

Talking Tech with Cisco



You've Heard of DevOps but How About 'NetDevOps'?

Posted by [Gary Pfitzer](#) in [Talking Tech with Cisco](#) on Mar 20, 2018 6:16:33 PM

You know what DevOps is ... the bringing together of the software development and software operations functions within an organization to speed time to market, improve deployment frequency, lower the failure rate of new releases, and shorten the time between fixes. DevOps relies heavily on automation and monitoring to improve the entire delivery pipeline—focusing on organizational change to promote highly effective collaboration between teams.

While automation and software have become increasingly driving forces in the efficiency of networks, networks have been somewhat slow to embrace the full potential. However, Cisco has realized that the ability of network engineers to adopt automation and to work successfully with software developers toward network improvement is crucial. Out of this need, the concept of "NetDevOps" has been born. With NetDevOps, DevOps has come to networking.

A Logical Outgrowth of Cisco DevNet

Of course, we already have [Cisco DevNet](#), the highly active community of folks using Cisco APIs to write software. DevNet aims to create an ecosystem of networkers, infrastructure engineers, software developers, and application developers using APIs in their everyday work and picking up skills along the way.

NetDevOps builds on all of this. Recently, Cisco's TechWiseTV program invited Hank Preston, Cisco's DevNet evangelist, to the show to talk about NetDevOps. You can catch the whole program here:

DevOps Comes to Networking on TechWiseTV



In the program, Hank stresses that NetDevOps builds on the charter of Cisco DevNet and aims to help network engineers break out of their "culture of fear" surrounding network change. "In addition to the APIs that Cisco is putting into our platforms," he says, "we have to help our audience—the network engineers who have worked with Cisco for years—understand how to take advantage of those APIs. And so, as we're putting out documentation on Cisco platforms, we're coupling that with training classes on coding and APIs, and also the enabling material for NetDevOps so we can get a 'culture of change,' so that we move away from the fear."

Hank adds that the goal of NetDevOps is to show people how they can adjust their practices to do continuous development in the network. The same rapid deployment that can exist with DevOps in the web and application spaces can happen in the network too.

Culture of Change in Action

The TechWiseTV program allows Hank some time in the lab to demonstrate the next steps we can take to adopt that culture of change. The most basic message that Hank aims to convey in this lab session is that if we take nothing else from DevOps in terms of how it currently operates in the software space, it's the awareness that we need good development, testing, and production environments for the network. "Most organizations only have a production network, and the first time they push changes out is to production," he states. Lots of room for human error and inefficiency there.

Hank proceeds to provide us with a NetDevOps pipeline demo for a simple example of needing to update some SNMP information. He shows us how to create a development branch within which to make the change, then update and test the configuration locally, and, once confident with the change, push it into the automation pipeline, where a test network is automatically built, then deployed and tested, followed by notification once everything is successfully completed. In the demo, we see tools like Cisco Virtual Internet Routing Lab (VIRL) and Ansible automation software being pulled into the process. The idea is to be 100 percent confident in changes before they ever make it to the production network.

So, take a look at the TechWiseTV video above, and while you're at it, read Hank Preston's blog post "[Embrace NetDevOps, Say Goodbye to a 'Culture of Fear.'](#)" Here Hank makes the important point that just as DevOps has been a culture of change, "where accountability for success is forefront in everyone's mind," so NetDevOps must become much more than simply another word for automation.

See Your Network as Agile, Not Fragile

It begins with getting past the fear that many networkers have about change. The traditional mantra of "if it ain't broke, don't fix it" no longer applies. This mentality, says Hank, reinforces a sense of the network as fragile. It breeds a "distrust that paralyzes network teams from being able to deliver the agility required by digital businesses today."

Adds Hank, "Organizations practicing NetDevOps see network changes as routine and expected. This doesn't mean that network changes are performed without plan and structure. It is actually the opposite. Because network changes are so routine, there is a well-defined and practiced process for designing, testing, and deploying network changes. By making them routine, network changes can be small and simple. And because they happen so regularly, the implementation team is practiced, and the larger organization doesn't see the change as something unusual and of high risk."

In his blog post, Hank goes on to discuss the two major NetDevOps stakeholder groups—network builders and network consumers—and how they interact with each other as part of the process. Want to dig deeper? Hank follows his NetDevOps blog post with a second one: "[NetDevOps Goes Beyond Infrastructure As Code](#)," which explores the "NetDevOps pipeline," the need to rethink network monitoring with NetDevOps, and the ideal skill set of today's NetDevOps engineer. These blog posts do a great job of framing NetDevOps for a new audience, so take some time to visit them.

Further attesting to the fact that this is a topic, we believe, whose time has come, Hank has also kindly put together a NetDevOps webinar for us right here on the Cisco Learning Network during this same month. Titled "[NetDevOps Style Configuration Management for the Network](#)," the webinar is divided into five digestible segments with a demo at the end. Soak it all up while it's fresh!

And, if all of this is getting you excited about the possibilities inherent in network programmability, have a look at our white paper, "[Demystifying SDN for the Network Engineer](#)," which also encourages you to leave the culture of fear behind as you approach network evolution.

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Gary Pfitzer is a content manager at Learning@Cisco, focused on bringing various aspects of today's IT journey to light through business papers, blogging, customer success stories, and other writing.

5939 Views

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Gus Mar 21, 2018 2:17 PM



Hi Gary,

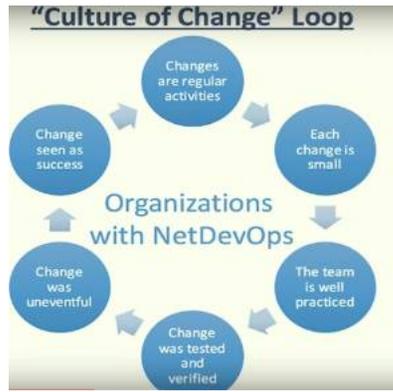
NetDevOps is here as you state perfectly and its part of a Culture of Change in action. Also confirmed during the video you kindly shared with us, regarding the interview and lab demonstration during TechWise with Hank Preston. He did also a very clear demonstration on Continuous Development for NetDevOps.

But what really stood out for me in your blog is that concept of a "Culture of Change" in organizations. That we must all embrace as Network Engineers and Organizations must follow on, so they can maintain there organizations more Agile.

Definitely organizations must have NetDevOps in order to perform better and be prepared for any changes in there infrastructures by becoming more Agile.

I do believe we have to better understand the impact in Organizations with NetDevOps. Your blog proves the importance to adapting an Organization to the various tools exposed by Hank.

The foundation to all of this is, is to have clear the concept of a "Culture of Change" loop:



Gary...Once again, thank you for putting together this blog and sharing it with us. Keep up the great work you do.

Cheers,
Gus

[Actions](#)



[Gary Pfitzer](#) Mar 21, 2018 1:46 PM (in response to Gus)



Thanks for including that "Culture of Change" graphic in your comment, Gus! I was having a little trouble yesterday with the link to Hank's blog, but you reminded me with your graphic to go in and update it. You'll notice that I also added a link to a second NetDevOps blog by Hank (in the next-to-last paragraph of this post), so check that out too if you haven't already found your way to it.

Best,

Gary

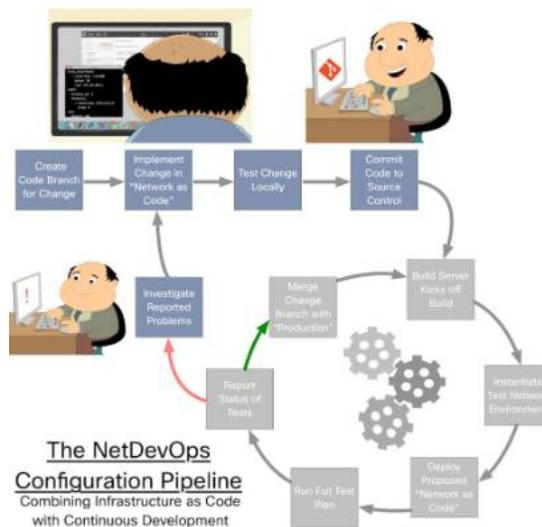
[Actions](#)



[Gus](#) Mar 21, 2018 2:17 PM (in response to Gary Pfitzer)



You're welcome Gary! I found important to highlight the "Culture of Change" graphic as an important part of your blog. Also its good that I could help you out by reminding you to update the link to Hank's blog. I saw that second NetDevOps blog. What I learned most on that blog was about the NetDevOps Configuration Pipeline:



Gary...Thank You for including that second part blog within your blog!
Best Regards,
Gus

[Actions](#)



[Gary Pfitzer](#) Mar 22, 2018 11:36 AM (in response to Gus)

You are welcome, Gus. This blog is the gift that keeps on giving, because I've also added a brand new webinar that Hank Preston did for the Cisco Learning Network on this hot topic of NetDevOps (see second-to-last paragraph).

Best,

Gary

[Actions](#)



[Gus](#) Mar 22, 2018 2:31 PM (in response to Gary Pfitzer)

Wow...Indeed this blog keeps giving gifts and its not even Christmas. I really appreciate the link to the brand new webinar that Hank Preston did for the CLN on this great topic of NetDevOps.

Gary..Thank You!!

Regards,

Gus

[Actions](#)