Another week of being a Human in IT Infrastructure. Are you still alive to talk about it?

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IN THIS WEEK'S ISSUE: Don't Buy 40GbE; A Parent's Security Dilemma. Please remember to enable the images; the magazine looks a lot better that way!

PACKETPUSHERS
Human Infrastructure Magazine
A Newsletter About a Life in Networking

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(aka The Project Plan)

Issue Number 52

03/16/2017

The "Giving and seeking advice" issue.

Thought For The Week:
Now that the Ides of March have passed, can I stop bewaring?

1. Do Not Buy 40G Ethernet. It's Obsolete

by Greg Ferro

I spat out a [tweet](#) recently while reviewing Mellanox's financial results. The tweet, which advises people not to buy 40G, was heavily shared on LinkedIn and Twitter. This surprised me. I thought everyone knew that 40G is obsolete!

Mellanox predicts that 40G will shrink to 7% of the market by 2020. 10G is already shrinking and will be 42% of the market by 2020 (down from 81%).
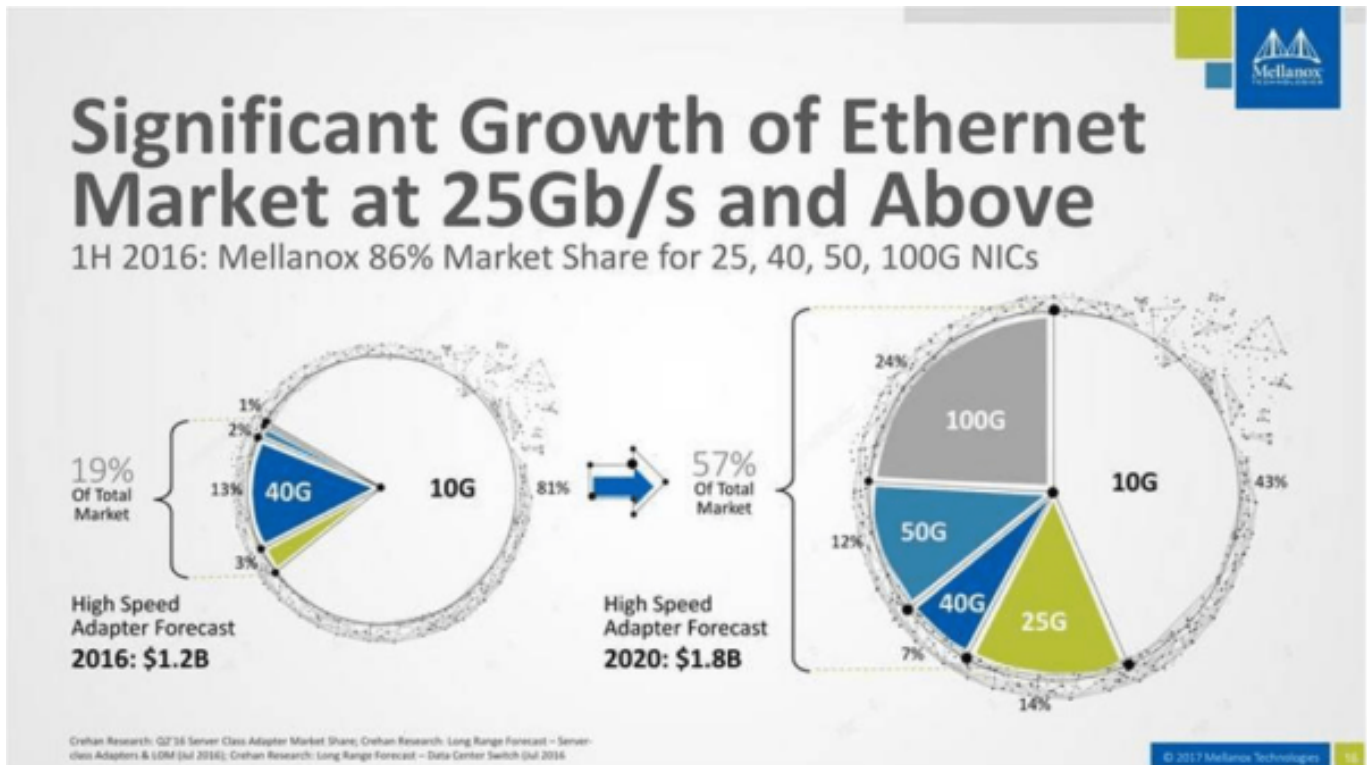

Why Is 40G Ethernet Obsolete? Short Answer: COST

The primary issue is that 40G Ethernet uses 4x10G signalling lanes. On UTP, 40G uses 4 pairs at 10G each. Early versions of the 40G standard used 4 pairs, but rapid advances in manufacturing developed a 4x10G WDM on a single fiber optic pair.

Each 40G SFP module contains a silicon chip that performs multiplexing so that the switch

40G Ethernet
Four by 10G Signal Lanes On a Single Physical Cable

© Greg Ferro 2017
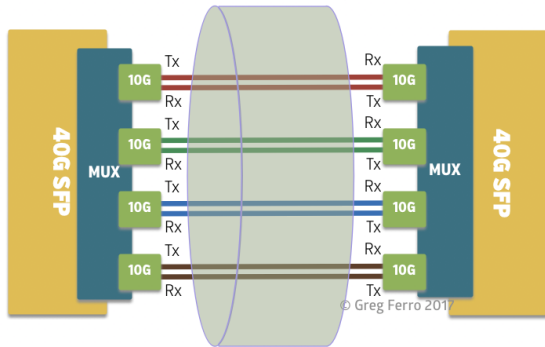
see 40 gigabits in and 40 gigabits out. It's similar to Coarse Wave Division Multiplexing when using fiber. When you buy a 40G cable or QSFP, you are paying for the cost of the chip and software, plus the lasers, etc.

When using 25/50/100G, the "lane speed" is increased to 25 gigabits per second. For 50G there are two 25G signalling lanes and, of course, four 25G lanes in 100G Ethernet.

It's cheaper to buy 50G with two lanes rather than 40G with a four-lane MUX. On the open market, a 50G unit is about half the price of 40G. A 25G interface is about 25% more expensive than 10G.

Mega-Scale Clouds

Volume counts in this market. Mega-scale cloud companies abandoned 40G a couple of years back. Their ordering volumes measure in the hundreds of thousands of units. Large volumes mean cheaper manufacturing, and that drives down the unit price and increases availability.

Vendors With Hard-To-Sell 40G Products

Reminder: Vendor "approved" SFP modules have highly inflated margins and are priced differently. Some enterprise IT vendors have a lot of money invested in 40G switches and are struggling to move that product. By over-pricing the 25G SFP modules you may find that 40G appears to be more attractive.

But, but, but...

Yes, vendors have proprietary BiDir optics that seem cheap. But they are only cheap compared to their pricing on the 25/50G switch that they don't want to sell yet. They need to get rid of the old stock. Or maybe they haven't ramped up on the 25/50/100G switches because customers aren't asking for them.

Don't ask for 40G. Don't buy it. Go directly to 25/50/100G interfaces for lower lifetime costs.

Sponsor: Interop ITX

Where Tech Pros Go For Objective Full Stack IT Education

[Interop ITX](#) takes place May 15-19 at the MGM in Las Vegas. Join Greg Ferro and Ethan Banks for The Future of Networking Summit – a two-day session where we'll take a deep dive into next-generation developments in wide area networks, data center networking, network operations, and software-defined security.

Register for Interop ITX and attend other hands-on workshops like The Future of Data, Container Crash Course, Dark Reading Cyber Security Summit and the Open Source IT Summit. The event's Conference tracks focus on Security, DevOps, Cloud, Infrastructure, Data & Analytics – all the technologies you need for a successful Full Stack IT strategy. If you're looking to accelerate your career, there are also plenty of sessions on leadership and professional development. Plus, check out over 100 vendors at Interop ITX's Business Hall where you'll have an opportunity to meet with leading and emerging tech vendors.

Join us at Interop ITX this May. Use promo code: **PACKETPUSHERS** when you register, and you'll receive 20% off any pass.

We want to see you in Vegas, so visit [interopitx.com](#) and reserve your spot today.

2. A Parent's Security Bind. What Should I Do?

by Drew Conry-Murray

In 2015 the health insurance company [Anthem was attacked by hackers](#) who stole sensitive information on tens of millions of people, including customers and employees.

At the time I worked for a company that was a customer of Anthem, so I received a breach notification from the health insurer, as well as an offer for free credit and ID theft monitoring.

This week, I received a letter from Anthem with a new offer: the health insurer will pay for a credit freeze for my two children. Because my whole family was on an Anthem insurance plan in 2015, I had to provide sensitive information to the insurer, including my kids' Social Security numbers. So this info may have been exposed in the breach.

I'm glad that Anthem is making the offer. They screwed up, and paying for a credit freeze means the company is taking at least a scintilla of responsibility.

If I want to accept the offer, I have to provide the Big 3 credit reporting agencies (Equifax, Experian, and TransUnion) with photocopies of the following:

- my kids' birth certificates
- my kids' SS cards
- my driver's license
- a bank statement, pay stub, or utility or phone bill

That's a heap of personal information (seriously, a bank statement or pay stub????) that I'm handing over to the credit agencies.

And here's the problem: none of these credit agencies are themselves secure. All three agencies have been breached in the past four years. A quick Google search (credit agency name + "hacked") yielded the following:

[Experian hack exposes 15 million people's personal information](#) - The Guardian, October 2015

[Crooks Grab W-2s from Credit Bureau Equifax](#) - Krebs On Security, May 2016

[Top Credit Agencies Say Hackers Stole Celebrity Reports](#) - Bloomberg, March 2013

So am I doing my kids a favor by taking advantage of the credit freeze and potentially saving them from serious ID problems later, or am I simply seeding these agencies with information that might get stolen anyway?

I'd really like to get some opinions on my dilemma. If you have advice, here's my [email](#).
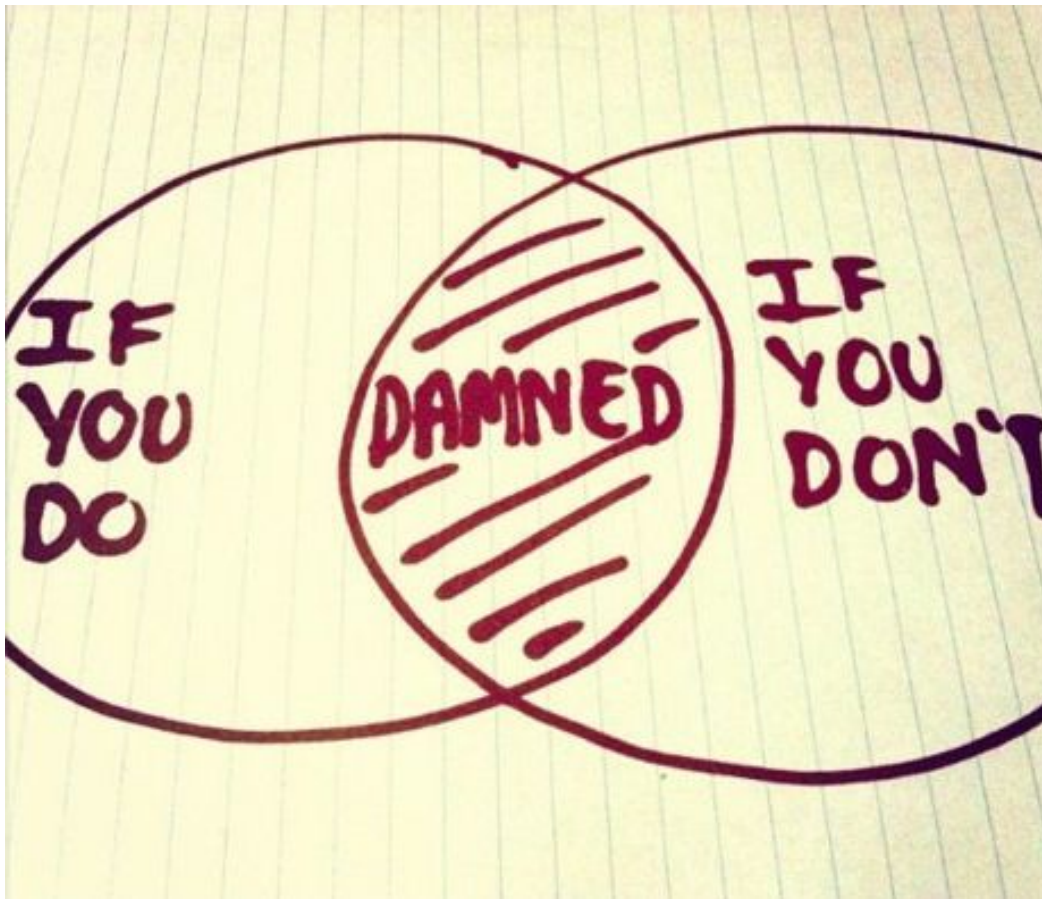
Sponsor: Citrix

Transitioning Load Balancing to the Cloud

Webinar: Transitioning Load Balancing to the Cloud

The need to move load balancers to the cloud and to support new application frameworks like DevOps is driving networking teams to reassess their ADC requirements. Organizations are under pressure to transition applications to new automation frameworks and topologies in the cloud.

[Join our live webinar](#) to learn from the experts at Packet Pushers and Citrix about how to meet the following challenges when moving your load balancing and your ADC to the cloud:

- Managing the shift to cloud-native applications and service-based offerings
- Supporting new application architectures (DevOps)
- Addressing operational complexities and scaling challenges
- Ensuring flexibility and support for hybrid topologies in transition

Date:
Tuesday, March 21, 2017

Time:
9:00 am PST
18:00 pm CET

Guest Speakers:

Ethan Banks
Co-Founder
Packet Pushers

Derek Yee
Sr. Product Marketing Manager
Citrix Systems

Chiradeep Vittal
Distinguished Engineer
Citrix Systems

[Register today](#) and discover how the Citrix NetScaler software portfolio is evolving to enable your business's digital business initiatives in the cloud.

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.

By Greg Ferro and Drew Conry-Murray

To predict the future, look at the past

The poorly-named "serverless" computing concept prompts a lot of eye-rolling, but a humorous post from Cloud Opinion serves as a reminder that hyped-up, fanciful concepts sometimes have a way of catching on. Don't say you weren't warned.

A Tale Of Two Clouds: Amazon Vs. Google

If there was a single takeaway from Google's recent Cloud Next conference, it's that Google is serious about the public cloud. The search giant has significant ground to make up against Amazon, so it's doing what upstarts often do: challenging the incumbent on fronts like pricing and flexibility. Robert Aboukhalil [posted a blog](#) comparing Google Cloud Platform and AWS on pricing and instance configuration.

> *"GCP is a lot more flexible when it comes to instance configuration. Along with predefined instance types similar to AWS, GCP also allows you to customize how many CPUs and how much RAM to use."*

CEO Interview: Huawei's Eric Xu

Huawei has a minimal presence in North America, but globally the company has asserted itself as a telecom and networking equipment giant (not to mention having a decent business in consumer gadgets). [Light Reading scored an interview with CEO Eric Xu](#) to talk about the company's target markets, its plans around IoT, and a growth target of $150 billion.

> *"It is not possible that IoT can deliver any substantial profits. But that's just within a short period of time. Maybe it is possible that in five to ten years the IoT market will really take off."*

CEO interviews are sometimes little more than dull recitations of PR pablum, but this one had some interesting nuggets, particularly around IoT.

Product News

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

Arista Announces Containerized OS That Can Run On Whitebox Switches

Arista is developing a containerized version of its EOS switch operating system. The objective is to make it easier for operators of very large data centers to integrate ToR switches into orchestration systems. One upshot, however, is that EOS can now be ported to whitebox switches, though integration and certification work will be required.

It's clear from talking with Arista that selling EOS on whiteboxes isn't a priority for the company. They'd much rather sell you their own hardware/software bundle. The driver here was to accomodate very large customers that want to manage

their switches like they manage servers. However, the whitebox door is now open and Arista, however reluctantly, is stepping through it.

LINK

cPacket Cx4100 Brings Line Rate Packet Analysis To 100G

The vendor cPacket makes packet analysis hardware that analyze packets right on the box, in real time. The company recently announced a new box with 4 ports of 100GbE line rate monitoring and analysis. Ethan Banks conducted an on-the-spot video interview with cPacket at a tradeshow, so you can see a demo of the product in action.

LINK

Recent Podcasts
The last five podcasts published on Packet Pushers

PacketPushers.net - The Last Five

Datanauts 075: AWS Warts And All

Network Break 126: Extreme Buys Avaya Networking; Arista Containerizes EOS

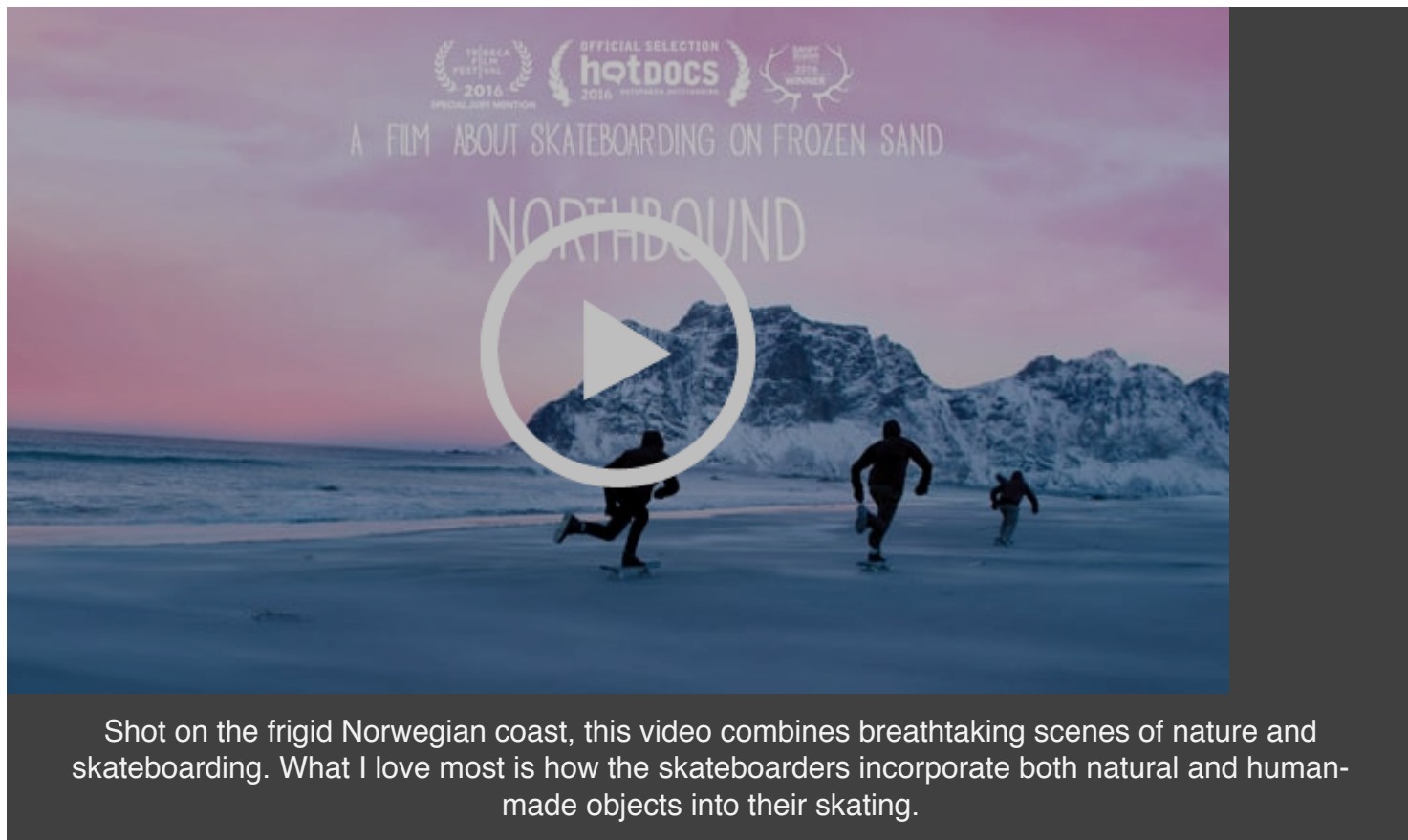Show 330: Inside Aryaka s Global SD-WAN (Sponsored)

PQ Show 107: The Applicability Of Machine Learning To Networking

Datanauts 074: Understanding Data Models & Why They Matter

Watch This!

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

Shot on the frigid Norwegian coast, this video combines breathtaking scenes of nature and skateboarding. What I love most is how the skateboarders incorporate both natural and human-made objects into their skating.

Can't get enough newsletters? Check out Link Propagation, our newest publication. We send you a free weekly digest with tech news, interesting blogs, and industry announcements, all curated by the Packet Pushers. It's an easy way to keep up and stay informed. Subscribe at packetpushers.net/link-propagation.

Quick Survey: ID Theft Monitoring

Do you use a credit or ID theft monitoring service to alert you if your personal information is being misused?

A. Yes, I pay for it myself
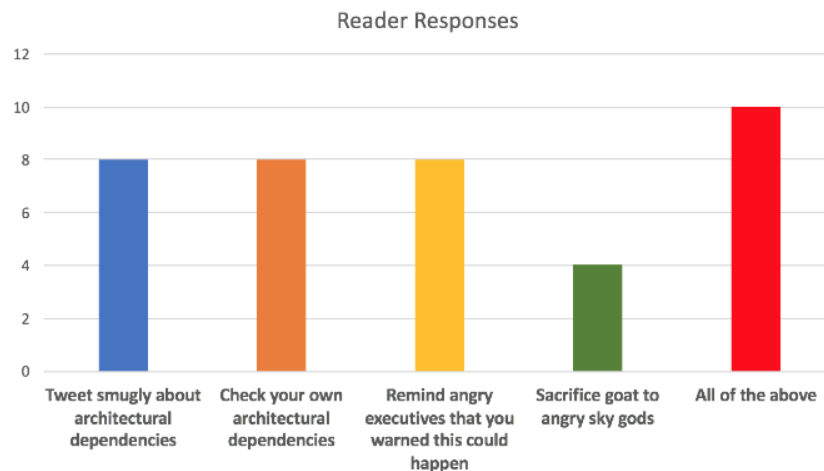B. Yes, it's paid for by an organization that got breached
C. It was offered to me after a breach, but I didn't take it
D. No

Last Issue's Survey Results

When a major cloud outage occurs, how do you react?

Reader Responses

Source: Packet Pushers Human Infrastructure Survey, March 2, 2017. 38 respondents

Did We Miss Something?

Got an link or an article to share? Email it to humaninfrastructure@packetpushers.net