



Possibilities

#CiscoLive

Building your IT team for the future

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@mandywhaley #DevNet #CiscoCert

DLBPOS-20

CISCO *Live!*

#CiscoLive


CISCO



Agenda

- Infrastructure + Software: IT challenges faced by business today
- Automation and programmability
- Build your team with DevNet and Cisco Certifications
- What's next?



About me

Chemical
Engineer -->
Software
Developer

Connecting
Developer &
Ops teams

DevNet Begins!
Coding 101
for Network
Engineers

DevNet
Developer
Experience

Leading
DevNet &
Technical
Community &
Certifications
team

Global business and technology trends

New challenges for software & infrastructure teams



700M edge-hosted
containers
by 2021

50% of workloads outside
the enterprise data
center by 2021

14.6B IoT devices
by 2022

Reliable

Repeatable

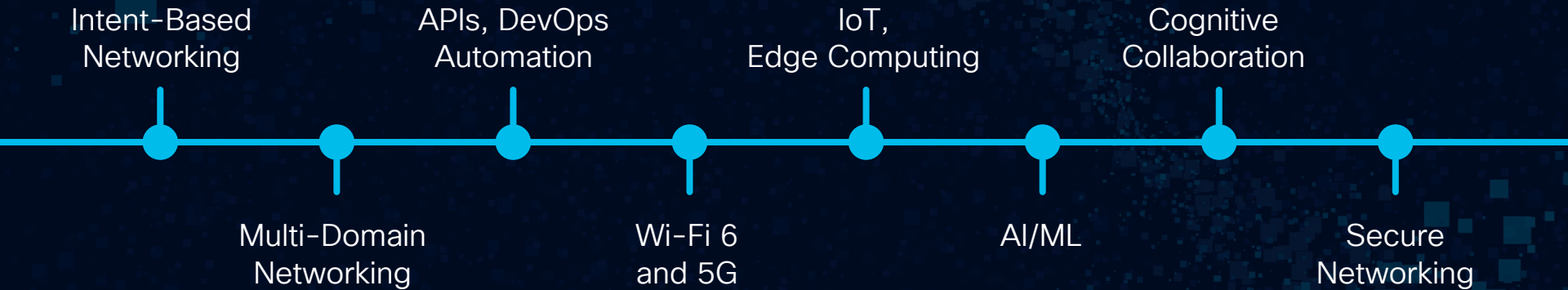
Scalable

Secure



Automation

The capabilities of the New Network



New Job Roles -> New Opportunities

Business Need

- Automation at scale
- Secure CI/CD Pipelines
- Self-serve network operations
- Design, deploy and manage distributed applications
- Multicloud deployments

Job Role

- Network Automation Engineer
- DevSecOps Engineer
- Network Automation Developer
- IoT Architect
- Cloud Automation Engineer

Cisco's certification suite

	Associate Level	Specialist Level	Professional Level	Expert Level
Engineering				
Software				

Future Offering

Cisco's new certification suite

Engineering



Security



Software



Full skill set needed to meet the demands of the New Network

Evolving skills



WWT sees a change in the industry – a need for software skills in an evolving networking world. Cisco DevNet Certifications are a means for network engineers to advance their careers by aligning with the evolution of the software-defined initiatives in the industry.

–Mark Wall
Practice Manager, Global Engineering, WWT

Cisco DevNet Certifications

Building skills for Automation and Digital Transformation

developer.cisco.com/certification



DevNet
Associate



DevNet
Professional



DevNet Specialist
Enterprise
Automation



DevNet Specialist
Data Center
Automation



DevNet Specialist
Service Provider
Automation



DevNet Specialist
Security Automation



DevNet Specialist
Collaboration
Automation



DevNet Specialist
IoT



DevNet Specialist
WebEx



DevNet Specialist
DevOps

Train for new job roles: Network Automation Developer

Professional certification



DevNet
Professional

Technology concentrations



Cisco Specialist: Enterprise Core
Deliver network engineering excellence



Cisco DevNet Specialist:
Enterprise Automation
Automate network operations



Cisco DevNet Specialist: DevOps
Integrate network operations with
DevOps tools and pipelines

Train for new job roles: DevSecOps Engineer

Professional certification



CCNP Security

Technology concentrations



Cisco Specialist: Security
Automate security operations



Cisco DevNet Specialist: DevOps
Securely deploy applications



Cisco DevNet Specialist: Webex
Build chat bots for alerting and monitoring



Automation & programmability



“Improving daily work is even more important than doing daily work.”

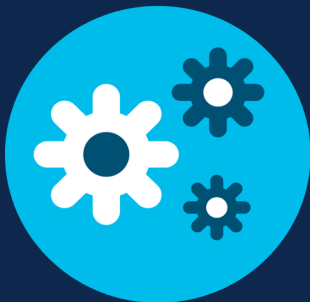
*Gene Kim, The Phoenix Project
A Novel About IT, DevOps, and Helping
Your Business Win*

By 2025, 75% of networking teams will spend **less than a third** of their time maintaining the network status quo and two-thirds **delivering innovation** and creating value for the business.”

- – Joe Clarke, Distinguished Engineer, Cisco

- *2020 Global Networking Trends Report*

Accelerating business with infrastructure



Automation
at Scale



Gain Insights &
Intelligence



Drive Business
Outcomes

Presidio



“

Automation brings us better consistency and standardized configurations for customer engagements. And, with consistency comes better reliability and as a whole, the solution is much better in the end state. The new partner specialization tells us we made the right bet.

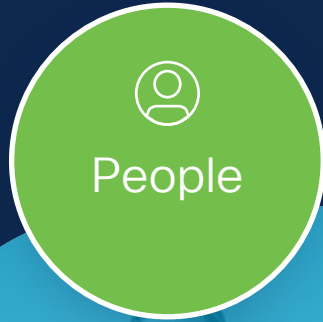
—Brad Haas
Engineering Director, DevOps, Presidio

”



Build your team
with DevNet and Cisco
Certifications

Build your team



People



Connect ● Embed ● Shared Goals ● Find the ticket walls



Jeremy Schulman @nwkautomaniac · Sep 19, 2019 ▾

I am a software engineer embedded in a network engineering team. When we work together in real time, even if the network engineer is not coding, we are "pair programming". Let that sink in.

6

5

50



Make connections durable ● Find people who want to be the bridge

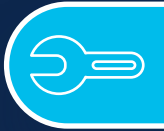


2

Projects

- Where do we start?
- Design Thinking Session
 - What are the biggest challenges your IT team is facing?
 - MTTR
 - unexpected outages
 - supportability
 - repetitive tasks
 - deploying new branches





2

Three levels of automation



Walk

Get visibility and insights into your network



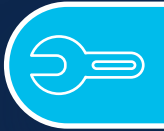
Run

Activate network and security policies across your network



Fly

Proactively manage and optimize with DevOps workflow



2

Pick your project

- What is high value to the team?
- Find the "Walk" use cases for your organization
- DevNet Automation Exchange

A tablet screen showing a list of project ideas with progress bars and annotations:

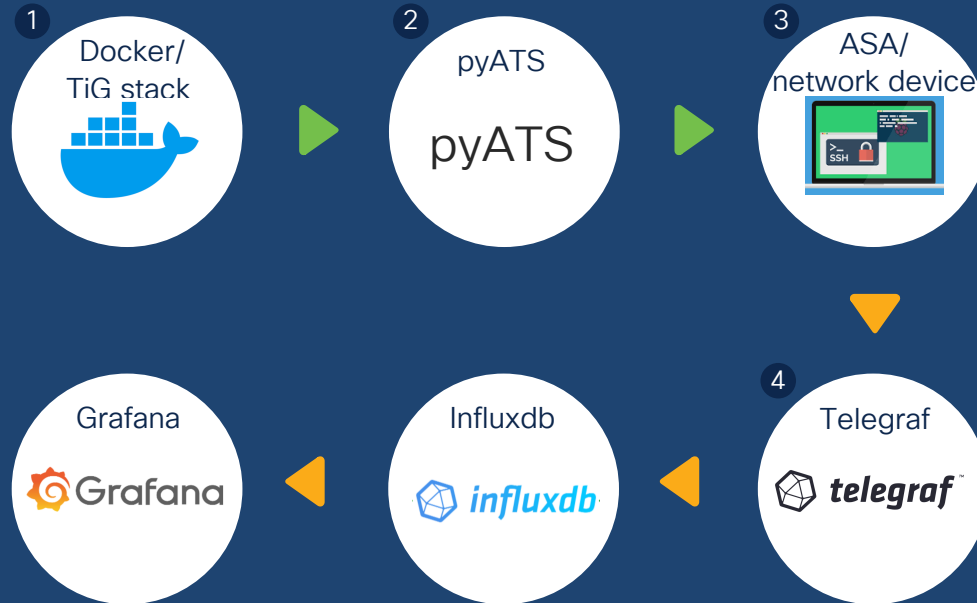
- Managing ACLs on firewalls **||**
- We have too many different software versions in use ~~**||||**~~ **This is a great project, but advanced**
- Making a change across 100 devices is slow **||**
- Testing after a maintenance takes much longer than the maintenance itself ~~**||||**~~ **Read Only**
- We need to audit and enforce compliance against a baseline "gold" config **||||** **Audit is RO**



2

Walk: Monitor VPN Health

Use case: Monitor VPN health through a dashboard that helps you spot peaks, usage trends, and potential issues



Customer value:

As VPNs play an increasing role in critical business operations, visibility into potential issues before they arise can help ensure business continuity.

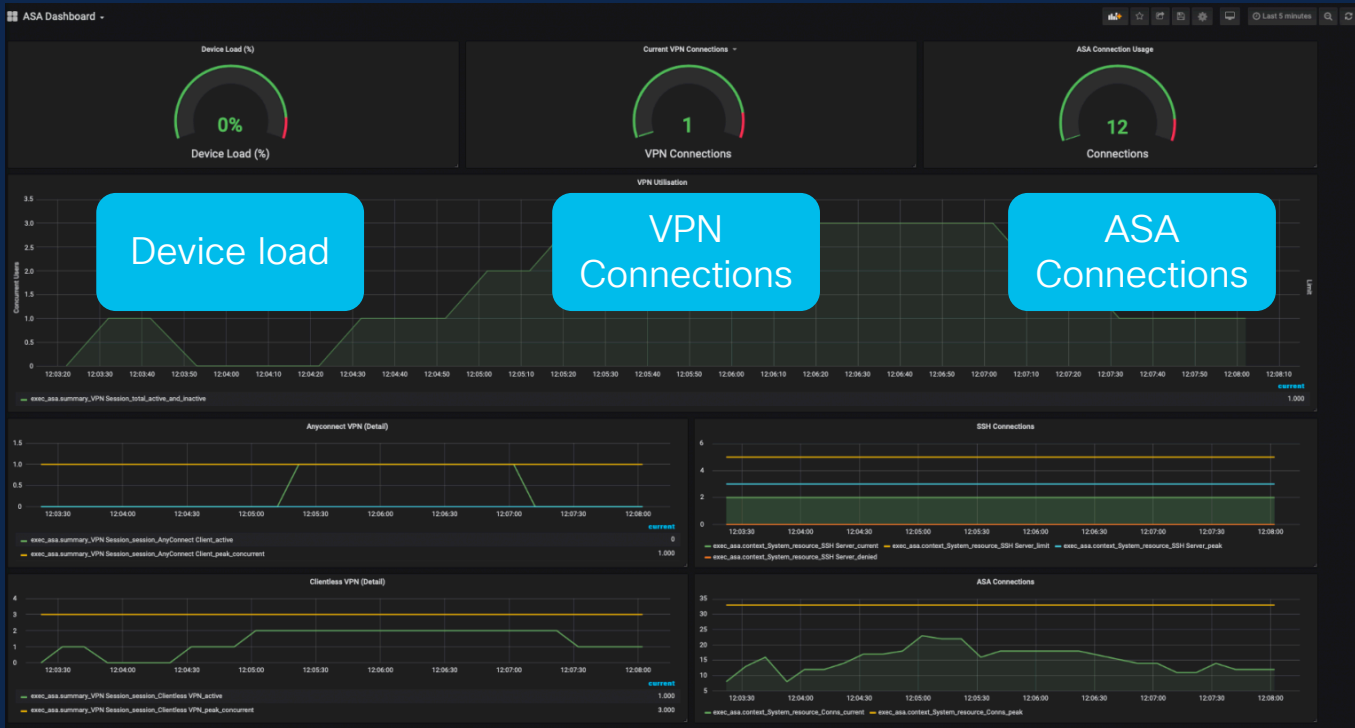
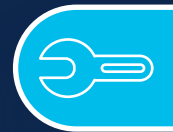
Automation Exchange

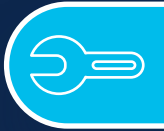
<https://developer.cisco.com/network-automation/detail/4140550190851972/>

Sandbox

http://cs.co/cml_sbx

Giving Business Leaders Access to Real-Time Data with Dashboards





2

DevNet Automation Exchange

Solving Real Use Cases



Telemetry and insights

Gather telemetry across the different domains



Automation at scale

Automating network configuration, hybrid cloud deployments, common and repeated tasks



Multi-domain networking

How to treat applications consistently across the different domains



Self-serve network operations

Beyond compute services to network implementation



Monitoring

Holistic approach for monitoring Cisco infrastructure & extending to broader infrastructure

Learn more at
[developer.cisco.com/
network-automation](https://developer.cisco.com/network-automation)



The best strategies for scaling DevOps in organizations focus on structural solutions that build community.

– 2019 Accelerate State of DevOps Report, DORA





Community

- Communities of Practice
- Study Groups
- DevNet & CLN Communities



“

For WWT, study groups help create a community of like-minded engineers and developers collaborate, learn and grow together.

-Mark Wall
Practice Manager, Global Engineering
WWT

”



New offer: Guided study groups



- ✓ 12-week, expert-led study group to prepare students step by step for the CCNA exam
- ✓ Access to Implementing and Administering Cisco Solutions (CCNA) e-learning
- ✓ Access to Cisco Exam Review: CCNA
- ✓ 1 certification exam voucher



- ✓ 8-week, expert-led study group to prepare students step-by-step for the DevNet Associate certification exam
- ✓ 3 months access to DevNet Associate Fundamentals course and Developing Applications and Automating Workflows using Cisco Core Platforms (DEVASC)
- ✓ 3 months access to Cisco Exam Review: DevNet Associate
- ✓ 1 certification exam voucher



Access to always on learning

3 key ingredients



Easy access to labs

- Explore
- Experiment
- Build



Sample code

- Getting started
- How-to articles
- Bite-sized



Digital learning

- Curated pathways
- Skill building
- Practice labs



4

New sandboxes let you learn new technologies



Design, Build, Test ...Repeat with Cisco Modeling Labs



4



4

New! Developer Centers

- 1 Control Center
- 2 Kubeflow Starter Pack
- 3 Broadworks
- 4 Intro to ACI Programmability
- 5 AppDynamics
- 6 Edge Intelligence
- 7 Action Orchestrator
- 8 Cisco Modeling Labs

The screenshot shows the Cisco DevNet website. The main heading is "Introduction to Cisco ACI Programmability". The page is structured as follows:

- Prerequisites** (indicated by a red exclamation mark icon)
- APIC REST API Using Postman** (indicated by a blue icon)
- Table of Contents:**
 - Step 1: Authenticating Against ACI (highlighted)
 - Step 2: Querying Tenant Information
 - Step 3: Create a Tenant
 - Step 4: Verifying Tenant Creation
- ACI Toolkit** (indicated by a blue icon)
- Understanding ACI** (indicated by a blue icon)

Step 1: Authenticating Against ACI

ACI was built with programmability in mind and designed to be configured and maintained through a central controller via a REST API. This API is how admins interact with the object-model allowing them to create, make changes, gather stats, and troubleshoot the ACI fabric.

The REST API uses HTTP and supports all four CRUD methods:

- (C)reate new objects
- (R)ead objects to view configuration and statistical data
- (U)pdate existing objects
- (D)elete objects that are no longer needed

POSTMAN can be used to perform Create, Read, Update and Delete methods using the various managed objects and classes contained within ACI

Before any interaction can occur via the API, an authentication cookie must be obtained. This cookie will allow us to access the API for subsequent calls.

For these exercises, it is sufficient to know that login and configuration changes use HTTP POST and reading data uses HTTP GET.

To use POSTMAN to log in to the APIC

1. Set the method to POST
2. Enter the URL as `https://sandboxapicdc.cisco.com/api/aaaLogin.json`
3. Enter the JSON below into the Body as `raw`
4. Click SEND

```
{
  "aaaUser": {
    "attributes": {
      "name": "admin",
      "pwd": "ciscopsdt"
    }
  }
}
```

Chat with Us!

Digital Learning



Guided study groups

Expert-led study groups, access to e-learning, Cisco exam review and a certification voucher for CCNA and DevNet Associate.

Online classes

Engaging and interactive e-learning courses focused on a variety of Cisco technologies to prepare you for Cisco certification exams.

Online certification test

Secure, remote testing featuring live proctoring augmented with artificial intelligence and machine learning.



What's next?

New DevNet Specialization

Business specialization to recognize partners with demonstrated software capabilities and business practices



Miradot



Being a DevNet Specialized Partner can prove we have the right automation-focused skills and processes in place to build a foundation for gaining new customers' trust. By getting this designation, we are also able to attract talent in a world where talent is sought-after.

—Marcus Lind
Chief Executive Officer, Miradot

Start Now



Sign up
for a digital class



Take an
exam online



Get hands-on
in the Sandbox



Register for
DevNet Day

Get 50% off #CiscoCert exams
at www.cisco.com/go/certpromo



Thank you

@mandywhaley
#DevNet #CiscoCert

CISCO *Live!*

#CiscoLive





Possibilities

#CiscoLive