

Programmability Webinar Series with DevNet

Session 1: Networking with Programmability *is Easy*

Kirsten Kuehl & Wadih Zaatar

Hostess: Kara Sullivan

Jointly presented by DevNet & NetAcad

October 17, 2018 : reserved. Cisco Confidential

Welcome to the 1st session of the Programmability with Cisco DevNet webinar series

- Use the Q and A panel to ask questions.
- Use the Chat panel to communicate with attendees and panelists.
- A link to a recording of the session will be sent to all registered attendees.
- Please take the feedback survey at the end of the webinar.

Programmability with Cisco DevNet Series

- 1 Networking with Programmability is Easy!
- 2 Role of a Network Engineer in the Programmable Age
- 3 Software Defined Networking & Controllers
- 4 Adding API Skills to Your Networking Toolbox
- 5 The New Programmable Toolbox of a Network Engineer
- 6 Program Networking Devices using their APIs
- 7 Before, During, and After a Security Attack
- 8 Play with Linux and Python on the Networking Devices
- 9 Automate Your Network with a Bot

Thank You


for taking the time to be with us today!



Agenda

- 
- 1 The Webinar Series
 - 2 Why Partnering with DevNet?
 - 3 DevNet Introduction & Use Cases
 - 4 Co-Authored Content
 - 5 Q&A

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The Webinar Series

Date Topic

- ▶ Oct'18 Networking with Programmability is Easy
- Oct'18 A Network Engineer in the Programmable Age
- Nov'18 Software Defined Networking and Controllers
- Jan'19 Adding API Skills to Your Networking Toolbox
- Feb'19 The New Toolbox of a Networking Engineer
- Mar'19 Program Networking Devices using their APIs
- Apr'19 Before, During, and After a Security Attack
- May'19 Play with Linux & Python on Networking Devices
- Jun'19 Automate your Network with a Bot



More info: <https://www.netacad.com/content/devnetacad-reloaded-webinar-series>

The Webinar Series – Raffle & Certificates

Raffle

- ✓ We will be raffling off a total of 15 Amazon gift cards in the amount of \$25 US dollars at the end of this series.*
- ✓ 10 Amazon gift cards in the amount of \$25 US dollars raffled off to everyone who participates in all of the live sessions
- ✓ 5 Amazon gift cards in the amount of \$25 US dollars raffled off to everyone who participates in all of the sessions by either attending the live sessions or viewing/downloading the recording (can be a combination of the two in this raffle).

* Please note that this is a raffle and not everyone who qualifies will receive a gift card. There will be a total of 15 winners.




Certificate of Participation

- ✓ There will be an opportunity to sign up for a Certificate of Participation at the end of this series.
- ✓ To qualify, you must have participated in all sessions of the series.
- ✓ You can do this by attending the live sessions, viewing the recordings, or a combination of the two.
- ✓ Certificates will not be given out for individual sessions, but for the series as a whole.



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Sears *Zellers*

TOYS *Я* US



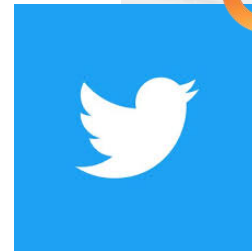
Disrupte



Sheraton



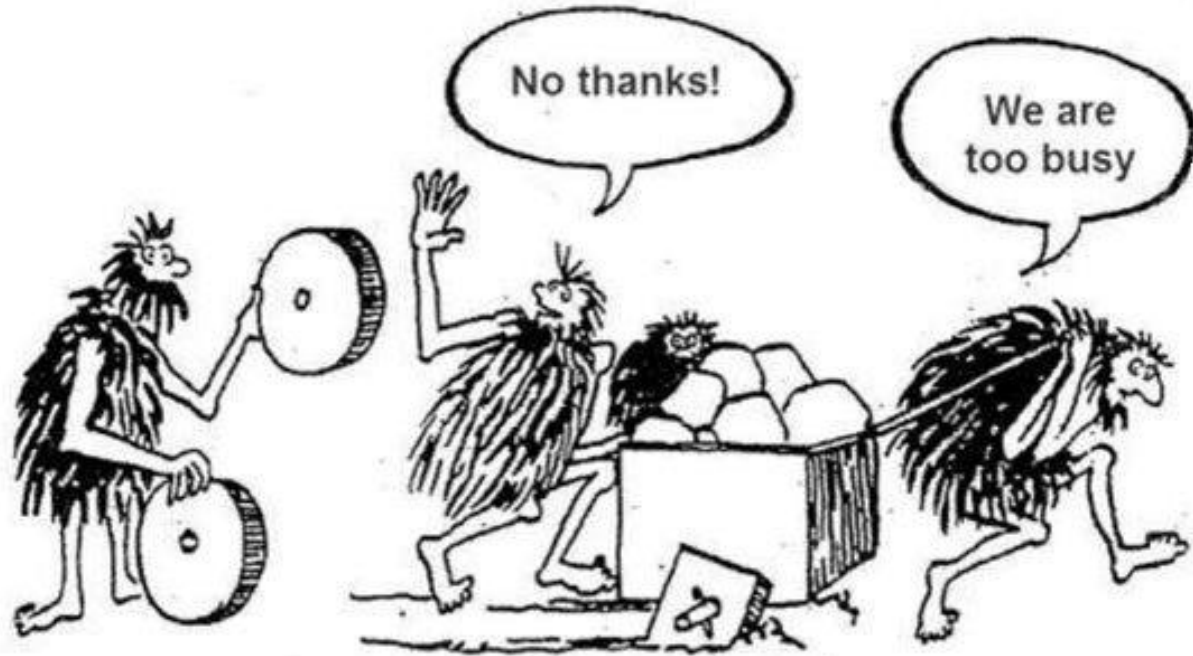
INTERCONTINENTAL
HOTELS & RESORTS



Sheraton

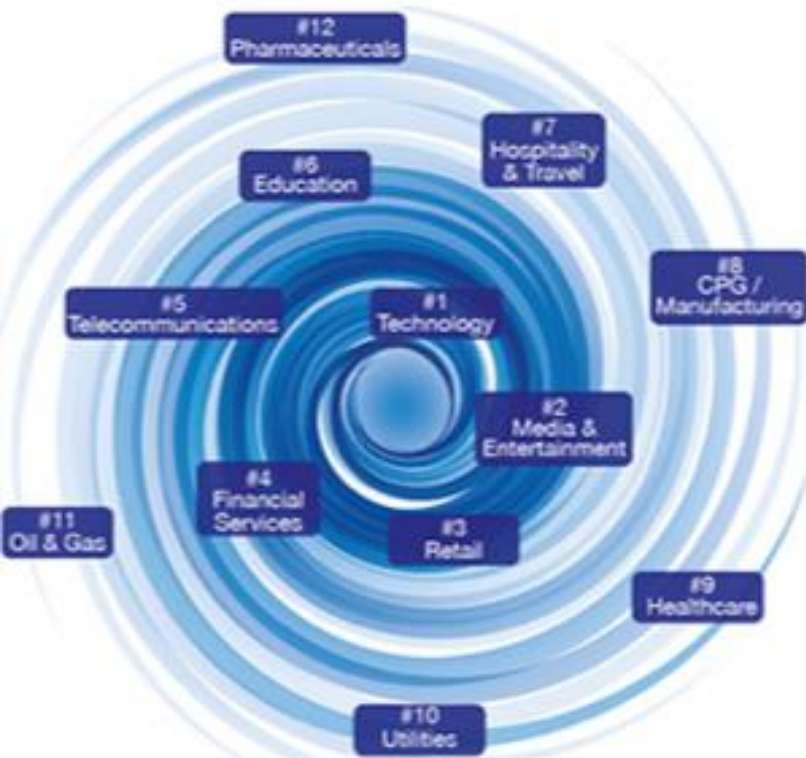
INTERCONTINENTAL
HOTELS & RESORTS

Businesses & Adaptability



The Digital Disruption... 2 years later!

2015



2017



Even Cisco had to undergo a successful transformation!

Bloomberg

Cisco Gives Bullish Outlook Helped by New Products, Software

NETWORKWORLD

Cisco software, subscription strategies pay off

Cisco's fiscal year 2018 results say deferred product revenue related to recurring software and subscription offers increased 23 percent over 2017.

MarketWatch

Opinion: Cisco revenue is growing again, and headed for more
New accounting standard expected to add slight boost to gains from recurring-revenue model, and 5G is coming soon

THE WALL STREET JOURNAL.

TECH

Cisco Extends Growth Streak on Strong Software Sales

Third-consecutive quarter of revenue growth comes after two years of declines

The Register

Cisco shift to recurring revenue gives 3.8 billion signs that it's working
Customer interest in hybrid cloud buoys networking biz

The Motley Fool

Cisco Shows It Can Still Grow

The mature tech company is once again producing robust revenue growth.

THE WALL STREET JOURNAL.

MARKETS | HEARD ON THE STREET

Cisco Is Getting Its Groove Back

Networking giant shows strength in both old and new businesses lines

Seeking Alpha ^α

Cisco Q4 2018 And Beyond: Optimism

At The Core of Cisco's Strategy



CLOUD



NETWORKING



DATA CENTER




SECURITY



COLLABORATION

Programmability

Agenda

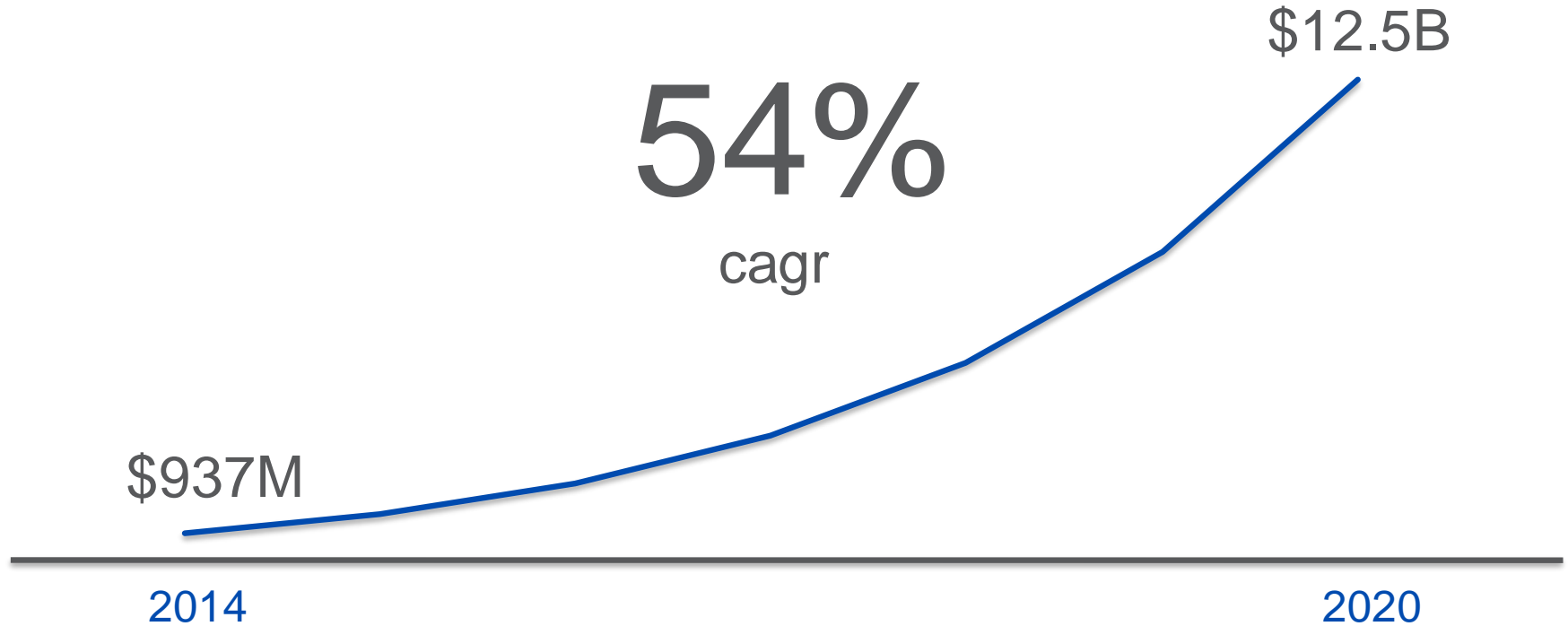
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What is DevNet? Cisco's Developer Community and Platform for Innovation

Why DevNet? Catalyzes Innovation on Programmable Networks



Growth in Programmable Networks



We know what Apple and Google developers do...



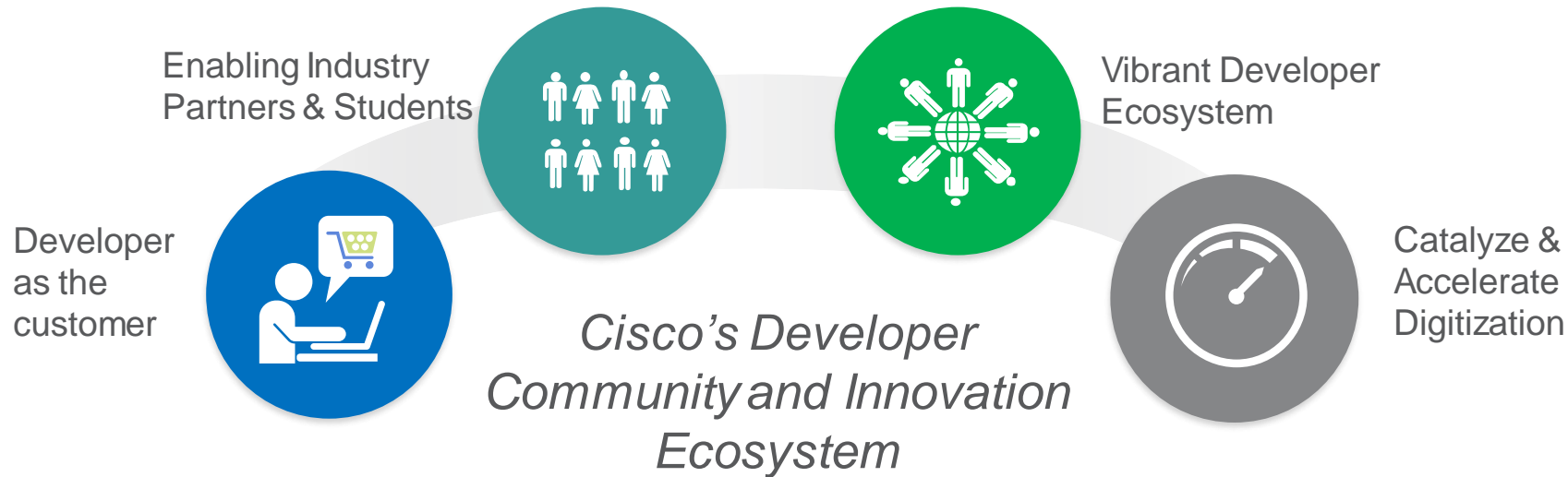
Ecosystem generated great value and business success

What do Cisco developers do?



Innovation with network programmability across the industry

DevNet Building an Industry Ecosystem



Cisco's portfolio as a Platform for Innovation



IoT



Cloud



Networking



Data Center



Security



Analytics & Automation



Open Source



Collaboration



Mobility

“Most Significant Roles” Span IT Functions

No matter your current role, or your interest, these “most significant” IT roles can be part of your career in IT.



Data Management/ Analytics

- BI Analyst
- BI Architect/Developer
- Data Engineer
- Data Scientist
- Database Architect



Cyber Security

- Cyber/Information Security Engineer
- Security Specialist



IT Infrastructure

- Network Engineer/Architect
- Network/Systems Admin
- Systems Analyst
- Social Media Manager/Admin
- Computer Support Specialist



Software/ Applications Development

- Machine Learning Designer/Developer/Engineer
- Mobile App Developer
- SW Developer/Engineer
- UI/UX Designer/Developer
- Web Developer



Digital Transformation

- Change Management
- IoT Designer/ Engineer
- Transformation Consultant

Bringing Together Applications and Networking Infrastructure

WHY INFRASTRUCTURE DEVS CARE ABOUT NETWORK APIs



Automation



Observability & Insights



Security



DevOps & NetDevOps

Modern Applications

Network APIs & NetDevOps

Programmable Network

WHY APPLICATION DEVS CARE ABOUT NETWORK APIs

Cloud & Multicloud



Digitized Infrastructure



Application Performance



Security



Explore DevNet Resources

All the development tools, in one place,
ready to use <https://developer.cisco.com/>



Learning Tracks



Video course



Sandbox



Code Exchange



Ecosystem Exchange

DevNet Self-Paced Learning Labs & Video Courses

Self-paced, step-by-step tutorials on a wide-range of application development and infrastructure development topics!

The screenshot displays the DevNet Learning Labs interface. At the top, there's a navigation bar with 'Home', 'Learning Labs', 'Help', and 'Feedback'. A 'Welcome Brian Dougherty' message is visible in the top right. The main heading is 'DevNet Learning Labs', followed by a descriptive paragraph and a 'Get Started' button. Below this, a row of seven colored cards represents different technology areas: SDN, Mobility, Coding, Collaboration, IoT, SDN, and Mobility. Each card has a brief description and a 'Get Started' link.

Below the cards, three larger cards are shown, each with a title, description, and a table of metrics:

- Network Programmability for Application Developers**: Learn about network programmability from the perspective of an Application Developer. Contains information about basic networking concepts in addition to interfaces like RESTCONF.
 - 2 Modules
 - 10 Labs
 - 4 Hours
- Cloud Collaboration**: Learn to build engaging User Experiences with Cisco's Cloud Collaboration platform. These learning labs will take you from zero to creating applications that automate Cisco Cloud Collaboration integrations across the board of other systems. If you prefer...
- Cloud Native Applications**: Cloud Native applications are built to run on Cloud platforms, typically using a microservices architecture. You will be introduced to Cisco Shippad: a full container cloud native dev/test lifecycle platform. You will also be introduced to Mantl, an open source and extensible installer package of popular Cloud Native tools for cluster management, scheduling, and container deployment.
 - 2 Modules
 - 10 Labs
 - 4 Hours
- Data Center Programmability**: Use this learning track to create and link network elements in ACL. You will learn the different APIC interfaces, create API requests, write simple Python scripts, and work with the Cobra SDK, Argo development tool, and ACL toolkit.
 - 2 Modules
 - 6 Labs
 - 4 Hours



DevNet

served. Cisco Confidential

DevNet Sandboxes: Remote Labs to Test Code

The image shows a screenshot of the DevNet Sandbox website. At the top left is the Cisco DevNet logo. The top right navigation bar includes links for "Log In", "Register", "Subscribe", and a search icon. Below the navigation bar, the word "Sandbox" is displayed on the left, and "Sandbox Catalog", "Docs", and "Support" are on the right. The main content area has a dark blue background with the heading "Looking for a development lab?" and the subtext "Dig in with DevNet Sandbox - technology packed Cisco labs - today! FREE with 24x7 access!". Two buttons are present: "Learn more" and "Get started with Sandbox". Below this is a section titled "EXPLORE TECHNOLOGIES" with a right-pointing arrow. It features eight circular icons representing different technology areas: Networking, Data Center, Cloud, Security, IoT, Collaboration, Analytics & Automation, and Open Source. To the left of this section is a 3D illustration of a red sandbox filled with yellow sand, with a computer monitor displaying various Cisco product logos (APIC-EM, UCS, WebEx, IOx, ACI, Firepower) as if they are being tested in the sandbox.

DevNet Tools: Code Exchange

The screenshot shows the Cisco Code Exchange website. At the top, there is a navigation bar with the Cisco logo, the text "DEVNET", and links for "SIGN UP FREE" and "LOG IN". Below this is a secondary navigation bar with "Cisco Code Exchange" on the left and "Explore", "Submit", and "About" on the right. The main header area features the text "Discover code repositories related to Cisco technologies" and a sub-header "Discover, learn, build, and collaborate on curated GitHub projects to jumpstart your work with Cisco platforms, products, APIs, and SDKs". Below the header, there are filters for "Sort: Recommended", "Language:", and "Technology:". There are also view toggles for "Tile View" and "Grid View". The main content area displays a grid of six code repository cards. Each card includes the repository name, the author (Cisco), a brief description, and statistics for stars and forks.

Repository Name	Author	Description	Stars	Forks
trex-core	cisco-system-traffic-generator	TREX Low-Cost, High-Speed Stateful Traffic Generator...	292	118
ChezScheme	cisco	Chez Scheme is both a programming language and an implementation...	4049	675
joy	cisco	A package for capturing and analyzing network flow data and intraflow data, for network research, forensics, and security monitoring.	589	159
libsrtp	cisco	Library for SRTP (Secure Realtime Transport Protocol)		
node-jose	cisco	A JavaScript implementation of the JSON Object Signing and Encryption (JOSE) for current web browsers and node.js-based servers. This library implements (wherever p...		
openh264	cisco	OpenH264 is a codec library which supports H.264 encoding and decoding. It is suitable for use in real time applications such as WebRTC. See http://www.openh264.org/ ...		

Cisco DevNet Ecosystem Exchange One-Stop for All Ecosystem Solutions



Cisco DevNet Use Cases



See It



Learn It



Explore It

DevNet Powers a New Type of Ecosystem Solution

APPLICATIONS
MEET
NETWORKS
INDOOR
WAYFINDING

CUSTOMER
EXPERIENCE

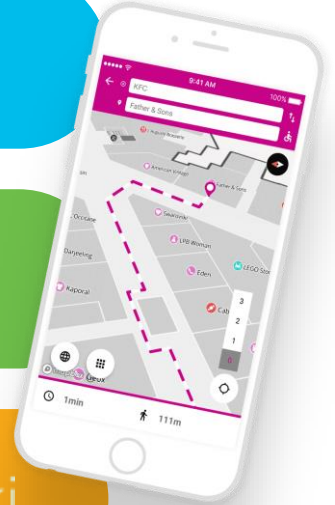
web
summit

APPLICATION

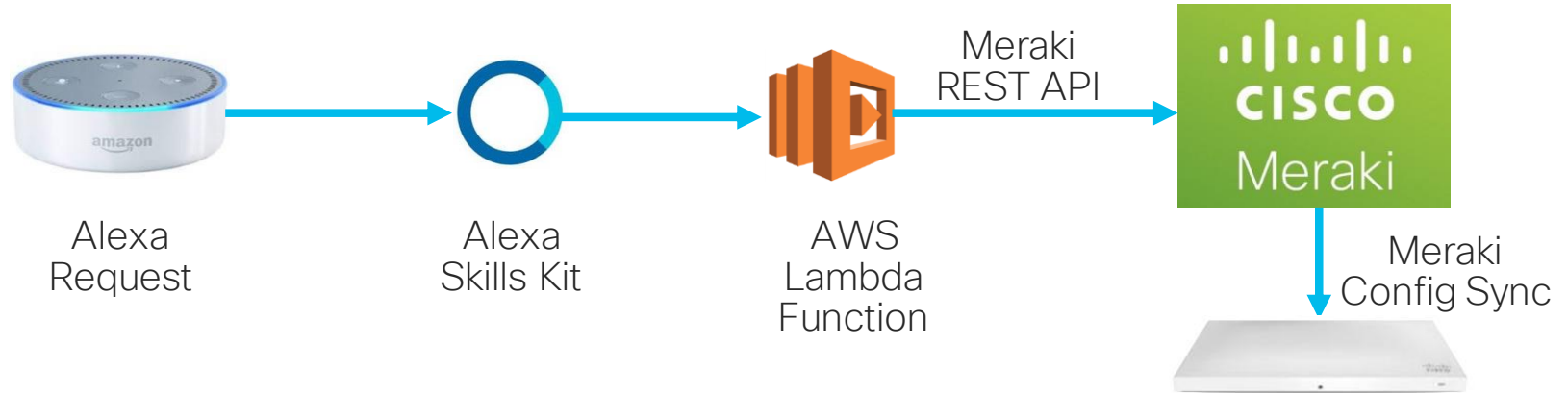
mapwize

INFRASTRUCTURE

cisco Meraki



Meraki Alexa Utilizing REST APIs



Enable and Disable Store WiFi:
https://learninglabs.cisco.com/lab/Meraki_Alexa/step/1

Old City Braga, Portugal – New Smart City Solution



“Thanks to this solution we have enhanced our customer’s experience to a new and higher level while connecting all the corners of the city and projecting a new way of thinking regarding all the IoT projects.” –Rui Martins, TUB Project Manager

Check out more on the DevNet community


1

2

3

Make sure to login with your Cisco NetAcad Login at step 3!

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Networking Academy's Offering

NetAcad and DevNet have co-authored two workshops to help you walk the first few steps in the DevNet world:



Network Programmability



REST APIs using WebEx Teams

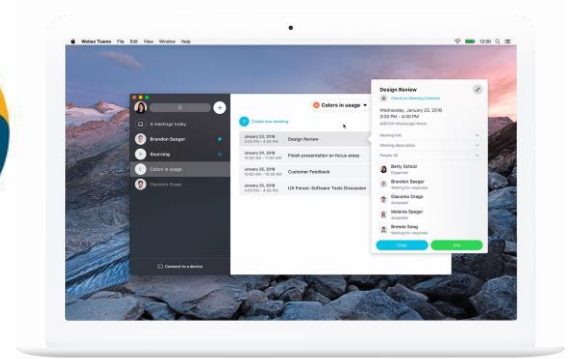
We will be releasing more content in the coming few months.

Workshop: REST APIs using WebEx Teams



Experiment with REST API technology using Webex Teams collaboration platform and learn to extend an application's capabilities using REST API technologies.

- **Type:** Instructor-Led
- **Level of difficulty:** Intermediate
- **Estimated time to complete:** 8 hours
- **Prerequisites:** Basic programming knowledge (Python preferred).



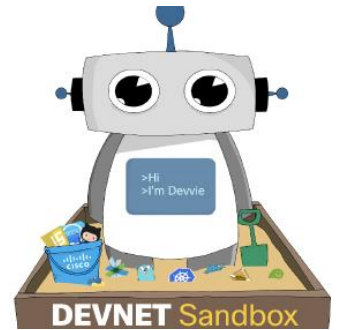
More info: <https://www.netacad.com/courses/programming/workshop-rest-apis-using-webex-teams>

Workshop: Network Programmability



Create applications and automate tasks using a programmable device in this workshop. Hone skills in operating a controller-based network and automating management tasks using Cisco's controllers in the virtual Cisco DevNet Sandbox – just like the professionals!

- **Type:** Instructor-Led
- **Level of difficulty:** Intermediate
- **Estimated time to complete:** 8 hours
- **Prerequisites:** Basic programming knowledge (Python preferred) **and** CCENT (CCNA R&S RSE course) or equivalent networking skills.



More info: <https://www.netacad.com/courses/networking/workshop-network-programmability>

How can I get started?

Contact your Networking Academy Instructor and ask them to run an Emerging Technology Workshop!



Network Programmability

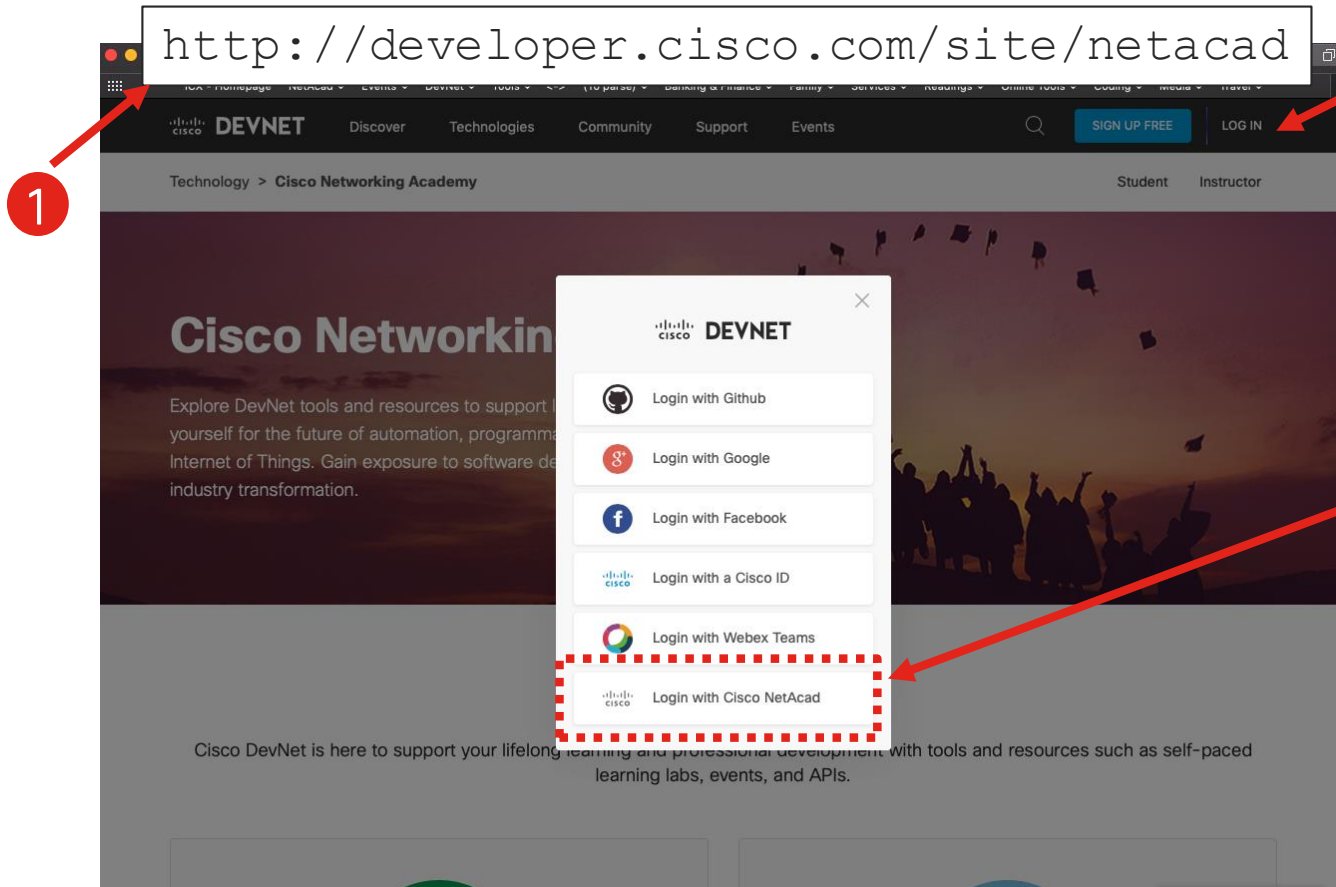
<https://www.netacad.com/courses/networking/workshop-network-programmability>



REST APIs using WebEx Teams

<https://www.netacad.com/courses/programming/workshop-rest-apis-using-webex-teams>

Want to learn more about the DevNet community?



Make sure to login with your Cisco NetAcad Login at step 3!

Questions?



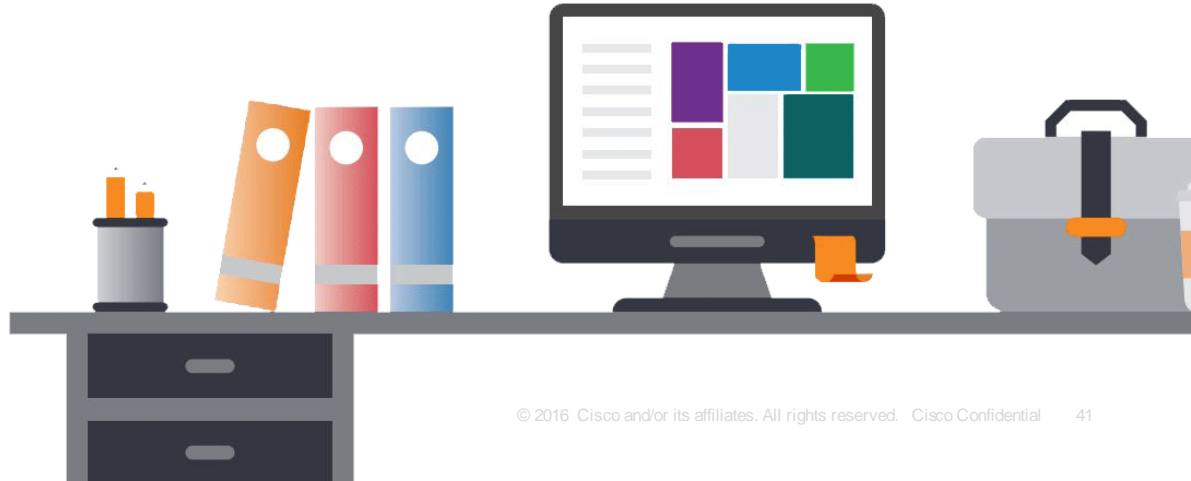
Next Session:

#2 The Role of a Network Engineer in the Programmable Age



- 31 October, 10:00 A.M. Pacific Standard Time

Registration & Details available at: <http://bit.ly/devnet2>



Thank You!



