*IN THIS WEEK'S ISSUE: Engineers get blamed, scowling as a work technique, dealing with a know-it-all, and more. And make sure you enable the images; the magazine looks a whole lot better that way!*


**Table of Contents**
**(aka The Project Plan)**



**Issue Number 20**

**12/10/2015**

The "Dealing With Layer 8" Edition

## Thought For The Week:

Did you get your 'Star Wars' tickets yet?

# 1. Engineers Getting Blamed

## by Greg Ferro

Volkswagen is currently blaming its engineers for implementing the workarounds that optimized the pollution controls to bypass government testing that was intended to keep the people safe from toxic diesel particulate emissions.

I cannot believe that executives did not know, approve, or review the process. In a tightly controlled, tested, stable and rigid organization that designs cars, there will have been multiple levels of management review and authorization to spend billions in factories and production facilities.

So when Volkswagen starts blaming a few engineers for the problem, I'm beginning to think a scapegoat has been found.

## Being The Patsy

I have been the scapegoat many times. IT teams often blame everything wrong on the last person to leave the company. Admit it, we've all done it.

As someone who was part of big changes to a few places, I know a lot things that became my fault. Heck, I've been hired because I'm willing to take the blame if it goes wrong.

What bothers me here is that executives are pointing fingers at engineers to avoid taking the blame themselves. There are echoes of the financial crisis in 2008 when traders blamed anyone but themselves for overextending credit.

## Morality

Are there morals in business? What constitutes ethics in a modern corporate entity when it is enslaved to short term profits and results?

These are questions I have faced in corporate settings. Technology creates change and affects people's lives - homes, children, relationships. Back in the

80's I deployed an accounting system that put forty people out of work. I've been part of outsourcing projects that saw unsuspecting long-term employees get swiftly marched out the door.

Apart from the personal, I've worked for gaming companies that are quite ruthless about exploiting people who want to believe they can escape poverty in a single lucky event. And let's not forget the banking crisis caused by technology-enabled loans and mortgages. What about working in nuclear power generation? Or for a tobacco company after years of false claims and misleading people about the health of cigarettes?

Working for these companies created moral crises for me, but it wasn't personal - I did not directly know the people being affected.

Was it right to put that issue to one side? Am I the right person to judge such morality when I'm an engineer? I believe that management and executives are required to consider morals, but often don't because it's not rewarded or recognized.

## Armor Plating

There are two steps to preventing a Volkswagen-style crisis in your work. One, don't participate. Two, check your armor plating.

It can be difficult to see the big picture when you're focused on a specific technical challenge. It might be possible to offer a solution and trust that management will judge its integrity and safety. But you must ensure that you are armor-plated. Protect yourself.

How do you install armor plating? Document your position/view in official document (not email). Be aware of company politics and what it might do with your work.

And don't fool yourself that it's not your problem. These Volkswagen engineers might end up taking the blame; think about the damage to their personal lives. You don't want to be them.

# 2. Scowling For Survival

## by Tom Hollingsworth

"Are you okay?"

I hear this quite often when people walk up to me. They see the scowl on my face and immediately assume I must be worried or upset.

They don't believe me when I say I'm fine. If I'm fine, why am I scowling?

Because I've worked in IT long enough to develop defense mechanisms, and my scowl is one of them.

I've learned that people will happily walk up to you and give you more work without a second thought. They see you're smiling, and they want to make it go away with bad news or extra projects.

But If look like you're in a bad mood, people approach you differently. They're cautious. They don't want to risk getting yelled at. So they tip toe around you.

You don't have to be in a bad mood; you just have to look like it. If your default expression is non-committal or dark, people won't approach you. It's the same face people use on the subway to avoid unnecessary conversation.

If you adopt the scowl for your work life, you'll find people are less willing to dump things on you. Add a pair of headphones and you can effectively disappear. You don't even need to listen to anything!

In the workplace, appearances are everything. Sometimes the wrong appearance can be the right thing to do.

# Sponsor: Talari

Talari creates a THINKING SD-WAN that makes the network smart and responsive, adapting in real time to changing conditions. Talari puts intelligence in every packet and at every endpoint, performing one-way measurement to identify packet loss, jitter, and the failure of any one network path—then rerouting packets to keep your data flowing. Mission-critical apps like VoIP and VDI take priority and always deliver. Visit talari.com for more details.

TALARI™
A better way to WAN

# 3. Don't Let IT Eat You Up

## by Ethan Banks

During all of 2007 and early 2008, I was studying diligently for my CCIE exams. I got up early, commuted to work, lived the life of a network architect in a constantly changing DC, got stressed, commuted home, and studied. I studied on weekends too, usually all day on Saturday.

This lifestyle meant I was sitting for 12+ hours a day, almost every day of the week. I might've hit the gym now and again—it's hard to remember. My strongest memories of that time are of staring at screens (multi-tabbed terminal windows in particular) and not exercising.

When I wasn't working or studying, I was eating. I've never been much of a drinker, so food has been my solace. Not just any food either, but often self-indulgent, high-calorie comfort foods that packed on the pounds.

And oh yes, I packed on the pounds. I'll spare you the stats, because they don't matter and they invite comparison, which is not the point.

The point is that IT will consume your health if you let it. IT tends to be both technically demanding and stressful. IT often demands long hours. IT usually affords enough disposable income that we can treat ourselves to food, booze, or smokes if we want. And because we work so hard, we feel justified in indulging.

Now in my mid-40's, I've come to see daily overindulging as a form of self-abuse—numbing the pain of working in IT with temporary pleasures that have permanent health consequences. And those consequences aren't necessarily just physical; they can also be mental. Brain function and mood react to the stimuli of food and drink.

I am new to the studies of body chemistry, mental function, and the impact of a modern diet on said things. And I'm not here to preach. To each his own.

But if you want to improve your ability to learn and retain information, balance your moods, sleep better, and so on, I think there's much to be said for the quality of what you put into your mouth.

For me, eating well pays dividends, even though I'm not as rigorous as I might be about my diet.

If you've never investigated diet and health, allow me to aim you at two films and a book that have provided me with enough education to start making changes.

Supersize Me (2004)
Film. Live on McDonalds. See what it does to you.

That Sugar Film (2015)
Film. Live on processed foods, which often have added sugar (even when you don't expect it). See what it does to you.

The Four Hour Body (2010)
Book. Shift your diet from mostly carbs to mostly fat and protein. And see what that does to you.

While these are assuredly condensed versions of complex issues, they compelled me to improve my personal life through better gastronomy. I feel that I'm a better performer due to better overall eating. At least, mostly better eating —I still loves me a Big Mac now and then.

# 4. Dealing With Know-It-Alls

## by Lee Badman

I'll bet everybody has run into at least one know-it-all in their career: That network person who is endowed with the Wisdom of the Gods. His or her way is THE ONLY WAY to design, implement, or support a given topology.

Forget peer review or talking about options that might make sense for a given situation. You do it their way, or you face scorn. Or the silent treatment.

Sooner or later you'll be schooled on the many ways that you're wrong, even if your methods pay off in the fulfillment of design goals and reliability.

The know-it-alls in my orbit aren't bad people. It's just that they can be hard to take, with their proclamations of "You must..." "Never..." and "Always do…".

Here’s the thing for us non-know-it-alls: There's lots of ways to do things in networking. Not every situation is the same, and whether we’re talking LAN, WAN, WLAN, or whatever, there's room for flexibility of approach. And sometimes you have to depart from a best practice.

The closed-minded might do OK working from a boilerplate most of the time, but occasionally the best networking strategy takes creativity. You can’t know everything and still be open-minded, because open-mindedness requires room on your mental hard drive to write new ideas.

So how do you work with a know-it-all to get them on board with an uncommon approach? I’ve found the following actions helpful:

—Show other situations that were successful based on your methods

—Have documentation that supports your point (standards, vendor design guides, peer designs)

—Offer to do a pilot or demo to show you’re not as clueless as he/she thinks

Sometimes a know-it-all’s rigid ideology is worth following, but occasionally it’s a poor fit. It’s up to those of us who don’t know it all to tell the difference.

# Sponsor: ThousandEyes

ThousandEyes gives you visibility into every network your company relies on—your corporate  network, the Internet, cloud service provider network—all from one place. ThousandEyes Cloud Agents are deployed in locations all across the globe, and Enterprise Agents provide additional visibility from within your own network.Together, these vantage points provide the most complete understanding of network topology, dependencies, and behavior. Sign up for a free account and choose a free ThousandEyes t-shirt.

ThousandEyes

# 5. Two Months Say More Than $45 Billion

## by Drew Conry-Murray

Mark Zuckerberg made a couple of impressive announcements recently. One is that he is turning over 99% of his Facebook shares, worth approximately $45 billion, to an LLC for charitable causes (and potentially for-profit investments).

This jaw-dropping amount of money drowned out another Zuckerberg story: that he will take two months of paternity leave to be with his newborn daughter.

To me, the second story should be getting the most attention because it could have a meaningful impact on gender inequality in the workplace.

While many factors affect workplace inequity, child birth and child and family care are especially significant.

Social expectations put child and family care burdens disproportionatly on women. The paper "Explaining The Gender Wage Gap" cites Bureau of Labor statistics that show:

"*Employed mothers with a child under age 6 spend about 47 more minutes per day caring for and helping household members, compared to employed fathers.*"

Over the span of a career, those minutes add up. If women are the ones expected to stay home when a child is sick, or step away from a task or meeting for carpooling or school activities, it creates the impression of an employee who isn't fully committed.

For instance, a Stanford researcher conducted a study that found “employers rate fathers as the most desirable employees, followed by childless women, childless men and finally mothers.”

Other research demonstrates that becoming a father can boost a man’s salary by an average of 6 percent, while becoming a mother decreases a woman’s salary 4 percent.

In other words, employers perceive fathers as stable and reliable, while mothers are susceptible to distractions from home and thus less appealing as an employee.

What does this have to do with Zuckerberg?

In fields such as technology, investment banking, and law, grueling workhours are regarded a status marker and a kind of mental machismo. If you aren’t putting in 60-hour weeks, your commitment, your place in the hierarchy, and even your self-worth may be called into question.

And while many tech companies offer generous family leave packages (Facebook gives employees 4 months paid leave after the birth of a child), men are less likely to take full advantage of these policies.

For instance, Boston College surveyed more than 1,000 fathers across a variety of industries. Approximately 40% of fathers surveyed took just two weeks of paternity leave, and 25% took only one week.

The survey also noted “There are strong correlations between the supportiveness of the workplace culture and immediate manager, and the number of weeks that fathers took off.”

To have the CEO of one of the biggest global tech brands step out for two months sends powerful cultural signals.

One is that a father’s role in child and family care is valuable and should be supported; the fact is, if men want to support workplace equity, they need to take on more child and family duties, and support coworkers who do the same.

Another is that just because a man or woman needs time or flexibility for family care doesn't mean they can't be productive and dedicated employees.

# 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.**

## Data Storage on DNA Can Keep It Safe for Centuries

Researchers are experimenting with DNA as an archival storage system. Experiments have shown the ability to store data and retrieve specific files.

From the **New York Times**:

"*In two recent experiments, a team of computer scientists at the University of Washington and Microsoft, and a separate group at the University of Illinois, have shown that DNA molecules can be the basis for an archival storage system potentially capable of storing all of the world's digital information in roughly nine liters of solution, about the amount of liquid in a case of wine*."

LINK

## IBM, Seared By Hair Dryer Hacks, Pulls Plug On Campaign

IBM feels the heat after a tin-eared campaign called #HackAHairDryer, meant to encourage women in science, got called out for sexist stereotyping.

From the **Wall Street Journal**:

"*...social media users singed the company with complaints of sexism. Several female engineers said they were too busy working on things like robotics and DNA sequencing to play with hair dryers*."

LINK

## Accelerating SSL Load Balancers with Intel® Xeon® v3 Processors

This article from Intel demonstrates the very high level of load balancing that can be achieved with HAPROXY on modern Intel CPUs when using hardware acceleration. In this case, AVX2 extensions are used to accelerate SSL connections to 2,000 connections per second on 2 CPU Cores.

Not bad for the money.

LINK

## Using SSH Through A Bastion Host Transparently

From **Rob Giseburt**:

*"Having a bastion host is a good security practice commonly deployed to strengthen yet simplify security controls of an environment.  However, adding bastion hosts creates complexity in remote execution of scripts or deployment tasks.  Here we will be using a bastion host to serve as a SSH server that we can "hop" through into another machine (real or VM), allowing users to automate remote task execution over SSH. We will be demonstrating how to make that connection transparent and automatic, not only for manual SSH connections but also for programmatic SSH connections such as with GIT or Ansible.*"

LINK

## DRAM’s Damning Defects—and How They Cripple Computers

An IEEE Spectrum article looks at the impact of DRAM failures and how we should handle them. Note: The future of x86 servers as routers, firewalls, and other appliances means this type of knowledge will be important in the future.

LINK

## GoBGP - Open Source BGP implementation - written in Go

I'm told that it's not particularly hard to write BGP software. All the specifications are written down in IETF RFCs so it's not surprising that people are writing their own. This one is written in Go and will be popular with a group of people who want to set up BGP speakers/route reflectors that are ultimately programmable and verifiable.

The first link is a RIPE70 presentation, and the second is the Github source code.

LINK
Github

## Thoughts on Two Years of Working from Home

Jeremy "PacketLife.net" Stretch talks about his experience in a home office.

LINK

## Formula E & Kinetik announce driverless support series

From **Formula E**:

"*Formula E and Kinetik today announced a partnership with the intention to launch a global race series for driverless electric cars. This new championship called 'ROBORACE' will provide a competitive platform for the autonomous driving solutions that are now being developed by many large industrial automotive and technology players as well as top tech universities*."

LINK

PACKET PUSHERS

Priority Queue

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

This channel has our nerdiest shows on data networking technologies and products.

The Network Break

PACKETPUSHERS

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

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

# Sponsor: Sonus Networks

Sonus Networks wants you to know that there is a better way to address business continuity with less cost, more flexibility, and increased management

efficiency – a Software-Defined WAN (SD-WAN) powered by Sonus' NaaS IQ. Ensure you know the differences between SD-WAN business connectivity and SD-WAN business continuity; visit Sonus online or reach them at 1-855-GO-SONUS and tell them you heard about them on PacketPushers.


# Research Papers

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

## Simple BGP

BGP has about a billion wanker knobs. This means its has poor reliability in real life because its easy to make huge mistakes. This presentation proposes a way to simplify BGP configuration for the edge so that the 50,000 new edge connections per year don't mess up my part of the Internet

LINK

## Addressing the challenge of IP spoofing

This research paper explains how IP Spoofing on the Internet happens and the damage it causes. See the previous research paper on new ways to prevent it by using BGP to filter spoofing at the edge of the network (but nobody bothers).

LINK

## Operating system support for warehouse-scale

## computing

This links is a Ph.D. thesis that provides insight into the future of operating systems in the data center. Instead of the "standalone" OS on every server, this research proposes "distributed operating systems" that are aware of all servers in the data center system and the advantages of that.

*"These data centres pose challenges to systems software and the operating system (OS): common OS abstractions are fundamentally scoped to a single machine, while data centre applications treat thousands of machines as a “warehouse-scale computer” (WSC). I argue that making the operating system explicitly aware of their distributed operation can result in significant benefits."*

Challenging read.

LINK

# Product News

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

## Arista Delivers Cloud Connect Solutions Across Data Centers

Arista is into the Data Center Interconnect business in a big way. Previously announced DWDM support with Infinera has some customers willing to say they did it.

LINK

## Aruba Sensors

From **Aruba**:

*"Aruba Sensor, a small, dual-band 802.11n client radio and a Bluetooth Low Energy (BLE) radio, makes it easy for IT to turn a mobile engagement proof-of-concept into a full-out, multi-location deployment by pulling beacon data into one centralized location.*

*The Aruba Sensor plugs directly into an AC outlet and can hear other Aruba Beacons within a 25-meter range and reports relevant data over Wi-Fi to the cloud-based platform."*

The sensor is fully integrated with Aruba WiFi networking and also has an analytics platform. Lots of applications are possible and I saw demos of smartphone apps that can locate you to 1 meter inside a room with just 4 to 6 sensors.

I've found Aruba whitepapers are very readable and useful. If you have questions, hit up the community forums for lots more info.

LINK

## New Version of Cisco ACI

Cisco ACI followers will be pleased the next version APIC has been released. The headline feature is that ACI is using Project Contiv for Docker container networking. I'm still working on what Project Contiv actually does but here is a quote from the press release:

*"Project Contiv is an open source project defining infrastructure operational policies for container-based application deployment. ACI's unified policy model enforces policy via endpoint groups (EPG), a collection of network endpoints that includes a wide range of entities, including bare- metal servers, virtual machines, and containers."*

Other features:

- Segmentation using VMware VDS, MS Hyper-V
- Group isolation using metadata (aka policy groups)
- Multiple data centers
- Service chaining
- SNMP support for APIC monitoring

I need to look in to the service chaining aspect (Network Services Headers?) but be aware that ***any*** SDN platform on the market today is like a puppy: once you own it, you own it for life. And it isn't interoperable with other SDN platforms.

SDN platforms do, of course, integrate with other companies' products that make the platform useful (such as F5, A10, SourceFire, and so) but, for example, NSX and ACI do not interoperate. Like Oracle databases, it's all or nothing.

# Recent Articles

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

## 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

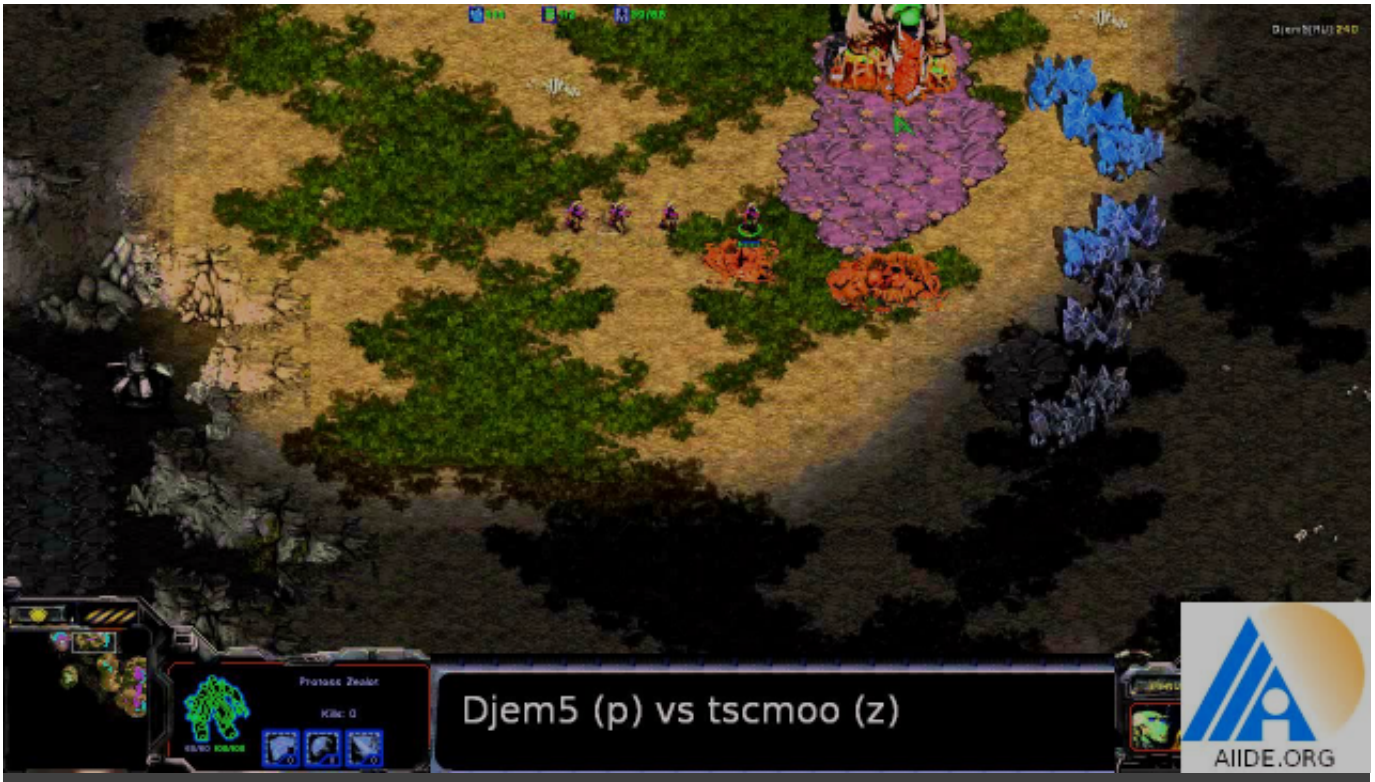
## PacketPushers.net - The Last Five

Network Break 182: BGP Hijacked For Cryptocurrency Heist; Juniper, Big Switch Unveil New Products - Link

Show 387: AWS Networking – A View From The Inside - Link
PQ 147: Connecting Security And GDPR Compliance (Sponsored) - Link
Datanauts 131: Masters And Mentorship - Link
Network Break 181: Russia Accused Of Infrastructure Attacks; US Targets ZTE - Link

# Watch This!

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




A human plays Starcraft against an AI program in a contest hosted by Annual AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment.

Journalist Glenn Greenwald on why privacy matters.

## Link Propagation Newsletter

**Our weekly newsletter delivering essential headlines, announcements, and useful news to your inbox**

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.

# Did We Miss Something?

Got an link or an article to share? Email it to

humaninfrastructure@packetpushers.net

## The End Bit

*Sponsorship and Advertising - Send an email to* humaninfrastructure@packetpushers.net *for more information. You could reach 5,013 people.*

**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.**

*We don't give away your email address or personal details because that would suck.*