

*IN THIS WEEK'S ISSUE: Too Big To Fail, Alternative Certs, and Job Title Inflation. 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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**Issue Number 42**

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The "Answer to life, the universe and everything" issue.

**Thought For The Week:**  
Don't panic.

# 1. Too Big To Fail?

by **Greg Ferro**

People think big companies are too big to fail and that's why you should buy from them: to protect your support and maintenance.

Except that this is no longer true. To wit:

1. HPE just divested many of its software assets. While HPE maintains a substantial stake in the new owner, I'm confident that HPE will walk away from those "safe products" in the shortest possible time.
2. EMC was losing sales momentum in the storage market as it changed to a lower cost structure. It was late to market with new products, and in spite of successful attempts at entering new markets with VMware, Pivotal, and so on, they weren't enough to offset the shrinking core business.
3. Cisco is moving away from Enterprise Networking into IoT, cloud, and SaaS products. Like storage, lower-cost options exist, and enough customers are moving away from Cisco to affect the bottom line. Hyperconverged rack scale systems (like Cisco UCS) reduce the need for data center networking with integrated switches. At the same time, switch hardware has more than enough ports and performance to last customers for a decade. Branch networking is under threat from SD-WAN, and wireless is the last area of networking innovation and growth.

The big companies are making enormous changes, including massive staff reductions, discontinued product lines, and scaled-back support. Oracle, IBM, and SAP are all struggling to map out a future that they are happy with, and it's questionable whether they will survive.

An [article from the BBC](#) notes that the average lifespan of a company on the S&P 500 index is just 15 years, according to Yale professor Richard Foster. The professor "estimates that by 2020, more than three-quarters of the S&P 500 will be companies that we have not heard of yet."

## What About Startups?

Startups, really mid-size companies, don't have the vast overhead and legacy costs of big IT vendors. Software-only companies can maintain themselves at \$100MM revenue with a staff of 100-200 for development and support. They don't have hardware, warehousing, or production that bulks up their costs.

Startups are tightly focused. They (usually) aren't chasing the next big thing. They provide a good service because they aren't trying to solve every problem in the world. They don't have vast sales teams wearing out airline seats to go face-to-face because the deal is overpriced. They won't waste your time with a new "strategic initiative" every quarter.

## Change Your View

I think that for the next five years, all the big"vendors will be as risky as startups as they transform into "cloud-ready" businesses. Big companies have to make BIG changes.

Competition from public cloud, commoditized hardware, and low-cost financing mean that startups have equal business footing with big companies for at least the next five years. And they will have products, support, and sales that might be suit your company best.

Big used to be better in technology. Today, small companies compete equally.



## Sponsor: Viptela

### The Packet Pushers: Live In NYC!

Meet the Packet Pushers in person in New York City on Monday, October 24th at a [live event sponsored by Viptela](#). Find out how SD-WAN enables cloud transformation when Greg Ferro and Ethan Banks interview three network architects about their deployment experiences in a live podcast recording.

You can also connect with peers, meet Viptela customers and executives, and enjoy food and drink courtesy of Viptela. Join us for an exciting night at the Loft Flatiron, 6:30 pm, on October 24th. [Register here](#) to reserve your spot.

**Location & Time:**

The Loft Flatiron  
4th Floor, 20 W 23rd St, New York, NY 10010  
October 24th, 6:30 PM

## 2. Cloud & Automation Certs

**by Ethan Banks**

For those of you interested in certifications related to orchestration or automation, I've compiled a list. I doubt this list is comprehensive, but these are the ones that bubbled to the surface when I put out a query on Twitter. My thanks if you were one of the respondents.

I am not passing judgement on any of these programs. I have no personal experience with any of them. Think of this as a starting point that you can use in your own "new IT stack" certification road map.

### [Cloud School](#)

Cloud School claims to be a "global provider of vendor-neutral cloud training and certification." Their certifications appear to be their own, and follow a ladder structure. The entry cert is the Certified Cloud Professional. Building on that are the Certified Cloud Technology Professional and Certified Cloud Architect certs. Various specialist certifications round out the portfolio.

### [Amazon Web Services \(AWS\) Certification](#)

Amazon offers five certifications with focus areas across operations, development, and architecture running on AWS. There are associate-level and professional-level exams.

### [A Cloud Guru](#)

A Cloud Guru offers several inexpensive courses focused on AWS. These courses map to the various AWS certifications. There's even a [bundle](#) of courses that cover all 5 AWS certs.

### [Certified OpenStack Administrator](#)

This is the first certification offered by the OpenStack Foundation. The page lists dozens of training partners aimed at helping you with the COA.

Examination is performed via virtual proctor system, as opposed to the joyous experience of a Pearson Vue testing dungeon.

### [Mirantis OpenStack Certification](#)

Mirantis is an OpenStack vendor, putting a shine on otherwise unadorned OpenStack. It offers a couple of exams as well as bootcamp training for associate and professional levels. It promises a master level in late 2016. With this approach, you end up with Mirantis certs, but can also level up to a COA cert, as the subject matter is all related to OpenStack.

### [Certificate of Cloud Security Knowledge](#)

Published by the Cloud Security Alliance since 2010, the CCSK purports to be "the industry's first examination of cloud security knowledge." I have no sense of how far this one goes, but the seat of my pants opinion is that it doesn't go that deeply.

### [Certified Cloud Security Professional](#)

Backed by the Cloud Security Alliance as well as ISC2, "the CCSP credential denotes professionals with deep-seated knowledge and competency derived from hands-on experience with cyber, information, software and cloud computing infrastructure security."

### [Microsoft Azure Certifications](#)

Azure is Microsoft's public cloud. Public clouds are not all the same. AWS is a distinct offering from Azure, which differs yet again from Google Cloud, etc. Therefore, it might make sense to certify not only in AWS, but also in Azure -- different clouds for different problems. In Azure, Microsoft offers the familiar MCSA, MCSE, and MCSD certification tiers that Microsoft cert seekers have been familiar with for a couple of decades or so.

### [Puppet Certified Professional](#)

Puppet is a popular agent-based configuration automation tool. The PCP is the companion certification, achievable with a single exam. Puppet isn't overly popular for networking automation because of the agent requirement. It was trendy a couple of years ago for network vendors to add a Puppet agent to a switch, but there has been no talk of that lately.

### [SaltStack Certified Engineer](#)

SaltStack is another configuration automation tool. In recent talks with networking vendors, I hear that SaltStack is being used for networking automation more and more. According to SaltStack, "the SSCE exam is timed at one hour, is open-book and Internet but not open friend, and includes 80 questions randomly pulled from a list of hundreds."

### [Chef Certification](#)

Yet another powerful and popular automation tool, Chef offers Certified Chef Developer and Certified Chef Architect certifications. Several training options, including online, are available.

### [Red Hat Certificate of Expertise in Ansible Automation](#)

Ansible was its own open source automation tool with a commercial variant that helped pay the bills. Ansible has been absorbed into Red Hat, including Red Hat's long-running education and certification programs. Ansible is, in my opinion, the most popular automation tool used by networkers. If I was most keenly interested in a network automation tool, I would start with Ansible. However, I find Red Hat's pricing for official training needlessly oppressive for a tool with its roots in open source.

### [Red Hat Certified Architect: DevOps](#)

This one would be tough, but I suspect might be quite comprehensive. From Red Hat's site, "A Red Hat® Certified Architect (RHCA) with a DevOps concentration is a Red Hat Certified Engineer (RHCE) or Red Hat Certified Developer who has attained Red Hat's highest level of certification, proving their skills and knowledge in technologies and practices that can accelerate the process of moving applications and updates from development through the build and test processes and on to production."

### [Full Stack Web Developer Nanodegree](#)

The most far-afield for those of you reading this, this Udacity nanodegree melds

the disciplines of development and operations. I see great value for the modern IT stack in that combination of knowledge. The very best infrastructure engineers understand how applications work, and I think the most competent developers have a clue about infrastructure. For those reasons, this nanodegree appeals to me.

*If you know of related certifications you believe should be added to this list, send an email with an URL to [ethan.banks@packetpushers.net](mailto:ethan.banks@packetpushers.net). We're planning to publish this to [packetpushers.net](http://packetpushers.net) in the future, so the more comprehensive the list, the better.*

## Sponsor: Nuage Networks

### Why Your WAN Needs SDN

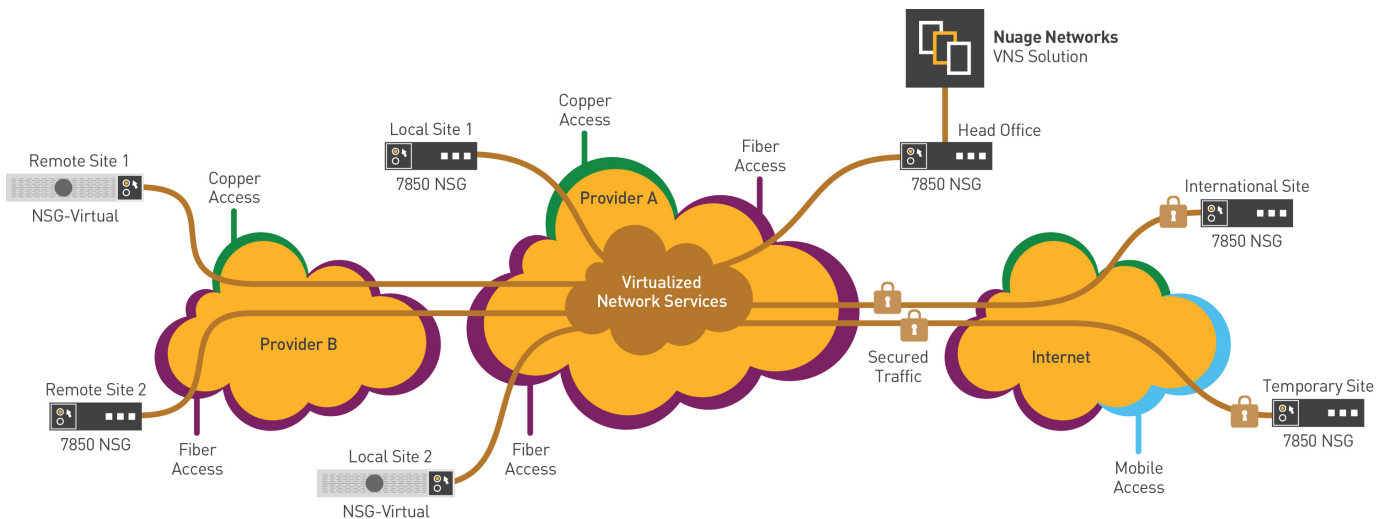
Wide area networks are faster than they used to be, but they're still very challenging to manage. Changes must be rigorously managed, which slows responsiveness. Commissioning take a long time. There are so many devices — routers, firewalls, WAN accelerators — that connecting branch offices is complex. And security is cumbersome.

While the WAN remains cumbersome and complicated, Software Defined Networking (SDN) is changing the way data center networks are built and deployed. A dynamic and agile SDN environment in the data center is already enabling the move to cloud-based IT. Companies around the globe are reaping the rewards of virtualized infrastructures that can instantly and securely deliver compute, storage, and networking resources to thousands of user groups.

It makes sense to extend the reach of virtualized network services from the data center across the WAN to staff in branch offices. SDN cuts complexity while increasing flexibility and functionality:

- Respond faster and with greater agility to changes in your WAN environment.

- Offer a self-service portal to staff in branch offices so they can manage their own moves, adds, and changes.
- Reduce the number and complexity of the devices you install at branch locations.
- Have the freedom to choose different bandwidth providers at each branch location.



## Get SD-WAN On Your Terms

The Nuage Networks SD-WAN solution uses a centralized policy manager so all functionality is based on a template of networking and security policies. And the hardware installed at branch locations is based on the same x86 hardware that you have installed in your data center.

## Branch Out With Freedom, Flexibility, And Control

Find out more about the next evolution in wide area networking. Read the case studies. And watch John implement an SD-WAN in minutes, turning from zero to hero as he easily brings cloud networking to a branch location. Visit

<http://www.nuagenetworks.net/SD-WAN>





# 3. Network Architects & Title Inflation

by Keith Townsend

In my early 30's, I felt the pressure to advance my career. At the time I thought that meant becoming a manager. I was already a Sr. Network Engineer and had no other options within my organization. If I wanted to make more money, I needed to become a manager.

My boss warned me that becoming a manager might pay more, but it wasn't necessarily the advancement I wanted. Looking back, that warning was code to go look outside our organization.

I get the impression that the same is happening for engineers in today's workforce, at least based on the conversations I'm having with recruiters.

For example, the job title of "Architect" has become a dumping ground for what's essentially a Principle Engineer. Recently I got a call about a Senior Architect position at a cloud provider. But when the recruiter finished describing the role, I asked why they didn't just label the job Principle Systems Engineer?

I think I know the answer. There's a perception that being an Architect is better than being an engineer. After being in an architect-type role for more than a few years now, I can tell you no. It's not better. It's just different.

If you enjoy being a deep subject matter expert and immersing yourself in the guts of network/storage/compute design and configuration, the true architect role will not fulfill that need.

As with a managerial role, architects spend less time setting knobs and more time setting standards, speaking with the business, and clearing the way for engineers. PowerPoint, Word, and Excel become the primary tools of choice instead of Visio and a command line.

On the flip side, if you want to advance your career, don't shy away from postings for Architects. Many of those roles are simply Principle Engineer positions pumped up to tempt engineers looking for the title.

## Sponsor: ONUG

### Join The Packet Pushers At ONUG Fall 2016!

Join the Packet Pushers at ONUG Fall 2016 in New York. This event focuses on the future of IT and the rapid evolution in business technology. Hear from CTOs and CIOs from the largest enterprises, including GE, FedEx, Visa, and Bank of America, who will share their unique visions with the ONUG Community.

For the [full conference agenda](#), [speaker lineup](#), and more about the fall conference, [please visit our website](#).

And don't miss your 30% discount! Just use the code PP30 [when you register](#).

#### **Location & Dates:**

Metropolitan Pavilion  
125 West 18th Street New York, NY 10011  
October 24 & 25



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# 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 **Drew Conry-Murray**

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## Dennis Ritchie, Father of C and Co-Developer of Unix, Dies

Wired [has published a remembrance](#) of Dennis Ritchie, who created the C programming language and helped to build UNIX, that helps put his accomplishments in context.

"...Ritchie has shaped our world in much more fundamental ways than Steve Jobs or Bill Gates have. What sets him apart from them is that he did it all not in a quest for wealth or fame, but just out of intellectual curiosity."

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## Police Use Startup To Track Protesters

The [BBC reports](#) that a startup called Geofeedia has been offering tracking services to law enforcement organizations to monitor protests and activists. The service relies on information shared on social media sites such as Facebook, Twitter, and Instagram.

*"ACLU said Geofeedia had been marketing its services to police agencies to help track activists using location data and social media posts."*

According to the story, Facebook and Twitter have both stopped providing Geofeedia access to their data.



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## Product News

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

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## Citrix Adds Routing To NetScaler SD-WAN Appliances

Citrix has upgraded its SD-WAN appliances to incorporate traditional routing functions, which means the branch appliances can connect with one another via the overlay, or to router-only branches using protocols such as BGP and OSPF. The goal is to provide more flexibility for companies as they roll out SD-WAN to remote sites.

[LINK](#)

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## Pica8 NOS Supports OpenFlow 1.5

Pica8, which makes a network operating system for white box switches, has upgraded its software to support OpenFlow 1.5. The latest version of OpenFlow includes new features such as Egress Tables, which lets a switch process packets based on output ports.

[LINK](#)

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## Recent Articles

The last five articles published on Packet Pushers

### PacketPushers.net - The Last Five

[Datanauts 055: All About Scaling Out](#)

[Network Break 107: Cisco Flexes HyperFlex Sales; Juniper Targets Network Security](#)

[Show 309: cPacket & The Next Generation Of Performance Monitoring \(Sponsored\)](#)

[PQ Show 94: The State Of Open Compute Networking](#)

[Datanauts 054: Containers Won't Fix Your Broken Culture](#)

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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 video combines animation and documentary film-making to tell the real-life story of Adolfo Kaminsky, who, as a young man in Nazi-occupied Paris, forged identity documents to help people escape France.

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# Link Propagation Newsletter

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

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## Quick Survey: Tea Time

On average, how many cups of caffeine do you drink per day, whether coffee, tea, or other beverages?

- [A. None for me, thanks](#)
- [B. One to two](#)
- [C. Three to four](#)
- [D. Five to six](#)
- [E. Essentially a day-long IV drip](#)

## 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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