

*IN THIS WEEK'S ISSUE: How To Make A Successful Lunch 'N Learn, Why Email Is Terrible For Process Documentation, and A Defense Of Sportsball. Make sure you enable the images; the magazine looks a whole lot better that way!*



# PACKETPUSHERS

## Human Infrastructure Magazine

A Newsletter About a Life in Networking

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### Issue Number 27

03/23/2016

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The "Between March Madness and St. Patrick's Day we're not going to get much done this month" issue.

### Thought For The Week:

Get a good night's rest. It's the cheapest way to stay productive.

# 1. Presenting A Successful Lunch 'n Learn

by Ethan Banks

On [the Datanauts podcast](#), Chris Wahl and I frequently discuss how to break down technology silos. One great way to do that is with an in-house lunch 'n learn. The idea is simple: Over a lunch that your manager funds (generous lady that she is), you get together with your IT co-workers in your very best conference room and share something about the technology in which you're an expert.

A lunch 'n learn is an opportunity to educate your co-workers about your job and role on the team. You can also throw in some technical specifics that make them smarter about the part of the infrastructure you manage.

If your organization does a lunch 'n learn series, you might have the chance to go deep on more specific topics over time. If you are a network engineer, this is your chance to explain what's going on inside of that cloud everyone draws on the whiteboard.

Now, a few of you are rubbing your hands together and chortling: "At last! A chance to show the idiots who the master is. Mwahahaha..."

Listen, Kylo. About that--when you present, consider your audience.

No, these folks don't know a BPDU from a pulled pork sandwich, but that doesn't mean they are stupid. (Probably.) These are your peers, with their own technical expertise in their own areas. A lunch 'n learn is not your opportunity to lord over your team with technical superiority. Lunch goes down better without condescension.

Okay. Ready to get your whiteboard on? Great. I've done a few lunch 'n learns over the years. Based on those experiences, here are a few recommendations.

1. **Stick to the big picture.** You don't have a lot of time, and you're competing for the attention of folks who are scarfing pizza, passing around salad, and trying not to spill a 2-liter of Diet Coke on their iPads. Therefore, assuming that these folks are not experts in your area, skip some detail.
  - a. BAD: "Our STP root bridge values are set to 8192 on core switch 1. Plus, we use rootguard and BPDUguard in accordance with Cisco's best practices."
  - b. GOOD: "We use a carefully designed spanning-tree to avoid outages when links go up and down or new switches are added to the network. However, we're migrating to a modern spanning-tree replacement called FabricPath that has many more features."
2. **Stick to the time limit.** Practice ahead of time if you need to. If you've never presented before, you definitely need to.
3. **Avoid text walls.** If you choose to use PowerPoint or Keynote to present, remember that slides *support* what you're saying. Slides don't *repeat* what you're saying. Keep your slides simple so that people are listening to you talk, and not trying to read a wall of text that's a repeat of what's coming out of your mouth. People can read a slide or listen to you talk, but they can't do both. (I am guilty of text walls. Big mistake.)
4. **Leave time for questions.** Questions are fun, and foster great discussion. Don't be scared of them. If you get asked something you don't know, all you have to say is, "I don't know, but I'll find out."
5. **Skip the demo.** Unless the lunch 'n learn is about how to, say, use the reporting engine of the NMS or something very targeted like that, skip the GUI and CLI demos. Again, you probably want to keep it high-level. Remember, you're not training new operators here. You're sharing

knowledge about what you do and providing background information about your area of expertise. What would you expect people to do with that overly specific implementation knowledge they'll probably never use? They'll do the same thing you would -- forget it 3 seconds after the demo is done.

Lunch 'n learns are a great way to improve your IT team camaraderie and comprehension of one another's jobs. If you've never done one, I challenge you to propose the idea to your boss and get such a program off the ground. Having such a meeting once a month, or even just once a quarter, will help make the team stronger overall..

## Sponsor: Interop

### See The Future Of Networking With The Packet Pushers

[Interop](#) is the leading independent IT conference, and the Packet Pushers are putting together a two-day "Future of Networking Summit" for Interop Las Vegas 2016.

The goal of this summit is to identify current and emerging technologies that are going to affect the networking industry over the next 5 to 10 years.

Experts, practitioners, and of course the Packet Pushers themselves will talk about the changing state of network operations, advances in network hardware and silicon, open networking, SD-WAN, containers and more.

Besides the Future of Networking Summit, Interop is assembling a full slate of independent, top-notch content on security, virtualization, IT leadership, SDN, and more.

Make your plans now to join us at Interop Las Vegas, May 2nd through the 6th, at Mandalay Bay. Use the code PPUSHERS [when you register](#) and get 25% off 5-Day, 3-Day, and 2-Day conference passes.

## 2. Email Stinks For Process Documentation

by **John Harrington**

I received an email this week that read "*Dear ping-engineers, please ensure that all future network change documents include a test plan and monitoring steps from now on.*"

My heart sank. While I have no objection to the instructions in the email, I do care about good process—and updating a process solely by email is a terrible idea.

A process doesn't have to be a large tome in a ring-binder, or a version-controlled masterpiece. In fact, I'm a big fan of a one-page process on a wiki with about five bullet points.

Whatever your approach, a process needs to be written down in a place where it can be read in its entirety and updated as necessary. That's why email stinks as documentation. You can't capture process in emails, and following a process shouldn't be a tedious game of reassembling instructions from message fragments scattered across your inbox.

It gets worse when you think of how you share this pseudo-process with a new

hire or a contractor. You're setting them up for failure—and you know you'll be dragged along for the ride.

My remedy is to lead by example. When I receive an process update via email, I add the new information to the relevant wiki and send the URL back to the team. I ask the team to edit my update or move it to a more suitable location.

Your colleagues may follow your lead, but even if they don't, you still end up with useful documents that you can use and share to enhance productivity.

## 3. In Defense Of Sportsball

by Drew Conry-Murray

Greg Ferro recently blogged about [how playing sports in school was bad preparation for an IT career](#), in part because sports demanded rigidity and specialization of skills, rules were clearly defined, and wins and losses had no real consequences.

Yet in IT, successful engineers have skills across multiple disciplines, the rules of IT and business aren't always so clear, and wins and losses can have a significant impact on your career or even a whole organization.

Those are valid points. But I also think that playing sports can provide lessons that are just as applicable in the data center or the office as on a field or in a gym.

**1. Sustained practice earns rewards.** Anyone who's tried to juggle a soccer ball, throw a spiral, or return a hard serve knows that the first time you do something, you're probably going to suck at it. But if you work diligently, you transmorgify that suckiness into a skill. The rewards of practice apply equally to shooting a jumper as they do to deciphering a packet capture.

**2. Effort and will can trump physical traits.** I'm not especially fast, strong,

tall, or coordinated, but usually I can keep up with, and occasionally surpass, people with better physical gifts. Why? Because I've learned that sheer, bloody-minded effort—being willing to put up with more hours or more pain—pays results. The same applies to tech: You don't have to be a Mensa member or have an eidetic memory to be a success in IT. You just have to do the work.

**3. You have to find a way to deal with jerks.** We don't always get to pick our teammates in a game or at work. Sometimes you're on the same squad with a loudmouth, or a whiner, or a selfish bastard. But you can't just ignore and isolate this person, because you need everybody if the team is going to function. So you have to find a way to encourage this person's strengths and minimize the flaws.

Sportsball and tech don't always go together, but I do believe that there are useful lessons to be derived from athletic endeavors that apply to IT.



## Internets Of Interest

A collection of pre-loved links that might interest you. "Pre-loved" because I liked them enough to put into this newsletter. It's not *true* love.

### How We Run BGP on Top of OpenFlow

Yes, OpenFlow works pretty well. And its work with BGP too if you make certain design decisions. Datapath.io talks about its design when using HPE switches.

[LINK](#)

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### IETF RFC 7771 - PIM-SM Isn't Dead (Yet)

Time to update your tender template for buying network hardware. People who love IP Multicast have banged out an updated RFC for PIM-SM.

From the **RFC**:

*"This document obsoletes RFC 4601 by replacing it, addresses the errata filed against it, removes the optional (\*,\*,RP), PIM Multicast Border Router features and authentication using IPsec that lack sufficient deployment experience (see Appendix A), and moves the PIM specification to Internet Standard."*

Vendors LOVE IP Multicast because it sells a lot of expensive hardware and extra software licenses for those foolish enough to use it. Interesting to note that RFC4601 was never even a standard.

[LINK](#)

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## Dropbox Quits AWS

You don't hear about companies quitting AWS because who cares. But this article from Wired is an exciting look at post-cloud life. In particular, take note of how difficult it was to extract data from the AWS network because it was slow (and expensive).

[LINK](#)

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## Equinix Joins the OpenCompute Project

Equinix has a long history of sticking with its incumbent vendor/suppliers and aggressively refusing to look at startups or alternative technologies, so this really got my attention. When Equinix says "An Innovation Platform: Equinix Joins the Open Compute Project" on its corporate blog and talks using OCP whitebox for its telco technology, you know that the momentum behind merchant silicon and whitebox is not decreasing.

Telco backbones built on whitebox is a likely future.



[LINK](#)

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## Google Joins Open Compute Too

OCP has been significant but small-time for the last few years. Now that Microsoft and Google are on board, I'm getting the sense that critical momentum is building behind the OCP foundation.

[LINK](#)

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## Telegeography

The Telegeography 2016 submarine cable map is out. You know you want to look at it.

[LINK](#)

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## GitHub Guides

Nice introduction to GitHub. You really need to know something about GitHub to be in IT Infrastructure and would be worth an hour to learn some of the basics here.

[LINK](#)

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## Technical Debt With Frog And Toad

This is an amusing spoof of the "Frog and Toad" children's books (which I loved reading to my kids), in which Frog and Toad join a startup. The technical debt described is more about the Web than networking, but it resonates.

[LINK](#)

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## IPv4 To Be Declared Historic

... without a funeral and the corpse isn't even cold.

From the **IETF draft**:

*"IPv4 [RFC791] has been superseded by the more recent IPv6 specification [RFC2460bis]. The IPv6 document specifically says, "IP version 6 (IPv6) is a new version of the Internet Protocol, designed as the successor to IP version 4 (IPv4) [RFC791]."*

*RFC791 is therefore Historic.*

[LINK](#)

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## Microsoft Announces SQL Server On Linux

Really. Not kidding. Insert suitable epithet (people spinning in their graves, etc.) about dramatic change now that Steve Ballmer has gone.

From **Microsoft**:

*"Bringing SQL Server to Linux is another way we are making our products and new innovations more accessible to a broader set of users and meeting them where they are. Just last week, [we announced our agreement to acquire](#)*

*Xamarin. Recently, we also [announced Microsoft R Server](#), our technologies based on our acquisition of Revolution Analytics, with support for Hadoop and Teradata."*

[LINK](#)



Where Too Much Networking  
Would **NEVER** Be Enough

[This channel](#) has our nerdiest shows on data networking technologies and products.



The  
Network  
Break



[Network Break is a weekly podcast](#) that delivers news & analysis on the networking industry in a fun, fast-paced style.

## Research Papers

Research and deep technology papers that provide deep insight or expertise.

### The Evolution of Layered Protocol Stacks Leads to an Hourglass-Shaped Architecture

I've spoken about this paper many times and Justine Sherry reminded me. One

of the many reasons that we aren't adopting IPv6 is that we cannot change from IPv4 because of the seven-layer model.

From the **paper**:

*"The Internet protocol stack has a layered architecture that resembles an hourglass. The lower and higher layers tend to see frequent innovations, while the protocols at the waist of the hourglass appear to be "ossified". We propose EvoArch, an abstract model for studying protocol stacks and their evolution. EvoArch is based on a few principles about layered network architectures and their evolution in a competitive environment where protocols acquire value based on their higher layer applications and compete with other protocols at the same layer."*

[LINK](#) (PDF)

## Product News

We don't often get new products worth talking about, so that makes it nice to have something to say.

### Cisco Cat4500E Supervisor

The confusing number of products that Cisco is releasing shows no signs of ending with the announcement of Sup8L-E. The major feature seems to be support for 2.5/5G Ethernet for 802.11ac Wave 2 WiFi. Claims to work with Cisco APIC-EM and Prime Infrastructure

I don't see how this announcement "Redefines Modular Access for Enterprises" - all it does is offer a minor upgrade to support 2.5/5G Ethernet that no one really needs.

[LINK](#)

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# Citrix CloudBridge Enterprise Edition Bundles SD-WAN & WAN Optimization

Citrix announced the launch of CloudBridge Enterprise Edition, an SD-WAN appliance that also includes WAN optimization software built in. A single management pane lets administrators configure both SD-WAN and WAN opt functions, including protocol optimization and caching. Citrix anticipates that WAN optimization as a standalone product category will eventually fade away, though it will continue to offer separate products for the next few years.

Silver Peak, which competes with Citrix in both markets, also includes limited WAN optimization capabilities in its own SD-WAN products.

[LINK](#)



## Q&A

**People send me questions. I do my best to answer them.**

### **Question:**

What are your views on custom silicon versus merchant silicon in networking products?

### **Answer:**

I believe that ultimately, nearly all networking (barring some niche products for service providers) will be merchant silicon in the same way that x86 servers are all made from commodity components and silicon.

Most of the components inside an Ethernet switch are "off the shelf," such as power supplies, FPGAs, CPU, and DRAM. The only networking-specific component is the switching chip.

In the last decade, companies that only design and manufacture chips have grown substantially as the consumer market has grown. The high profit margins in networking equipment make for an attractive market to enter.

The first phase of merchant silicon has focused on entering a market segment with high volume and low complexity--the edge of the network in the data center. Broadcom's StrataNGX showed that it could be done, and now we have competitors gaining ground.

Cavium Xpliant, Centec, Intel/Fulcrum, and Marvell are just the first wave of competitors. ECMP network designs enable increased volume of sales and will fund the next generation of merchant silicon chips. Chip makers are already producing chassis-ready versions of their switching chips. Arista is doing it today and the Facebook "6-pack" is the first demonstration that companies can make a chassis using commodity components.

Now, Cisco and merchant silicon is complex. Cisco sells so many switches that it can make its own chipsets and outsell everyone else. But I doubt it will. Cisco is under financial pressure to reduce costs, and it requires about \$200 million and five years to bring chips to market. I expect Cisco to run down the internal pipeline and adopt more merchant silicon over the next decade. Cisco is a sales company, not a silicon vendor.



## Recent Articles

**The last five articles published on EtherealMind and Packet Pushers**

### EtherealMind.com Latest

[Logical Razors Can Take on Corporate Babble](#)

[Canned Response to BGP Networking Questions – Reddit](#)

[IETF RFC 8374 BGPsec Design Choices and Summary of Supporting Discussions](#)

[Net Neutrality Hasn't Ended, We Don't Know When](#)

[Next Market Transition ? Cheaper Buying, Less Selling](#)

## PacketPushers.net - The Last Five

[Network Break 182: BGP Hijacked For Cryptocurrency Heist; Juniper, Big Switch Unveil New Products](#)

[Show 387: AWS Networking – A View From The Inside](#)

[PQ 147: Connecting Security And GDPR Compliance \(Sponsored\)](#)

[Datanauts 131: Masters And Mentorship](#)

[Network Break 181: Russia Accused Of Infrastructure Attacks; US Targets ZTE](#)

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## Watch This!

Where we collect some videos that make us reflect, think about our inner lives, or just entertain us.

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This is a fantastic homage to/spoof of the late Bob Ross, PBS's whispering painter.



## THE LAST JOB ON EARTH



In a fully automated world, what happens to the people? This video, created by The Guardian, offers a chilling perspective.

## SINGLE OPERATOR



SkyWall is a forthcoming "Drone Defense System" that's been developed by English engineers.



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## Did We Miss Something?

Got an link or an article to share? Email it to [humaninfrastructure@packetpushers.net](mailto:humaninfrastructure@packetpushers.net)

### The End Bit

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**Human Infrastructure is bi-weekly newsletter with view, perspectives, and opinions. It is edited and published by Greg Ferro and Drew Conry-Murray from PacketPushers.net. If you'd like to contribute, email Drew at [drew.conrymurray@packetpushers.net](mailto:drew.conrymurray@packetpushers.net).**

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