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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A Newsletter on a Life in Networking

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The Travel Story Edition

- This Week:
- Subception: On Having Favourites And Location Beers
- Guest Writer - Ethan Banks: We Are Anchored To The Old
- Sponsor: Open Networking Summit June 14-18
- Q&A: Will SDN Be The NEXT BIG THING?
- Internets of Interest : Pages to See
- Better Writing
- AnandTech Reviews OpenCompute Hardware

Thought For The Week:

An Overlay meets an Underlay in a bar and says "Let's get physical."

This Week: Websites

This week is about websites, backends, and podcast feeds. The Packet Pushers website is in desperate need of an update, but "something else" always happens. After much deliberation and debate, we've spent big money on a new hosting platform for Packet Pushers. I'm spending most of my day working on the new design and platform.

Exciting times.

Subception: On Having Favourites And Location Beers

I don't really have a *favourite* coffee shop. For me, a coffee shop is a place to rest, a place to wait between meetings, a place to *have* meetings, a place to meet friends. The best coffee shop is one that is in the right location (except for Starbucks, which has the same atmosphere as a production line in a factory). My "location coffee shop" is the one near my daughters' school where I go before or after the seemingly endless school events.

Many years ago, my brother & I spent a few years wandering around Southern Europe and Eastern Africa. You couldn't call it travelling, really, since we rarely planned where we were going. One day we woke up in Cairo, fresh off sailing a felucca down the Nile for a week or so. We had seen as much of the pyramids, souks, markets, and sights as we needed and it was time to move on. At breakfast we met some other guys who had just arrived from Jordan, simply bursting to tell us how fantastic Petra was, with its amazing **buildings carved into living rock** (as seen in Raiders of the Lost Ark).

We packed up and headed to the bus station without giving any further thought to it. The bus station was busy, and we had to wait 10 hours to catch a bus. It wasn't until we got **Al Ismailiyah** that we realised our mistake. It was **Ramadan**, when many people would visit their families and celebrate the festival together. The passenger queue for a ferry across the Suez Canal had several thousand people after a breakdown at the start of the busiest period of the year.

On second day of patiently sitting in the heat, a drink seller came around. In the 45ºC heat, this man carried an insulated box filled with ice, soft drinks, and water. We bantered with him in broken English and our few Arabic phrases, and joked that what we really needed was beer.

How I remember this next moment......

He broke into a beatific smile, and spat out a laugh and string of Arabic words. Then he fished in his coolbox and held out two bottles of ice-cold, frosty, luscious beer.

I swear that the choirs of heaven were singing songs from the vestibule at this moment. My mouth watered to touch the cold liquid, to feel those little

angels of beery goodness dancing across my tongue. My brother and I dove for our dinars to buy his entire stock. We drank the first beer while standing there, surrounded by thousands of people who had queued for two days to catch the boat to Jordan.

In those days, Egyptian pilsner was quite awful but amid the smell of sweat, desert heat, open fires, overflowing toilets, and endless impatience, I had the best beer I've ever had.

I learned that it's not the beer that matters, it's the context. It's about why you had the beer and what led up to the moment.

That's why I don't really have favourites. Everything is relative.

That's why I don't have a favourite coffee shop. But I do have my **location coffee shops**.

Ethan Banks on Networking Contributor

Guest Writer - Ethan Banks: We Are Anchored To The Old

Ethan Banks, Packet Pushers Co-founder

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I've been pondering how everything old in networking seems to be new again. Genuinely new ideas in networking are hard to come by. For instance, OpenFlow is not new from a certain point of view. At the end of the day, OpenFlow's usefulness is as a programming tool for forwarding tables. But we didn't really change networking with OpenFlow. We just changed an implementation process to one that offers some operational flexibility and efficiency.

VXLAN is an network virtualization technology that has roughly one thing going for it over MPLS & L3VPN — it will work over the top of an existing IP fabric. But really, it's a convenient workaround for 802.1q limitations that in the end doesn't do that much more for us. Any tagging and encapsulation technologies just don't advance the ball that far. They are different ways of doing the same thing we've been doing for a long time.

Network service header (NSH) is the same thing yet again. It's a proposed tag that builds a protocol-independent service plane and carries piles of meta data of interest to service hops in the chain. Gee, another tag, and what's better, one that requires a new layer of local service awareness instead of allowing a central controller to deal with it. Sigh.

I know that there are nuances between technologies — silicon advantages, for instance. And of course, there's expertise and comfort with certain technologies. In that sense, every problem looks like a nail that can be bashed with your hammer of choice. I get it. I've gone to my own personal well of experience when facing certain network design problems, for better or worse.

I just can't shake the feeling that we're stuck in the past when it comes to networking. Routing protocols lack nuance that allow intelligent, real-time forwarding decisions. Ethernet was never intended to be used either in the way or at the scale that we use it today. IPv4 is very familiar, but was never designed for the scale of the world we insist on applying it to. And yet, we prolong our dependence on it, many of us leaving IPv6 as a low priority. And I'm not even convinced IPv6 is the right answer. It might be our best answer right now, and we're too far down the road to stop the train from moving ahead.

Change is hard not only for us who operate networks, but also for vendors who have products to sell and business models to protect. We're constrained by history. We're anchored to the old. So, we keep riffing on the general ideas of what we're already familiar with. The more "new" ideas I hear from startups, "new" products I hear from incumbents, and "new" drafts I read from the IETF, the more convinced I am that we're stuck in the past.

I believe we need a radical reboot of networking to move the industry ahead — throw it all out and start over again. I don't pretend to have the vision of what that looks like or how we'd move forward with it. I think such a change starts by reimagining what networking really needs to accomplish, defining constraints in the context of modern IT requirements, and starting all over with fresh stack on a clean whiteboard. Maybe SDN and NFV get us there, eventually. Maybe. But we have to let the visionaries have a shot, and make sure they don't get shouted down by those with vested interest in keeping networking the same.

Got something to say? Send your contribution to
humaninfrastructure@packetpushers.net *and, if we publish it, we will pay you a pittance for it.*

Sponsor: Open Networking Summit June 14-18

The Open Networking Summit is the pioneering and premiere SDN and NFV conference designed to foster a productive dialogue in the world of SDN and NFV by bringing together end users, engineers, business leaders, and researchers to discuss the possibilities and shape the future of the networking industry.

ONS2015 is June 14-18 in Silicon Valley, California. The focus of this year's conference is on education, sharing of experiences and best practices, and a vision for the future. Participants will not only benefit from watching and listening to presentations and panel discussions but also contribute to discussions to advance the SDN industry.

Go to www.OpenNetSummit.org and get a 10% discount on registration using code PACKETPUSHERS.

ONS2015 features 3 Keynotes, 3 Panels, 3 Plenaries and 9 tracks. It covers use cases and deployment experiences across service providers, enterprises, cloud, and data centers. Keeping with the 'Open Networking' theme, ONS2015 will emphasize all leading Open Networking projects, including OpenDaylight, OPNFV, and Open Network Operating System (ONOS) via talks, developer tracks, and tutorials for each. Speakers from incumbent AND startup vendors will share their experiences and visions.

Head over to www.OpenNetSummit.org and get a 10% discount on registration using code PACKETPUSHERS.

Q&A: Will SDN Be The NEXT BIG THING?

Question:

Do you know much about NSX? We are looking at building out a PoC for this now and are curious to see a non-invested person's response.

Right now we are an EMC, Cisco, and VMware shop. SSD Sans, Cisco UCS, and Nexus 7k currently. We also use F5 GTMs and LTMs.

Do you think that SDN will be a huge push in the future?

Answer:

Yes, I believe that SDN will slowly dominate all of networking in the next 10 years or so.

If you are a Cisco, EMC, VMware shop then chances are your managers are scared of technology and choose suppliers that can offer them hope that Infrastructure will work properly. Of course, what most companies really need is better IT people who are well trained and motivated, but it's much easier to buy a quick fix than to solve the problem. Anyway, enough of that.

SDN Solutions

There are about 4, maybe 5, different categories of SDN solutions.

There are platforms like OpenDaylight, NSX, and ACI that want to embrace all of the networking and create a type of "lock in". This could be a good solution

for customers who are afraid of networking (very common) and want someone to hold their hands.

Then there are products that solve specific problems. Look at Brocade, Big Switch, Plexxi, and Midokura, which each offer a solution to a small problem/challenge.

And then there are products that are focused on more niche functions like monitoring, analytics, and security. (I wrote a blog post on these this week - **Analysis: 3 Emerging Categories in Networking Markets for 2015 - EtherealMind**)

So start thinking about SDN and learning things about it. No rush, it could take years before it reaches the mainstream (like IPv6) but I don't think so.

> Got questions? Sure you do! Send them to **humaninfrastructure@packetpushers.net** and get answers (with no guarantee you'll like them).

Internets of Interest : Pages to See

Webpages that have caught my attention in the last couple of weeks.

Better Writing

Once again I'm having self doubts about my writing, so I'm reading articles on best practices. This article on seven words that should never be in your writing resonated with me:

> In this article, we'll discuss seven words you should avoid, but if I had to give you one piece of advice about how to become a better writer, this would be it:
>
> "Be more specific."

Link: **Want to Be a Better Writer? Cut These 7 Words**

AnandTech Reviews OpenCompute Hardware

AnandTech takes 12 pages to review OpenCompute hardware including servers, storage, and even networking. If you haven't been keeping up with OpenCompute and want to understand just how radically different its approach is to hardware that is customised for data center, then this is great post to get you started.

Link: **Networking - The Next Generation Open Compute Hardware: Tried and Tested**

Scaling Flash Storage

This article from "The Platform" focuses on CohoData storage technology. This paragraph is highly relevant for the networking community:

> "There's this really weird thing going on right now," Warfield tells The Platform. "Even though we have had flash for over a decade and the flash is basically the same memory cells, it is moving onto faster and faster buses. With PCI-Express and NVM Express, the thing that doesn't seem to get enough play is that even one of these flash devices can saturate a 10 Gb/sec and increasingly a 40 Gb/sec network port. The capacity of a several hundred terabyte array is great, but it is really secondary to the fact that if you put a second device inside of that server, you cannot expose its performance. At $3,000 to $5,000 per device, these flash devices cost more than the CPUs. And one of the founding ideas of this

company is that we are going from disks being the slowest things in the datacenter to flash being the fastest thing in the datacenter. The center of the datacenter is shifting from the CPU to the storage."

Link: **The Future Of Flash Is Massive Scale**

Be Kind

My friend, and CTO at the time, Dustin Moskovitz pulled me into a room one morning. He told me I would no longer be working on News Feed, which was surprising because at the time I was the only engineer keeping it running. Instead they were going to hand it off to someone else and build a team around that person. With alarm in my voice I asked if I was being fired. Dustin relented only after a telling pause: "No, but you need to find something else to do."

Link: **Be Kind**

Half of UK homes turn to tablets - in just five years | Ofcom

Just another reminder that Enterprise desktops & laptops don't matter when tablets and smartphones dominate demand on the Internet.

The tablet computer has established itself as a must-have device in just five years with more than half of UK homes now owning one.

Link: **Half of UK homes turn to tablets - in just five years | Ofcom**

On My Mind: Virtual Doughnuts

I'm tired of memes around unicorns, bacon, and cats. I'm really tired of the same boring rubbish that "SoMe experts" use to hijack the conversation of real people.

Therefore it's time to start a new meme. And because I am attempting (and mostly failing) to eat healthily, I find that I often fantasize about doughnuts.

I am now allowing my self one *virtual doughnut* per day to remind myself I am not getting old, fat, and boring (which I probably am).

VIRTUAL DOUGHNUT OF THE WEEK
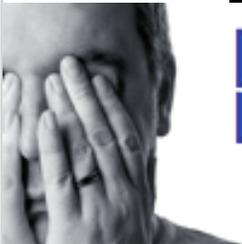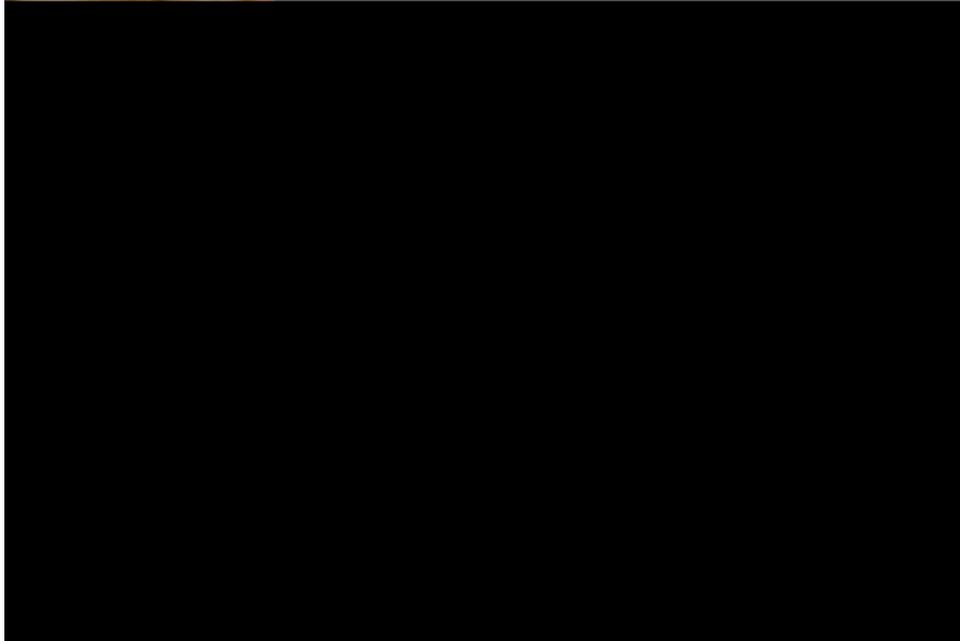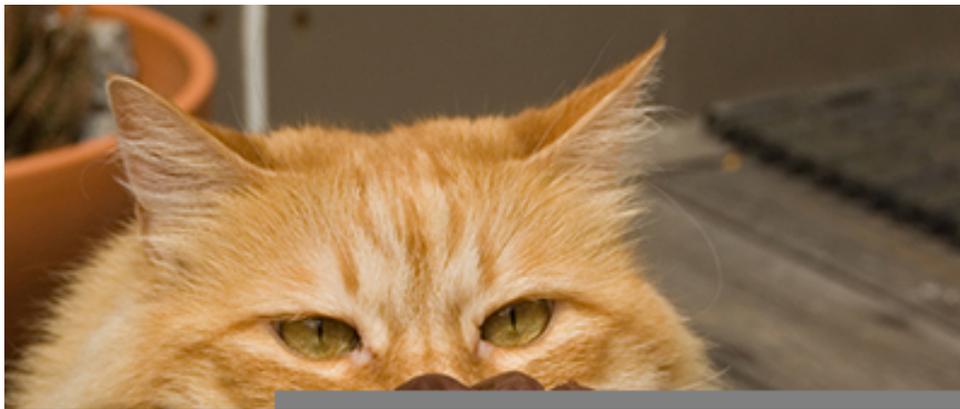
Here are the last seven articles from my blog.

EtherealMind.com Latest

Logical Razors Can Take on Corporate Babble - **Link**
Canned Response to BGP Networking Questions – Reddit - **Link**
IETF RFC 8374 BGPsec Design Choices and Summary of Supporting
Discussions - **Link**

Net Neutrality Hasn't Ended, We Don't Know When - **Link**

Next Market Transition ? Cheaper Buying, Less Selling - **Link**

Video – Enterprise IT is Luxury Market, Stop Whining About The Price - **Link**

BPF, eBPF, XDP and Bpfilter… What are these things and what do they mean for the enterprise? – Netronome - **Link**

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