

Human Infrastructure is a bi-weekly magazine-style newsletter from EtherealMind.com with News, Views and Opinions on being a human in IT Infrastructure. Hit the [signup page](#) to subscribe and join 5,013 subscribers.

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ETHEREALMIND

Pieces of Human Infrastructure

A Newsletter on a Life in Networking

Issue Number 3
02/23/2015

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If you don't build your dream, someone else will hire you to help them build theirs - Dhirubhai Ambani

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Why is the Quality of IT Infrastructure Products So Poor ?

In the last few weeks, Apple announced record quarter shipping nearly 79 million iPhones. While this is an amazing example of design, manufacturing and business execution, the most impressive aspect is the **lack** of technical services needed to support the iPhone.

The iPhone gets used in the worst possible conditions for technology. Physically, a mobile phone is used varying environmental conditions - indoors and outdoors, hot and dry to wet and cold. The software is developed by thousands of independent developers, large and small using a toolchain provided Apple. Compare this with the full-stack products provided by incumbent IT suppliers to Enterprise IT. Our data centres are carefully controlled and managed yet reliability is a constant concern. The desktops & laptops we put into the hands of co-workers require constant maintenance and tools to keep them safe and reliable.

Apple Macbook computers also have a good record. I've never heard of Apple recruiting armies of small businesses to sell and support Mac to small business. They don't run costly reseller programs that put a middle man in

the transaction because the customers need advice. They have structured their products so that support is minimal.

We use software platforms from large corporations like Microsoft, Oracle and Cisco and applications developed by thousands of small and large companies around the world. Theoretically, these companies should produce products with the same quality and user experience that Apple produces in their iPhones and Macbooks. In practice, we simply don't get the anywhere near the same quality.

Enterprise IT is More Complex

When I raise this issue with employees of big companies, they splutter and complain. "Its not simple to make these products", "the testing is very hard", and that Enterprise IT is more complex that I can understand.

But this argument doesn't hold water. An smartphone is a highly complex device that is part of the a highly complex set of interactions with the 3G, 4G and wireless networks. The current generation of applications are as complex as any enterprise software solution.

Increasingly Enterprise looks foolish when costly corporate desktops have less reliability that an iPhone. **After the Sony Pictures hack, staff were using their smartphones to run the business.** Not a long term solution but a key point to notice.

Can't See the Change ?

Once upon a time, I believed that my laptop needed several things:

- Windows OS needed patching at least once a month
- Hardware replacement every nine months
- Expect at least one, maybe two hardware failures in those nine months from cracked case, faulty keyboard to total HDD failure (and data loss).
- reinstall OS to blank formatted HDD, install Apps, restore data, and reset all defaults once or twice a year.

Since I moved to Apple MAC hardware and software about five years ago, I've not had a single hardware failure, I'm on my third laptop, never had to reinstall the OS, and every upgrade allowed me to carry my settings and data forward. All of the things that seemed so **necessary** when I was using MS Windows XP are just a waste of my life time.

What I want

1. I want the confidence to say that it is **highly unlikely** that I will hit a bug. I accept that bugs are inevitable, but they SHOULD BE an exceptional event, not something that we *plan and budget* for. Can you believe that we actually expect bugs to be in the products that we buy ? And we run tests to see if we can find them ?
2. None of us should pay for buggy software. Customers should get refunds or rewards to find bugs. There are no incentives for vendors to make their products reliable. In fact we pay extra to get the bugs fixed in the form a service contracts.
3. We should not pay maintenance to fix a defective product, the vendor should **make good** on the promise of quality software & hardware. It should work as documented or promised.
4. Don't accept second best. Lodge complaints with your account manager (if there are any left) or some other means. Blog about your bugs, and your experiences in getting them fixed.

Best in Class Technical Support

If a product is really good, it would not require technical support. Cisco is particularly proud of its Technical Assistance Centre and receives high ratings for providing excellent customer support. Other successful vendors have well run, heavily funded and costly support operations that I use to **report bugs and product failures**.

The majority of those bugs should never have shipped or been found during well run testing. I can't help but wonder if post-sales technical support get more funding that product testing and quality control.

Apple makes their business successful and even more profitable by **not needing technical support**. Why can't Enterprise IT vendors do the same ?

*You can help me be successful by telling your friends and colleagues by forwarding them this email. They can head over to **signup page** for the list (URL: <http://eepurl.com/JrXA5>).*



Vendor News

Vendors have a lot to say but not much worth listening to.
Picking signal from the noise.

Vendor News

Selection on news from vendors that might be worth looking at. Looking for unusual, exciting, weird or amazing without the ho-hum.

Gartner Catches Up

The historians over at Gartner have released a report for people who have more money than skills on **Fixed Form Factor Switching in the Data Center** high that the Ethernet Chassis switches are no longer mandatory in the data centre.

I haven't read the report but the highlight is that ECMP network designs replaces the need for chassis switches.

I say “historians” because here is my article from April 2011 highlighting the same issue in quite a bit of detail: [Musing: How many 10Gigabit Ethernet Ports do you really need ? - EtherealMind](#).

It has been obvious for quite some time that your data centre doesn't need chassis switches because you don't need dozens of access switches when using 10GbE. In fact, most data centres barely need more than a handful of 1RU format switches, maybe a dozen at most including the backbone/core.

I don't like chassis because of their complexity when upgrading them. It's much easier, more reliable and far more predictable to simply replace 1RU switches than to replace a line card in a chassis.

The Road to HTTP/2 Looks Smooth

Google has announced support for HTTP/2 in Chrome and depreciation of SPDY and

HTTP is the fundamental networking protocol that powers the web. The majority of sites use version 1.1 of HTTP, which was defined in 1999 with RFC2616. A lot has changed on the web since then, and a new version of the protocol named HTTP/2 is well on the road to standardization. We plan to gradually roll out support for HTTP/2 in Chrome 40 in the upcoming weeks.

[Chromium Blog: Hello HTTP/2, Goodbye SPDY](#)

Cisco Has Yet Another SDN Strategy

If you aren't tired of hearing about SDN from Cisco then it's time to start looking at **yet another** SDN product from Cisco. This time, the Nexus 9000 products have had a new version of software that uses EVPN (BGP) to propagate VXLAN path information over an ECMP backbone. This appears to

be significantly different from the ACI method for the distributed control plane that Cisco uses.

Cisco Border Gateway Protocol Control Plane for Virtual Extensible LAN - Cisco

Confused ? Yeah, me too. I will try to spend some time looking into this but I'm tired of learning each different Cisco SDN strategy before they release yet another one. This makes six, I think, and it is no longer clear which strategy Cisco will eventually pick at the winner. ACI doesn't seem to be doing all that well if they continue to release competing strategies.

Maybe I'm missing something and I will work it out in a few weeks.

Sponsor Piece

No sponsor this week.

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Crunchy Chewy Pieces

My personal views on changes in the market or technology on topics, issues or technology that I am actively working on or researching. All original content that I will write for the magazine.

Owning Microsoft Windows

I had a reason to run MS Windows this week and opened my Desktop virtualization tool to spin up my Windows XP instance. While I was waiting for the updates (took over an hour for 4 reboots and updates) I thought I might buy the latest version and checked out Amazon.

I got quite a shock.



The screenshot shows the Amazon.co.uk product page for Microsoft Windows 8.1 Pro. The page includes the Amazon logo, navigation links, and a search bar. The product title is "Microsoft Windows" by Microsoft, with a platform of "Windows 8" and a rating of 4.5 stars from 34 customer reviews. The price is listed as £144.68 with free delivery in the UK. The edition is "8.1 Pro", and the "8.1 Pro" option is highlighted with a red box. The page also features a list of features and a "Want it tomorrow, 10 Feb.?" promotion.

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- instantly switch between your desktop and apps with the start button
- search with bing and quickly act on results from across windows and the web

Am I going to pay £150 for a copy of MS Windows to run on my Mac ?

Do I really want to pay £150 for a Windows to run on my laptop ? I have a Windows Office 365 subscription that gives me MS Office licenses for the family since I occasionally use MS Office to decode the proprietary format of

documents from other people so I don't need office.

No, I don't. In the end, I found a way to work around this and I still don't need to use Windows. MS Windows is not worth £150 to me when Apple is giving me the same thing for much lower price. And Linux is free.

The word "infographic" is written in a white, lowercase, sans-serif font. The letters are set against a background of diagonal stripes in various colors: teal, yellow, purple, green, orange, red, and maroon. The stripes are arranged in a repeating pattern that creates a sense of movement and depth. The word is centered horizontally within the graphic.

infographic

Infographic: Effort to Make Multicast Work

Because infographics are all the rage right now I figure I should do some too.

**HOW MUCH
VENDOR EFFORT
IT TAKES TO MAKE
MULTICAST WORK**

© 2015 ETHEREALMIND.COM

**How Many
Customers
Actually
Use
Multicast**



Packet Pushers

Testing a New Podcast

As part of researching and preparing for Packet Pushers, Ethan and I receive briefing from vendors on their technology for several hours a week. Generally, we don't have time to write up every briefing because of the time it takes, lacks relevance or may be a smaller point in the overall industry timeline. But we spend time discussing why, what and how of what each vendors is doing.

This week, Ethan and I decided to trial a podcast on the discussion. We published **Community Show – Greg's & Ethan's Briefing Review for February 2015**. We will record a few shows in the coming weeks and decide if this worth discussing into the future.

You can subscribe to **Community Channel in iTunes** specifically on iTunes or with RSS <http://packetpushers.net/category/podcast-post/community-podcast/>



Internets of Interest

Internets of Interest

Moving Away From Ever-Insecure Adobe Flash player

Google's Youtube finally moves away from using Adobe Flash as the default media player. For network engineers, this means that blocking access to online video got more complicated because HTML5 video streams over HTTP and previous methods of block the Streaming Video on 1975 will no longer work. But security professionals who know that the Flash player has a major source of exploits and vulnerabilities will be pleased. Companies who use **Flash super cookies** to track users will still be able to use HTML5 to do the same thing.

Of course, you can upgrade to a "Next Generation Firewall" that is able to perform deeper inspection into the HTTP stream but encryption is becoming more common which prevents inspection. An article for another day.

YouTube Engineering and Developers Blog: YouTube now defaults to HTML5

If Carpenters Were Programmers

On the pointless nature of technology interviews who want people with experience on the latest hot technology:

Interviewer: But you're not a walnut guru?

Carpenter: Well, I'm a carpenter, so I've worked with all kinds of wood, you know, and there are some differences, but I think if you're a good carpenter ..

Boycott Docker

Docker is a good idea but there is plenty wrong with the technology. For example, the existing networking connectivity is basically NAT to each container using the Linux Bridge and there is a total lack of isolation and poor performance. Its AWFUL.

This article expands to compare with VMs and integration. Written with a passionate *nix slant its still a good roundup from reasons why you don't want Docker.

There isn't enough criticism of Docker IMHO.

boycott docker

HP Gloats About Cisco ONE Licensing

Cisco announced long overdue changes to its complex, incoherent and costly licensing schemes across the many different businesses. For the last 5 years, each business unit inside the Cisco conglomerate structure has been using software licensing as means to increase revenue and profits but there is no coherent plan. Each division has different ideas about what should included or excluded. Increasingly, I have found it takes more and more research time to decide which licenses are needed for a given task.

HP Competitive has never been subtle and they are taking the opportunity to gloat about HP Networks much simpler and easier to live with strategy.

At the same time, Cisco is trying to dress this up as innovation or market leadership. It's not. Even with this revamp, Cisco still lags a long way behind HP's licensing models, which are simple and straightforward, and have been since Day 1. We don't push you into purchasing "suites" with second-class feature sets that you may or may not want and didn't ask for. When you buy our

hardware, we don't tell you "all the power's there, but you can't use it unless you pay us extra." We say, "here you go, enjoy, take full value from our product." We've never believed in nickel-and-diming.

Cisco isn't the only company that can be aggressive when selling its product and HP is making an attempt here. What do you think ?

HP Blogs - Cisco tries to ease Cisco-created customer pain po... - The HP Blog Hub

US and UK Spy Agencies Stole the Crypto Keys to SIM Cards

The Intercept reports that spy agencies have stolen the root certificates for SIM cards and can transparently gather data from any smartphone.

The privacy of all mobile communications — voice calls, text messages and Internet access — depends on an encrypted connection between the cellphone and the wireless carrier's network, using keys stored on the SIM, a tiny chip smaller than a postage stamp, which is inserted into the phone. All mobile communications on the phone depend on the SIM, which stores and guards the encryption keys created by companies like Gemalto. SIM cards can be used to store contacts, text messages, and other important data, like one's phone number.

Additionally, the spy agency targeted unnamed cellular companies' core networks, giving it access to "sales staff machines for customer information and network engineers machines for network maps." GCHQ also claimed the ability to manipulate the billing servers of cell companies to "suppress" charges in an effort to conceal the spy agency's secret actions against an individual's phone. Most significantly, GCHQ also penetrated "authentication servers," allowing it to decrypt data and voice communications

between a targeted individual's phone and his or her telecom provider's network. A note accompanying the slide asserted that the spy agency was "very happy with the data so far and [was] working through the vast quantity of product."

The Great SIM Heist: How Spies Stole the Keys to the Encryption Castle

I welcome your feedback, questions and corrections. Send an email to humaninfrastructure@packetpushers.net and I will write a response.

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About Piece of A Human Infrastructure

A strongly curated newsletter produced by Greg Ferro that contain observations and thoughts on IT Infrastructure with a networking focus that he has seen, done, discussed, reviewed or just simply found on the Internet.

The format is structured but flexible (like any magazine) and will change over time as I settle into a routine of capturing ideas, topics that seem relevant and ultimately finding patterns that seem to be interesting to you. Your feedback will drives changes so don't hesitate to email with feedback or ask followup questions for the next edition.

About Greg Ferro

Greg is a co-host of the Packet Pushers Podcast a weekly podcast on Data Networking which has over 8000 subscribers. He blogs regularly at EtherealMind.com for the last eight years and is pretty well known these days. He also write as an analyst for Network Computing and Gigaom Research. He speaks at major events on Data Centre Design, SDN and life in technology. He moderates panels, advises customers and technology companies.

He works as a part-time network engineer in the UK on a freelance basis. Because real work configuring routers and switches remain not only a passion but important to keeping touch with the industry.

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