

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.

[View this email in your browser](#)

# ETHEREALMIND

## **Pieces of Human Infrastructure**

A Newsletter on a Life in Networking

**Issue Number 2**  
**01/29/2015**

- Vendor News
- Brocade and Vyatta "OpenDaylight" Controller
- Big Switch Continues to Iterate
- Gigamon embraces Whitebox Hardware
- SD-WAN solves the enterprise bandwidth challenge
- I Don't Want To Own My Infrastructure
- Pets, Cattle and Conferences
- Infographic: Who Uses IP Multicast
- Internets of Interest
- You Don't Need a Load Balancer
- Action Woman Movie Montage
- TFTP Will Live On .....  
and on and on and on ....

### **False Word of the Week:**

claque - Definition - noun

1 : a group hired to applaud at a performance

2 : a group of sycophants

**3 : Vendor marketing**

- **The Network Break Podcast**



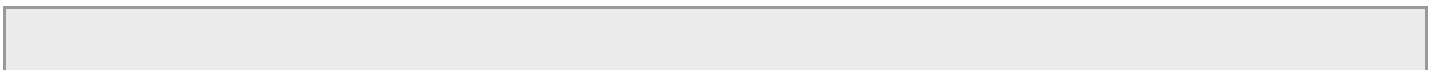
## **Enterprise IT Comes Last**

There was a time when Enterprise IT defined the future of computing. Laptops were designed for corporate consumption first and the best software was sold to enterprise for business use. The other markets for computers was "home users" who were offered cheap, low quality and low performance versions of corporate computers. IT was critical to the success of a company and spending on IT increased for many years. Productivity gains during those years were enormous - accounting staff dropped by 80% or more as computers replaced manual accounting.

But for the last 5 years, corporate IT spending has become a slow growing market with Gartner surveys placing growth of just 2-3%. Compare this with 30% or more growth in consumer while Cloud is growing at 80% or more.

A couple of weeks ago, **Apple announced** that its app store grossed more than \$10 Billion in sales, sales of smartphones are measured in billions of units. For those who don't want Apple's iOS there are Android phones and its ecosystem. And tablets, or home appliances like Amazon Fire and Apple TV ..... etc etc etc.

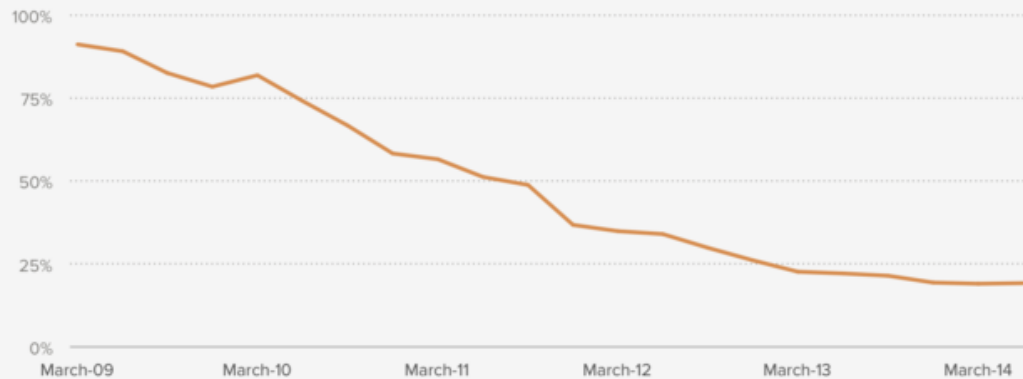
As an example of the disruption, this graph from **Ben Evans** show how far Microsoft has fallen in the five years when the total market is considered:



## Shift away from Microsoft

Microsoft's near-absence from mobile has ended its dominance

Microsoft share of personal computing device sales



Source: Gartner, Apple, Google, Microsoft, Nokia, Blackberry, a16z

Microsoft might be dominant in the Enterprise but it is minor player when you consider tablets & smartphones. With the consumer market generating more profit and revenue than corporate, Microsoft is not the biggest player.

*The fundamental point is that Enterprise IT doesn't get new technology first.*

The growth market is Consumer first, Cloud second and then slow-moving, risk-shy, service-heavy Enterprises. When companies start new products, they don't target the Enterprise anymore. That's why **IBM setup a partnership** with Apple to attempt to grab some part of a market that is actually growing.

**Innovation doesn't happen in the Enterprise anymore.** Apple iPhones have very few enterprise features **because its not a big enough market.** The majority of startups are working on consumer apps and hardware (Instagram, Snapchat, Nest etc) because that is the biggest market.

I wonder how many people who work in the Enterprise have actually realised that they work in a legacy, slow moving market that gets second best technology that is handed down from the consumer and cloud markets ?

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.

## Brocade and Vyatta "OpenDaylight" Controller

Brocade made a big announcement last week with the commercial and developer release of the Vyatta controller which a packaged distribution of OpenDaylight. Having spent the last year or so recruiting the top people in the SDN and Open Source communities we can now see the results.

Vyatta Controller a direct repackaging of the OpenDaylight controller. Importantly, Brocade has a large of team of contributors and directly streaming the project updates into their releases.

Now that Cisco has largely abandoned its OpenDaylight efforts to focus on ACI, Brocade and HP are making larger contributions and remain committed to an open vision of networking.

No doubt I will talking more about this in the **podcast** in the months ahead but you can check out more information and lots of actually useful marketing

information.

Brocade was a founding Platinum member of the OpenDaylight Project and is a significant contributor to the project. We believe that providing a strong commercial offering will help advance the traction of the overall Project, which will in turn provide the one thing missing from the SDN market to date: a common industry platform on which a healthy, vibrant ecosystem of network application development can thrive.

## **Brocade Vyatta Controller Product Page**

## **Building It Right by Geek Lights: The Brocade Approach to SDN**

---

## **Big Switch Continues to Iterate**

SDN/OpenFlow veteran Big Switch Networks continues to iterate the Data Centre Fabric with the release of Version 2.5 of the Big Cloud Fabric (BCF). Having recently spent some time with their lab version I'm starting to get more familiar with the product and just how much control you get with an SDN/OpenFlow solution as their application matures to support more complex architectures and flow models.

I did a rough pricing exercise for client recently and the price is super attractive because the whitebox switches really keep the capital cost down.

Points of interests in this release is support for VMware vSphere, Dell Open Network switches (whitebox)

With this release, BCF fully supports multiple hypervisor environments, including VMware vSphere, Microsoft Hyper-V, KVM, and Citrix XenServer. Within a fabric, both virtualized servers and physical servers can be attached for complete

workload flexibility. For cloud environments, BCF 2.5 continues OpenStack support for Red Hat and Mirantis distributions. Additionally, it now supports CloudStack and Citrix CloudPlatform, thus providing choice of cloud orchestrations to data center operators.

The press release has full details [here](#)

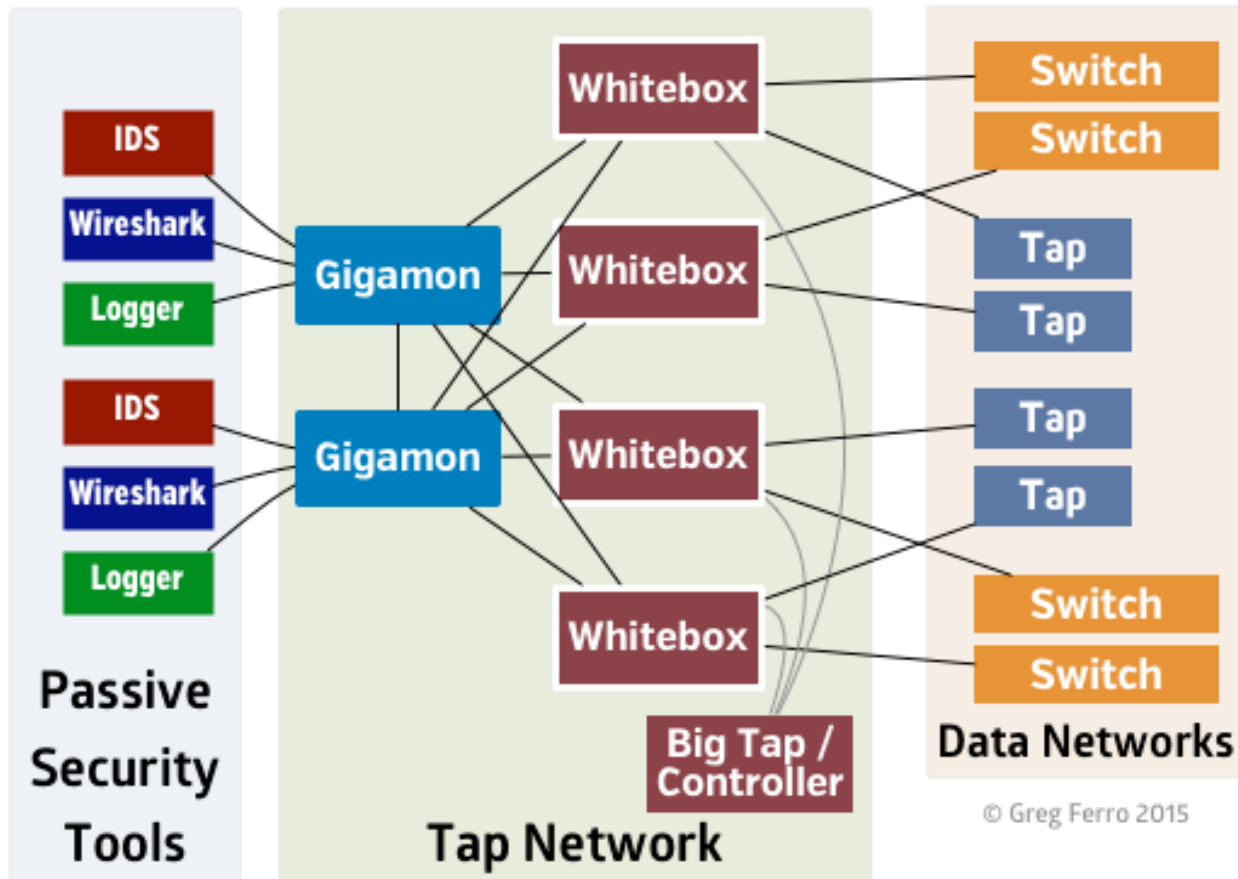
---

## **Gigamon embraces Whitebox Hardware**

More evidence that Whitebox Ethernet switches are changing the landscape arrived when Gigamon announced that they are releasing a whitebox version of their GigaVUE-OS. Why ? Because Big Switch has their Big Tap product which is software-only network tap solution that is often used by network designs to feed traffic into the Gigamon hardware and reduce the overall cost of the solution. I whipped up a quick diagram showing how it works today:

# Passive Security Network Tapping

Using OpenFlow, Whitebox and SDN for building high density, configurable and active network tap system



I would suggest that Gigamon is responding by adding whitebox hardware for customers who want to buy an end-to-end solution which should be good for their business. This PDF has a good summary of the basics (provided you know about Gigamon and what they do, of course).

**GigaUE-OS on a Whitebox**

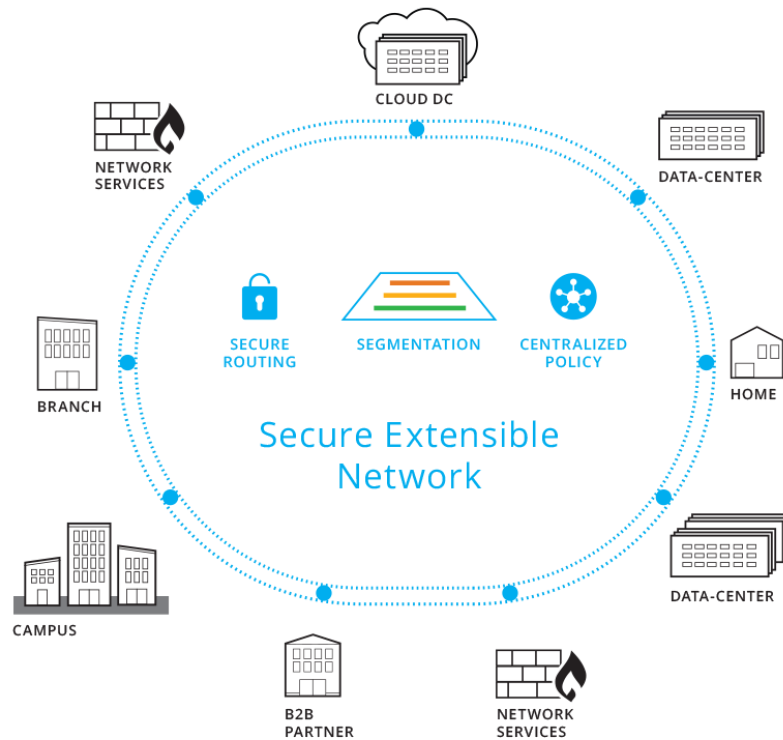
**Sponsor Piece**

# SD-WAN solves the enterprise bandwidth challenge

Software-defined WANs (SD-WAN) solve three critical problems for enterprise IT: WAN circuit costs, cloud performance, and operational rigidity. The solution entails building an overlay, hybrid WAN over any underlying transport like MPLS, Broadband or 4G/LTE. The important requirements for this hybrid WAN is to support complete routing capabilities, any-to-any encryption, and end-to-end network segmentation. The architecture should scale to thousands of end-points and use SDN principles for centralized controller and policy engine. For understanding the detailed approach and implementation, read **Viptela brings SD-WAN to the enterprise**.

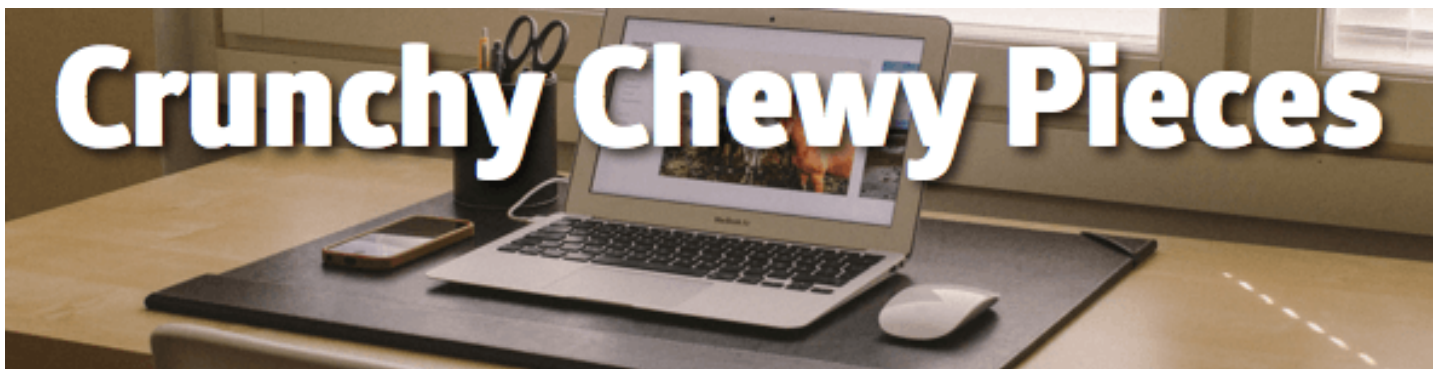
Furthermore, SD-WAN supports network-wide service insertion for Layer 4 – Layer 7 security applications or even cloud services. SD-WAN achieves this by enabling any cloud or network service to be advertised and recognized on the network. Centralized policies can then be defined to steer certain types of traffic to the network or cloud service. Building on this, SD-WANs can drastically improve performance of SaaS applications like Office365 by avoiding the hair-pinning of Cloud traffic. Distinguished routing technologist, Khalid Raza explains this on his article on **poor performance of cloud applications**.





For delivering the performance of critical applications, like voice, SD-WANs enables granular path control and traffic steering amongst the underlay depending on real-time link characteristics. For more information, see [viptela.com](http://viptela.com).

Want to reach 5,013 of the finest networking professionals in the world ? Email [packetpushers@gmail.com](mailto:packetpushers@gmail.com) for more details



# I Don't Want To Own My Infrastructure

One of the most common reasons given for moving to the cloud is that CIOs and IT Managers don't want to own or operate their own infrastructure. I agree that owning and operating storage arrays, network, desktops, servers, operating systems, backups, updates, patching system and security is too complicated, too expensive and just plain hard.

I understand that a simple answer is to get rid of the problem by outsourcing it to some cloud company. We can conveniently exclude the fact that you create a whole new set of problems in managing cloud services (because everyone else does) and focus on what has created the negative perception.

Both vendors and customers are to blame. I take the view that vendors are making products that deliver complex, costly and excessively over-featured systems. Customers keep implementing features that build up technical debts, or cutting corners or making errors of judgement during designs of the same systems.

One of the biggest lessons I learned from designing & building private clouds (in the real world) is that complexity is the number one problem. Scaling **anything** only works reliably and well when you narrow down the functions to the bare minimum and focus on ways to increase the capacity/performance/speed of the absolute minimum functions.

For most enterprise companies this would be a massive change in the way they work. Today we are running general purpose tools all over the place - MS SQL is a general purpose database, security services must fit all possible use cases (including imaginary ones), data centre switches must support dozens of network functions, servers can be infinitely upgradeable and the list goes on. And people spend excessive amounts of time fiddling with frilly bits of infrastructure that add little value and plenty of problems.

Over time your infrastructure becomes good at nothing although it may be OK for everything.

Welcome to the dilemma that makes public cloud look attractive to executives. I'm already dealing with the new problems of public cloud and I'm finding that they are just as ugly as the old problems.

We call that progress, Silicon Valley calls it innovation but I wonder what you call it ?

---

## Pets, Cattle and Conferences

I've been fortunate to be regularly attend industry conferences for many years as a speaker, journalist, 'social influencer' and with my own money. Back in 2000 when I lived in Australia I would attend Cisco conferences and learn a great deal. After migrating to England with young children in mid-2000's I stopped attending because time and money were tight. I didn't miss going to conferences.

### Ever Bigger Conferences

What I have noticed is that the vendor conferences get bigger every year. I've attended Cisco Live a couple of years back where there more ten thousand people attending the conference and the size of facility. I remember being shocked by the vast size of the lunch hall that could seat nearly 5000 people and it took me ten minutes to find the table session on one side of the hall because I couldn't see the other side of the room. For me, attending the big conferences is becoming nearly worthless. Show floors are so large that it takes an hour to walk around without stopping. Sessions are in rooms so big that it takes ten minutes to get out. A room with hundreds of people means no questions (or stupid questions)

### Being Cattle

**Possibly the worst aspect of attending a huge event is that people become cattle.** The sheer logistics of moving to ten thousand people to the "event party" often means waiting hours for a shuttle bus. The food is mass

produced and naturally the quality isn't great (no matter how hard they try). Walking between session rooms can take 20 minutes and makes my legs sore by the end of day one.

And don't get me started on travel & accommodation. I need to pay reasonable prices for flights & hotels but a big conference means that discount flights go fast and hotels increase their prices. So this year, I'm going to avoid large conferences.

I want to be a person. Meeting people, having discussions, attending sessions with no more than a few hundred people. And let me ask this. Is it really necessary to have one big event with tens of thousands of cattle? Why not have 5 smaller conferences that target customer needs? Instead of Cisco Live that covers everything why not a smaller event focussed on the Enterprise or Service Provider or Cloud Provider?


I want to be treated like a pet, not like cattle and the modern conference isn't what I want.

---

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: yellow, purple, green, orange, and red. The entire graphic is framed by a dark teal border.

## **Infographic: Who Uses IP Multicast**

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



**HOW MANY  
CUSTOMERS  
SPECIFY  
MULTICAST AS A  
REQUIREMENT**

**How Many  
Customers  
Actually  
Use  
Multicast**

© 2015 ETHEREALMIND.COM

# Internets of Interest

## Internets of Interest

Collection of useful, relevant or just fun places on the Internet and a bit commentary about what I've found interesting about them

---

A great free font from the League of Movable Type that suitable for headlines, titles and front pages of documents.

A new classic, this is a bold, modern, geometric sans-serif that has no problem kicking its enemies in the chest.

**League Spartan | The League of Moveable Type**

Check out the sample I've made below to see how the fonts looks in practice.

**Network Architecture**  
**Detailed Design**  
January 2015

---

## Build Your Own DNS Anycast Service for \$1000

Nat Morris built a global Anycast DNS service for under \$1000 using low cost components, some programming-scripting-fu and social media as a side project to develop some programming skills. He tells the story in this video at

RIPE69, slides and video. The service now has more than 20 locations and continues to grow.

I've been working on a fun side project for the past year, my own anycast network that I set out to build for under \$1000/yr (under the wife radar).

<https://ripe69.ripe.net/archives/video/180/>

Side note: There are some interesting implications for existing vendors here. There are large companies who provide managed DNS Services and charge more than \$1000 per year per customer per domain. Commercial services offer DDOS protection, high quality hosting and 24 hour support but the actual technology they offer costs nothing as Nat has demonstrated here.

---

## You Don't Need a Load Balancer

Lots of companies already own Cisco Nexus 5K/6K/7K switches but what many people don't know is that that there is load balancer feature that is part of the NXOS operating systems. The "Intelligent Traffic Director" removes the need to buy costly F5 BigIP products and because it is actually part of the core network it is much easier to get traffic routed through the load balancing function.

The LB function is for L3/L4 load balancing but that is enough for 90% of applications that I have seen in the real world. If you can remove 80% of the load off your existing F5 you can save a lot of money by avoiding upgrades and reduced maintenance (F5 charges higher maintenance as you increase performance).

I'm not sure about reliability of this feature or the licensing because it has changed several times, but last time I checked it was a LOT cheaper and the deployment worked really well.

Cisco At-A-Glance PDF: [Cisco Intelligent Traffic Director](#)

Cisco Blog Post: **ITD: Load Balancing, Traffic Steering & Clustering using Nexus 5k/6k/7k**

---

## **Action Woman Movie Montage**

Two and half minutes of movie magic where women are being action hereoes. Loved it. Check the channel for ClaraDarko, lots more of them to watch.

**Action Women Movie Montage** from **ClaraDarko** on **Vimeo**.

---

## **Is IBM About to the Layoff 25% of staff**

According to Robert Cringely, IBM will reduce its headcount by 25% by the end of February.

To fix its business problems and speed up its "transformation," next week about 26 percent of IBM's employees will be getting phone calls from their managers. A few hours later a package will appear on their doorsteps with all the paperwork. Project Chrome will hit many of the worldwide services operations. The USA will be hit hard, but so will other locations. IBM's contractors can expect



regular furloughs in 2015. One in four IBMers reading this column will probably start looking for a new job next week. Those employees will all be gone by the end of February.

Cringely is often wrong but there are a lot of specific details in this post that give it a lot of credibility. IBM is in serious financial troubles and customers are moving away from services that IBM offers.

## **Next Week's Bloodbath At IBM Won't Fix The Real Problem**

---

## **TFTP Will Live On ..... and on and on and on ....**

The IETF have published a Standards Track RFC that creates an options for TFTP clients and servers to negotiate a Window Size to increase throughput and improve performance of loading Linux images. It does this by negotiating a larger window size and reducing the round trip latency for confirm data received.

Considering TFTP looks far from extinction today, this document presents a negotiated extension, under the terms of the "TFTP Option Extension" [RFC2347], that produces TFTP transfer rates comparable to those achieved by modern file transfer protocols.

## **IETF RFC 7440 - TFTP Windowsize Option**

I wonder how long it will takes for TFTP servers/clients to be updated to support the proposed features.

---

# The Network Break

News, Views & Opinions for your coffee break



## The Network Break Podcast

The Network Break is a fast moving podcast covers news and announcements on IT Infrastructure on bi-weekly schedule or when there is good news to discuss. Hosted by Greg Ferro and Andrew Conry-Murray, the show moves fast and loose with lots of opinions and reactions to the events. And we aim to start and finish the show in the time it takes to drink a cup of coffee.

iTunes: **Subscribe on iTunes**

RSS Feed: **Network Break RSS Feed for your podcast client**

Back catalogue: **Network Break Show Archive** on the web.

# Followup

## Answering your questions & feedback

I welcome your feedback, questions and corrections. Send an email to [humaninfrastructure@packetpushers.net](mailto:humaninfrastructure@packetpushers.net) and I will write a response. Privacy assured.

---

*Sponsorship and Advertising - Send an email to [humaninfrastructure@packetpushers.net](mailto:humaninfrastructure@packetpushers.net) for more information.*

## **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](http://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.

*Copyright © 2015 Packet Pushers Interactive LLC, All rights reserved.*

[unsubscribe from this list](#)   [update subscription preferences](#)