578.6381



Join us this month as we wax nostalgic about where the internet and technology has been and the amazing growth we've seen over the last 19 years! One very dramatic change is the depletion of IPv4 addresses and how we can make your dive into the IPv6 pool a safe and easy one. We also cover some great tips on Anti-Virus software, news about Cryptolocker being cracked and new updates to the DHCPatriot addressing issues with Microsoft Internet Explorer's special "404" page.



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YOUR CONNECTION TO FIRST NETWORK GROUP NEWS

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Growing & Changing

Greetings from First Network Group and I hope everyone had a safe and happy summer. As we progress toward our 20th anniversary, I am reminded of our early days and how much technology, your business and our business have all changed. I want to share some of my reminiscences that I am confident many of you will recognize.

HORSEPOWER.

The first server First Network Group ever deployed for an ISP – a single Sun SPARCServer that originally handled all services at rollout – had roughly 1/10th performance as my current iPhone 5S. The entire server had a quarter of the storage than my phone. Then there is the huge difference in cost. Over time, we saw a trend of dedicating hardware, 1 logical server = 1 physical server (e.g. mail, DNS and web each on their own devices). Today that trend has changed yet again. Our IT Services team regularly designs and deploys virtualization, which provides fault tolerance, expandability, and improved efficiency by hosting numerous virtual servers on very few physical systems.

PIPE.

In the early years, most of First Network Group's client's were small independent Telephone companies. When it came to getting them connected to the world, many had deployed one or two DS0 (56 kb/s) "specials", usually circuits that were dedicated to lottery or State government. In that environment, it was hard for people to imagine who would ever need the capacity of a DS1 (1.5 Mb/s). Today, with the transitions from dialup to DSL to Fiber connections at 100 Mb/s and beyond and with inexpensive WiFi systems running at over 100 Mb/s, the demand for ISP throughput has never been higher. Now, in 2014, we serve

clients with multiple gigabit connections to the world that transfer in a day what used to be transferred in a year.

CUSTOMER ATTENTION.

Like many of you, I was a PC guy. I once taught classes in navigating MS-DOS. Cory reminds me that I was running FreeBSD and resisting the graphical interface of Windows 3.1, preferring text-based Lynx for HTTP and finding it hard to imagine a modem fast enough to make web graphics useful.

We have seen an explosion in content on the Internet and the number of devices we use to connect. There was a day when First Network Group supported only a very narrow range of hardware and software. Today, our Tech Support/Customer Service Center works with every major operating system on every platform. As I write this we are approaching our 900,000th end-user support call, covering the widest range of scenarios, from dial-up connection to DSL, Cable, FTTH, VOIP, IPTV and virtually any means to connect IP by any method for any reason. We now support more internet-enabled video game consoles than we supported versions of PC Operating Systems when we started! Our projections forecast our one millionth call in 2015 - and we are ready to complete it!

We have taken an amazing journey in the last 19+ years. I've known some of you from the beginning, while some others have experienced First Network Group's expert level of service only more recently. We look forward to partnering with you for another 20 years of exciting growth and change in our industry.

Stephen C. (Steve) Walter
President/CEO

PERFORMANCE!
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Deploying IPv6 is vital. IPv4 still available, but not for long.



The Internet as a whole is getting closer to a time when all Internet service providers will be required to have fully working IPv6 networks in order to deliver a full and competitive experience for end-users. It is vital that everyone who provides network connectivity or services on the Internet start their IPv6 deployment as soon as possible.

While the global pool of IPv4 addresses has been depleted, the American Registry for Internet Numbers (ARIN), who is responsible for allocating addresses to entities in North America, still has a pool of addresses left. This pool, however, is dwindling quickly. If you need additional blocks of IPv4 addresses, it is crucial that it be addressed as soon as possible.

This topic that can seem very confusing at first. Our team can help you understand how IPv6 works, and assist you in determining a viable action plan for deploying IPv6 infrastructure to your networks, servers, and customers.

While IPv6 is a major focus going forward, IPv4 will still do some of the heavy lifting in the next few years. ISPs will need to continue to support and develop their IPv4 networks in parallel with IPv6 for the foreseeable future.

If you are an ISP that has a direct IPv4 allocation from ARIN and are being told that you cannot have any more addresses, First Network Group can help you understand the policies and assist in organizing your documentation in order to get the address allocation for which you qualify.

If you are assigned IPv4 addresses from an upstream provider, and are being told they have no additional addresses available, then your upstream provider is likely in a similar position. We can help by discussing this situation with your upstream provider, or assisting you in getting your own address allocation from ARIN.

Let us help you make your network the best it can be!

— Randy Carpenter
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If you'd like to receive our email based newsletter instead visit our website at www.network1.net and sign-up.

What's a Good Antivirus Program?

This is a question that we get asked a lot. It's natural to wonder if your security software is offering you enough protection and what alternatives you might have to shore up your defenses.

1. It has to work.

Make sure you are receiving regular updates to maintain its edge on new threats. If you're still getting infected with virus and malware then it's time to ditch your current solution and do some research about a better alternative.

2. Don't let it bog you down.

If your AV software is slowing your computer down (not just during scans), or negatively affecting legitimate programs and games, it's time to look for something new. Many modern security software products are lightweight while maintaining excellent protection.

3. Cost.

These days, if a program is billed as "free" it is often stuffed with money making adware products or other means for the company to monetize the install. However there are many valid and free alternatives for security software.

A great resource to find what solutions will be the best fit for your needs and level of protection is AV-TEST (www.av-test.org). They methodically investigate and test on several factors to give you a great overall sense of all the security software out there.

Our top picks for free, proven and tested Antivirus Software are:

Avira Free Antivirus
<http://www.avira.com/>

AVG Anti-Virus Free Edition 2014
<http://free.avg.com/>

Avast! Free Antivirus 9
<http://www.avast.com/>

FortiClient 5.2
<http://www.forticlient.com/>



Cryptolocker: Decrypted

By now you are probably acutely aware of the ransomware called Cryptolocker. Before it, most ransomware simply interrupted or stalled your computer to the point where it was mostly unusable. Cryptolocker on the other hand uses AES-256 level encryption to slowly start encrypting and locking your personal files.

This level of encryption would require modern computer technology 1000's of years to compute all the keys, permanently blocking you from your data. That is unless you follow the demands of the purveyors of this virus and pay them money to receive the key to unlock your files. This behavior has never been recommended as it emboldens others to craft stronger ransomware and you will never be guaranteed to receive the correct information.

Operation Tovar, an international law enforcement and IT endeavor, helped take the botnet down that Cryptolocker was relying on to spread and damage systems worldwide. But that did nothing to help to decrypt files on victims computers. FireEye and Fox IT have stepped in and began reverse engineering code gleaned from Operation Tovar and have been able to locate a vast number of the private key codes the attack uses.

FireEye and Fox IT have created a web page to help people affected a chance to decrypt their files. Where you can upload an encrypted file and it will test which private key is needed to decrypt it and provide you with the key and the necessary tool to run locally on your computer to perform the decryption.

While FireEye and Fox IT do not keep any uploaded files and have gone to extreme measures to provide a solution for this attack, they ask you to not upload any files with confidential information and to be aware that they might not be able to decrypt 100% of the files provided. With most infections though, the private key used for one file will be the one used the entire infected system.

Find out more at: www.decryptcryptolocker.com



404 Not Found

When you attempt to visit a page on the internet that no longer exists, the appropriate method is for the web server to pass along an error of 404 back to the browser so the browser can alert the user appropriately by presenting a 404 error page from the web server or re-routing to a different page according to the server configuration. On the DHCPatriot system, its necessary for a 404 error to redirect the browser to the login page.

While working on updates for version 5.4.0 of the software, we discovered an interesting quirk with Internet Explorer. If Internet Explorer is presented with a 404 error page and the overall size of that page is less than 512 bytes, then Internet Explorer will not present the 404 error page or complete a requested redirect. It will simply show a page that Microsoft has made indicating the error. Microsoft's chosen behavior for this is unique and it is unclear why they are making this distinction.

It's critical this function correctly for users to get the DHCPatriot login page and not be re-directed to Microsoft's "unknown"

internet dead end. This could have caused the DHCPatriot's Captive Portal login page to not display on users who had their homepage set to or were attempting to visit any invalid URL with a short length 404 response using Internet Explorer.

No other browser or platform combinations were affected by this issue, but since Internet Explorer is still used by a vast majority of users, this has the potential to affect a great many of them.

We have repaired this in the current build of the DHCPatriot software and it will be released in the next update cycle. No matter what URL is set in the browser, any browser, it will now display the login page.

— Darren Ankney
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