



i i i i i i i i

You make **possible**



From CLI Hero to API Superhero:

Manage and Automate ACI L2-L7 Infrastructure-as-Code

Haroun Dass, Business Solution Architect
@DassHaroun



Agenda

- Why Automate?
- What Are We Automating?
- How To Do It?
- Key Takeaways

Network “Automation” Today / the Past

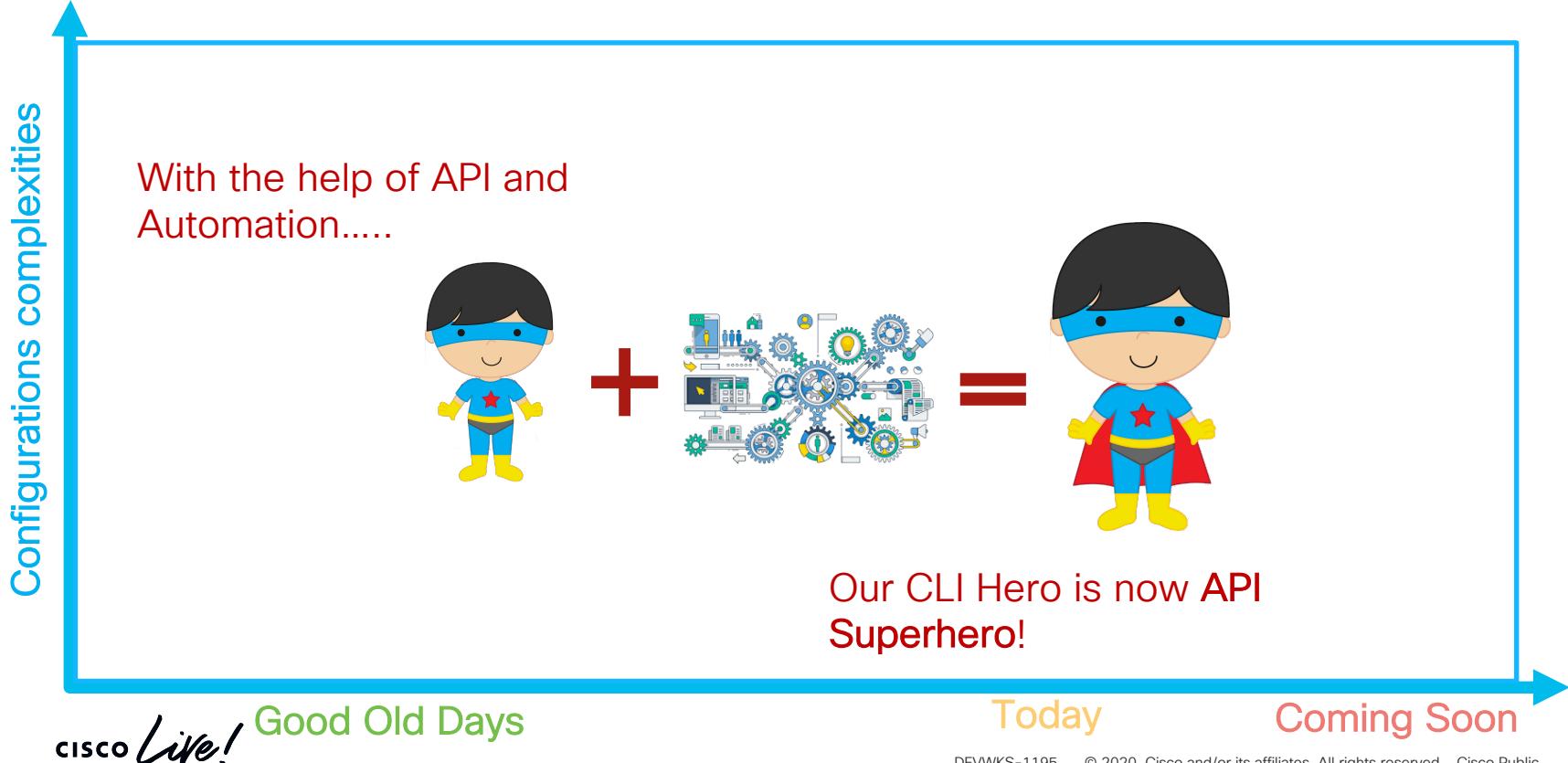
- In a majority of environments:
 - Stage configuration – Notepad, XML/JSON
 - Some Automation by third party tools
 - Expect scripts
- Challenges:
 - Manual, repetitive, error-prone tasks
 - Waste time, typing
 - Network lags behind industry automation capabilities

Pasting large configuration:

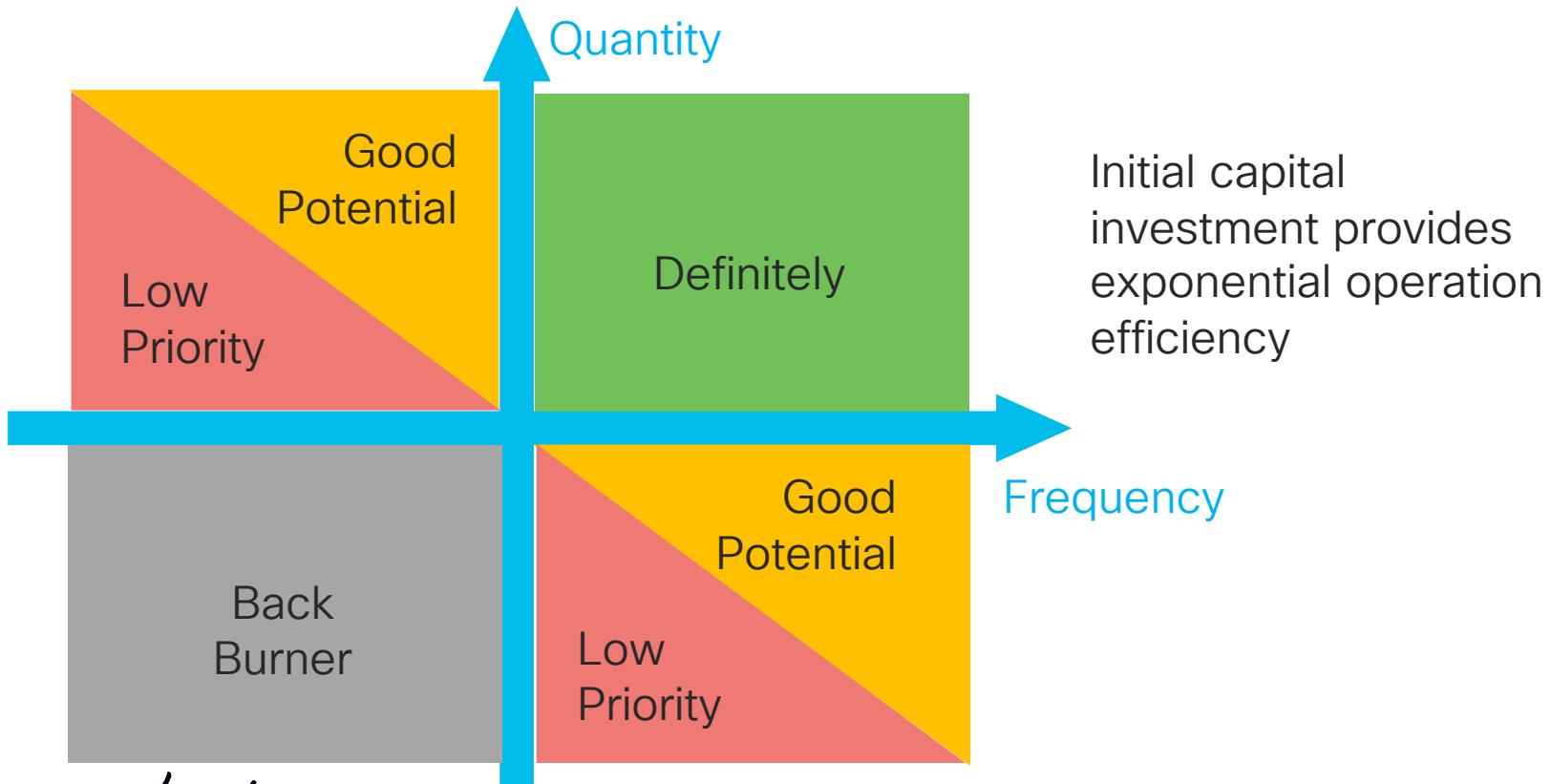
```
% Invalid command at '^' marker.  
RTPDC1N3K1(config-cmap-qos)#    class copp-s-igmp  
RTPDC1N3K1(config-cmap-qos)#      police pps 400  
^  
  
% Invalid command at '^' marker.  
RTPDC1N3K1(config-cmap-qos)#    class copp-s-routingProto2  
RTPDC1N3K1(config-cmap-qos)#      police pps 1300  
^  
  
% Invalid command at '^' marker.  
RTPDC1N3K1(config-cmap-qos)#    class copp-s-v6routingProto2  
RTPDC1N3K1(config-cmap-qos)#      police pps 1300  
^  
  
% Invalid command at '^' marker.  
RTPDC1N3K1(config-cmap-qos)#[
```

Typo? Start from scratch

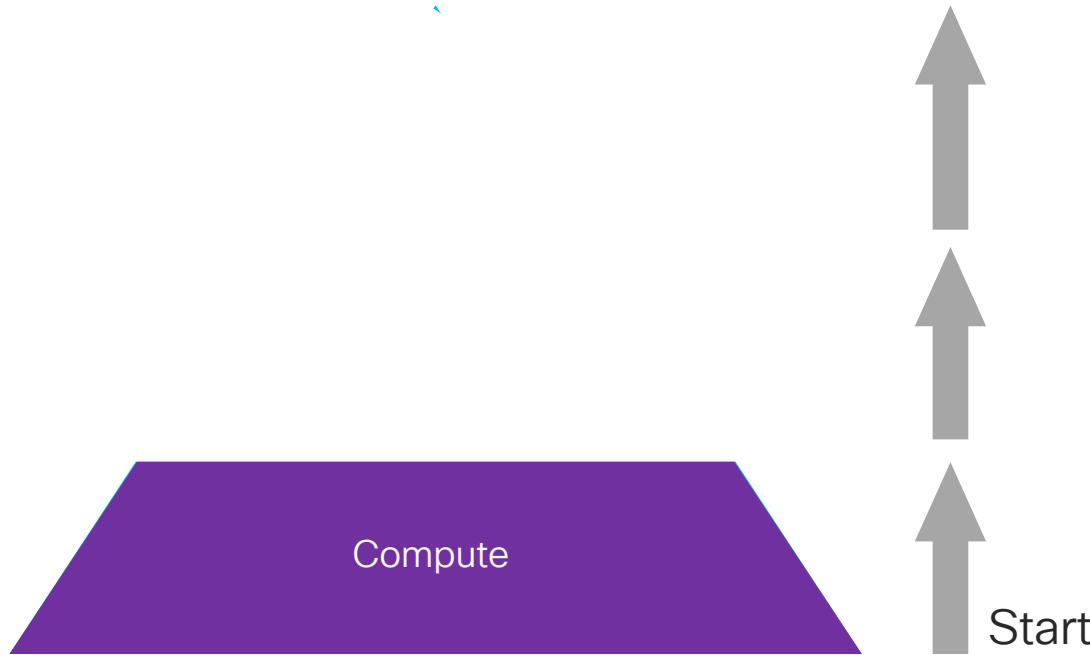
Why Automate?



Automation Magic Quadrant



Automation Journey



What does Software Defined Network Solves?

- Decoupling the control plane and data plane.
 - No need to manage hundred of devices.
- API is natively available.
 - API is no more after thought.
- Foundation of automation.
 - Consistence of API and best practice.
 - Automation provides an agile and consistent operation model.

What are We Automating L2-L7 in this session?



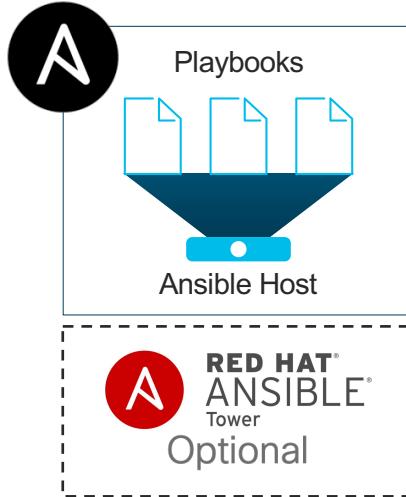
What Is Available?

- API
 - Cisco ACI – REST; SDK such as Cobra, acitoolkit; Ansible
 - NX-OS – REST, NX-API
 - Other vendors – ex. F5 Automation toolchain (declarative API), iControl REST
- Tools
 - Python – your favorite IDE + vendor's SDK, requests module
 - Ansible Network module – ACI, ASA, F5, IOS, NetConf, NXOS, etc.

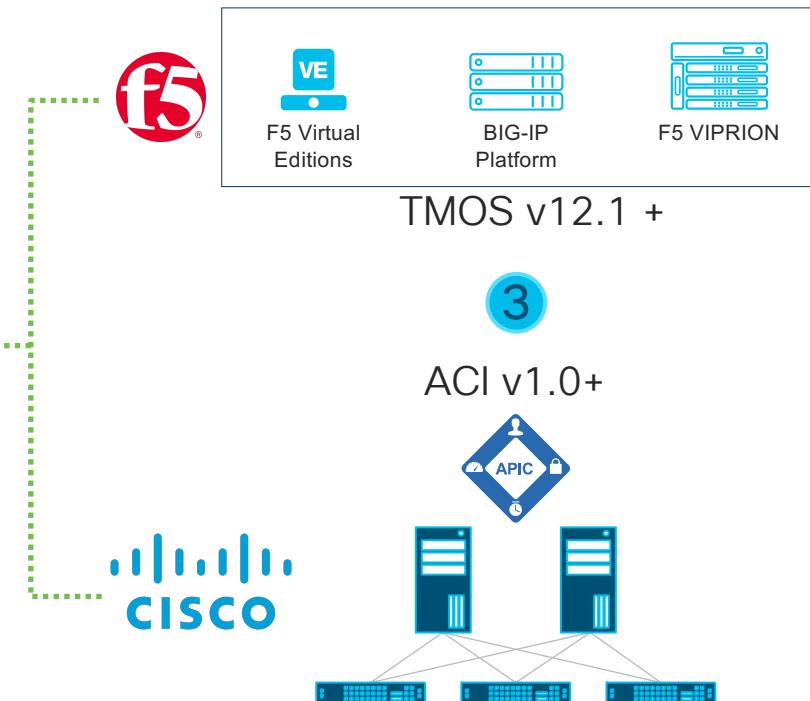
How Can We Do It?

- 1 Ansible Versions 2.4 +
Python 2.7

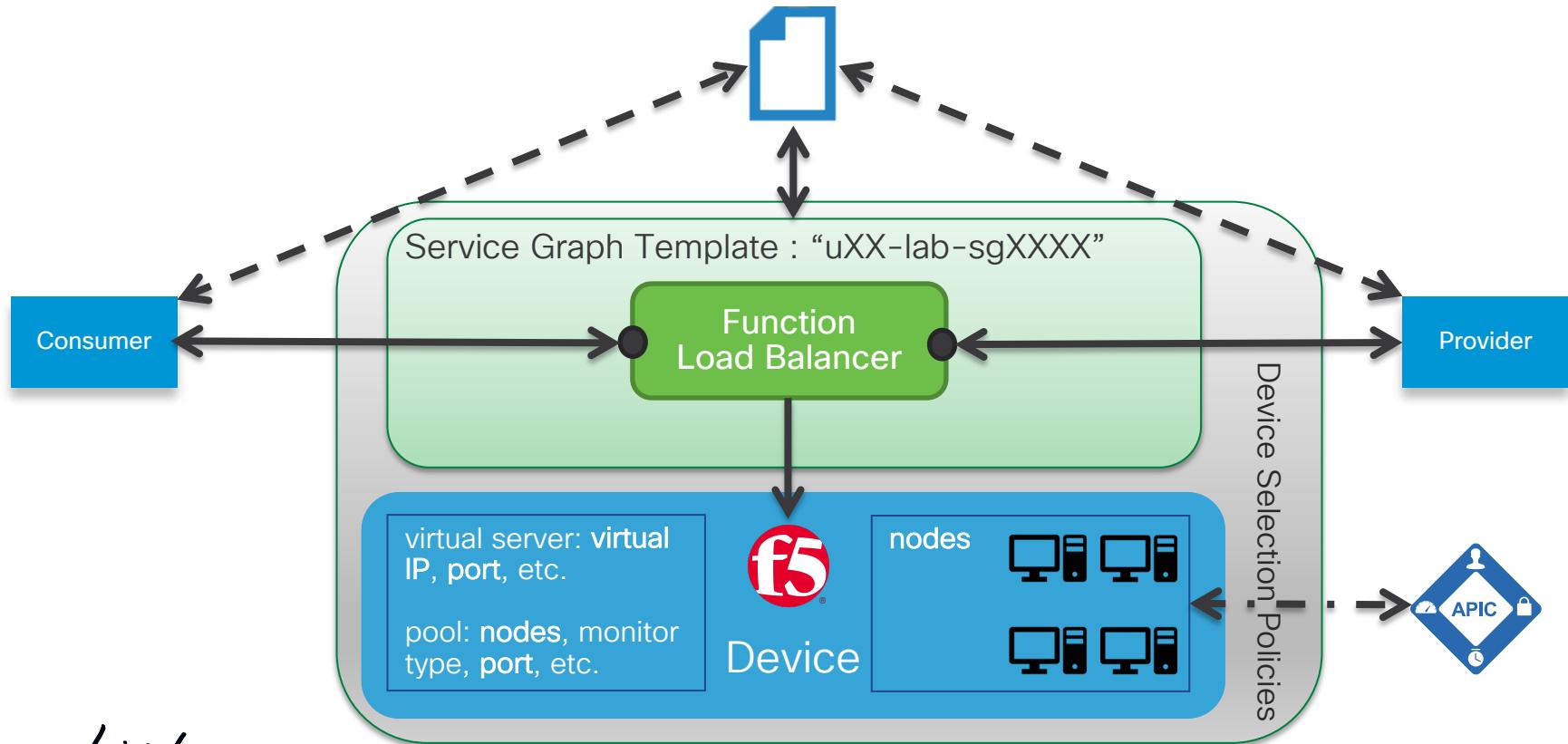
- 2 bigsuds, f5-sdk (pre Ansible 2.8)
aci, lxml, xmljson



REST/SOAP API calls



What Are We Trying to Accomplish in This DevNet Workshop?



BIG-IP® bigip35.lab.test.local APIC (173.36.211.11) Not Secure | https://173.36.211.11/#/bTenants:devwks1195/untn-devwks1195 Incognito (2)

Bock-Bock User:J... Cisco Product Do... CARE/DDTS Quer... Casekwy CDETS Topic Search DCP Webex Other Bookmarks

APIC (Site 2)

System Tenants Fabric Virtual Networking L4-L7 Services Admin Operations Apps Integrations

ALL TENANTS | Add Tenant | Tenant Search: name or descr | common | devwks1195 | mgmt | msm-u02-lab-1417 | u01-lab4-i3

devwks1195

> Quick Start

devwks1195

> Application Profiles

> Networking

> Contracts

> Policies

> Services

Tenant - devwks1195

Summary Dashboard Policy Operational EPG Communication Stats Health Faults History

Application EPGs: 2 Total

Bridge Domains: 2 Total

VRFs: 1 Total

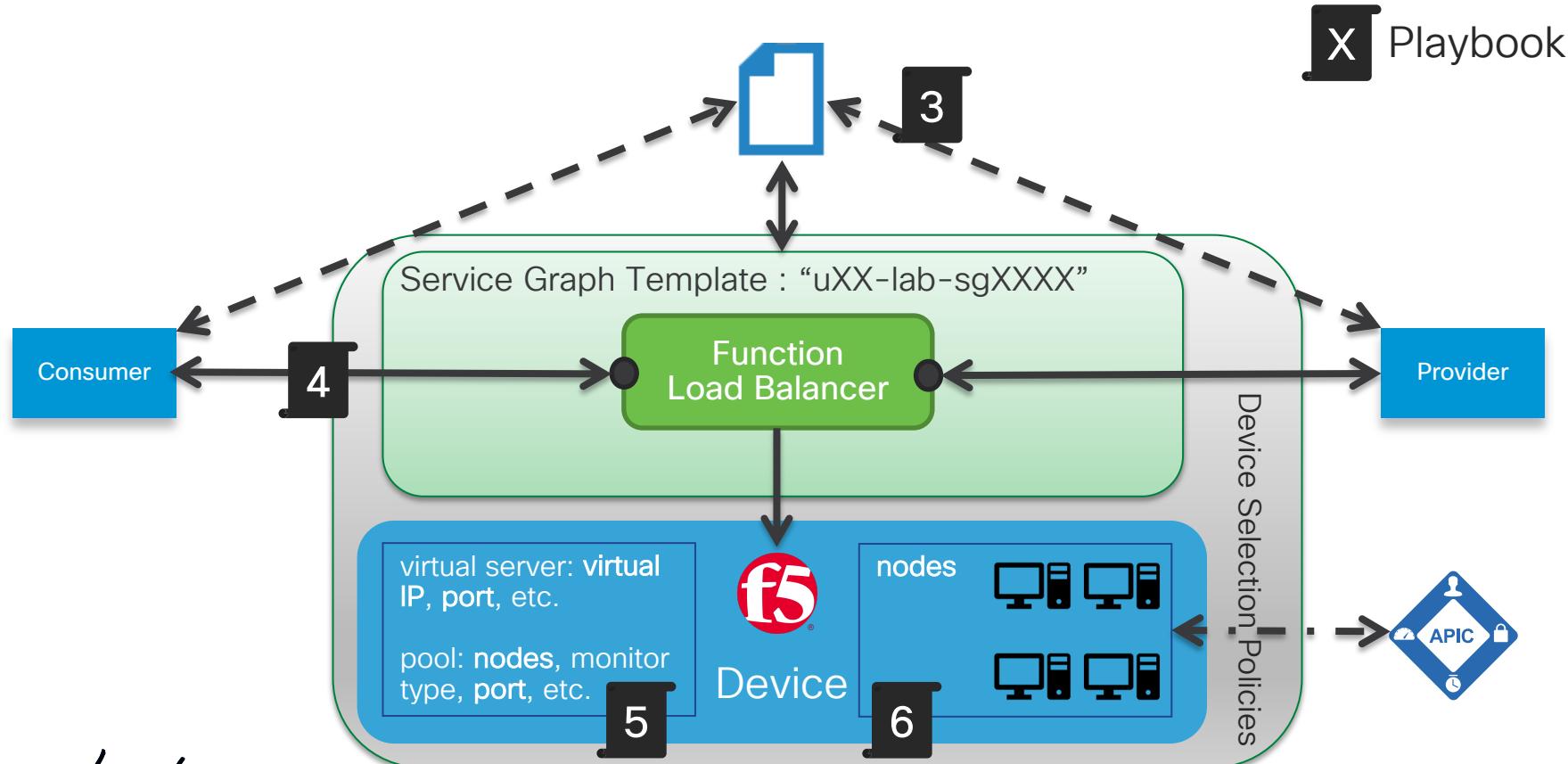
External Bridged Networks: 0 Total

External Routed Networks: 0 Total

Contracts: 0 Total
Standard: 0 Taboo: 0 Imported: 0 Out of Band: 0

Last Login Time: 2019-06-05T23:03 UTC+00:00 Current System Time: 2019-06-07T03:52 UTC+00:00

Our Lab Tasks



Hands On Lab Time!

A large, faint watermark of the Cisco logo is visible across the slide, consisting of a grid of dark blue vertical bars.

Git Repo - <http://bit.ly/cl20-1195-repo>

Lab Guide – <http://bit.ly/cl20-1195>

Q&A

Complete your online session survey



- Please complete your session survey after each session. Your feedback is very important.
- Complete a minimum of 4 session surveys and the Overall Conference survey (starting on Thursday) to receive your Cisco Live t-shirt.
- All surveys can be taken in the Cisco Events Mobile App or by logging in to the Content Catalog on ciscolive.com/emea.

Cisco Live sessions will be available for viewing on demand after the event at ciscolive.com.

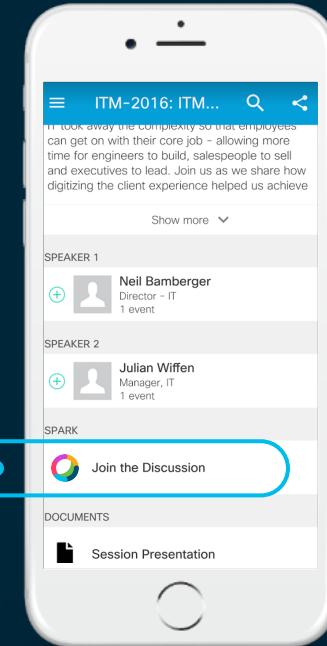
Cisco Webex Teams

Questions?

Use Cisco Webex Teams to chat with the speaker after the session

How

- 1 Find this session in the Cisco Events Mobile App
- 2 Click “Join the Discussion”
- 3 Install Webex Teams or go directly to the team space
- 4 Enter messages/questions in the team space



cs.co/ciscolivebot#DEVWKS-1195

Continue your education



Demos in the
Cisco Showcase



Walk-In Labs



Meet the Engineer
1:1 meetings



Related sessions

Learn more about the new DevNet Certifications and how you can prepare now!

Associate Level

Specialist Level

Professional Level

Expert Level

Engineering



Software



Start Here | Upcoming Cisco DevNet Certifications

- Start at **Meet DevNet**

DEVNET-2864: Getting ready for Cisco DevNet Certifications

Offered daily at 9am, 1pm & 4pm at Meet DevNet

- Attend a **brownbag session**

DEVNET-4099: DevNet Certifications: Bringing software practices & software skills to networking

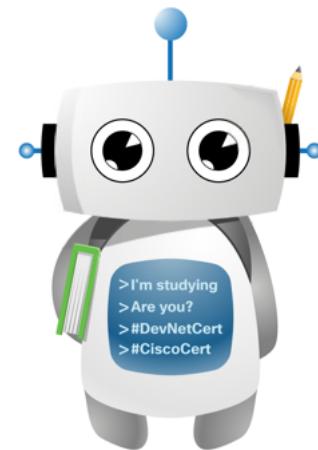
Offered daily 12:15-12:45 in the DevNet Zone Theater

- Visit the **Learning@Cisco** booth

- Scan this code to **sign up** for the latest updates or go to
<http://cs.co/20eur02>



CISCO Live!

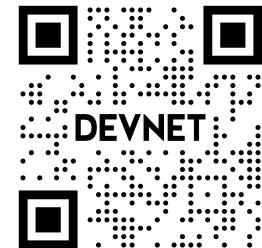


Find shared code repositories of use cases for network automation & more!

The screenshot shows the DevNet Automation Exchange website. At the top, there are navigation links: "Automation Exchange", "Share use case", and "Use case library". The main heading is "Make Network Automation simple with the community". Below the heading, a sub-headline reads: "DevNet Automation Exchange provides shared code repositories for network automation and guides teams through their journey with a walk-run-fly methodology." There are two buttons: "View all use cases" and "Share use case". A text block states: "We are bringing network professionals and software developers into one community to unleash the capabilities of the new network." At the bottom, there is a "Join the community" button.



Scan this code or go to the URL to **learn more**



<http://cs.co/20eur01>



Thank you





i i i i i i i i

You make **possible**