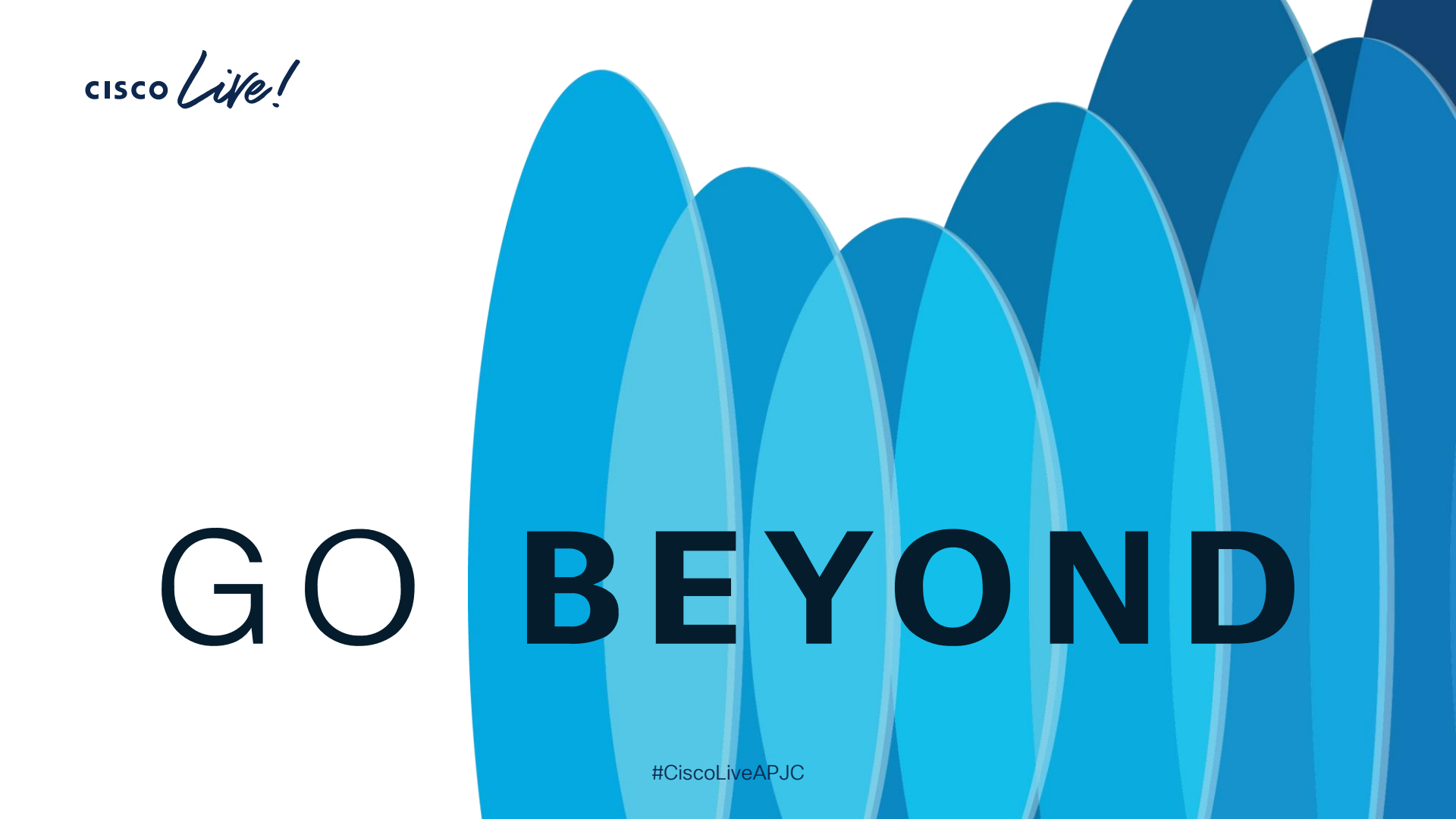
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GO BEYOND
#CiscoLiveAPJC

# Deploying Catalyst Center in Seconds with CICD

Keith Baldwin – Solutions Engineer
CCIE (RS,W) #35439 CCDE #20170057

DEVNET-2176

# Cisco Webex App

https://ciscolive.ciscoevents.com/ciscolivebot/#DEVNET-2176

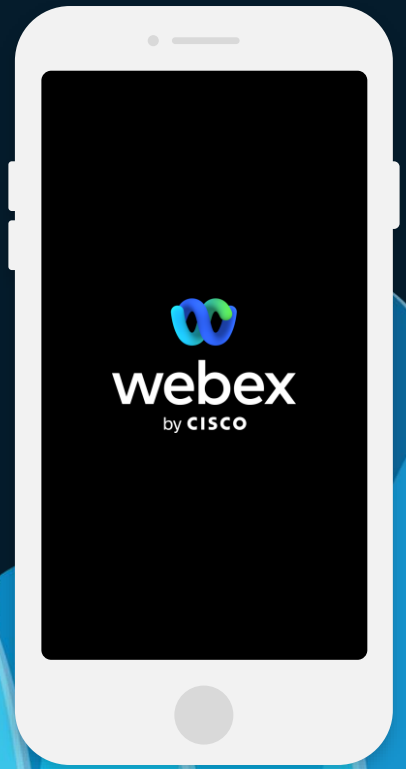
## Questions?

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

## How

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

## Webex spaces will be moderated by the speaker until November 15, 2024.

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# Agenda

- Building Orchestration
- Building Blocks
  - Controller
  - REST API
  - Python
  - Automation/CICD Platforms
- LAB Overview
- Labs
- Conclusion


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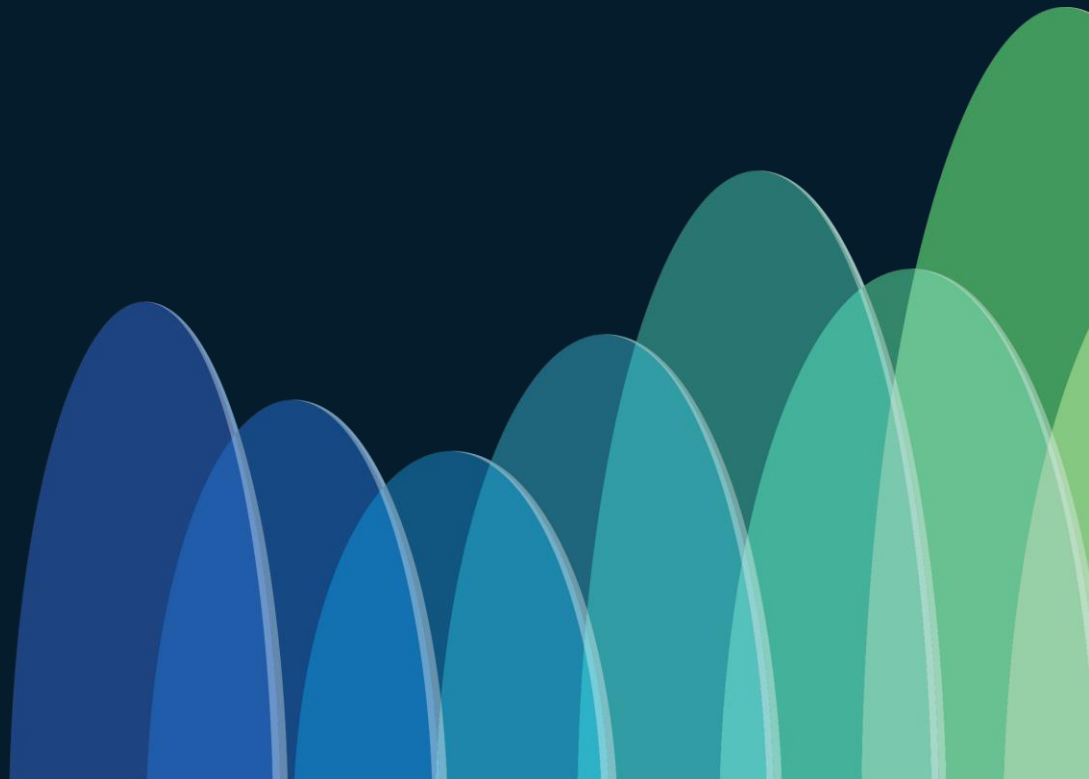
# Building Orchestration



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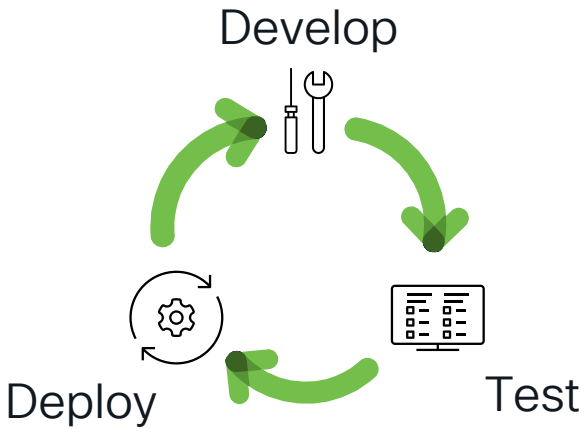
# Advantages of Continuous Delivery

Automate Changes




Increase Productivity

Fault Find Quickly

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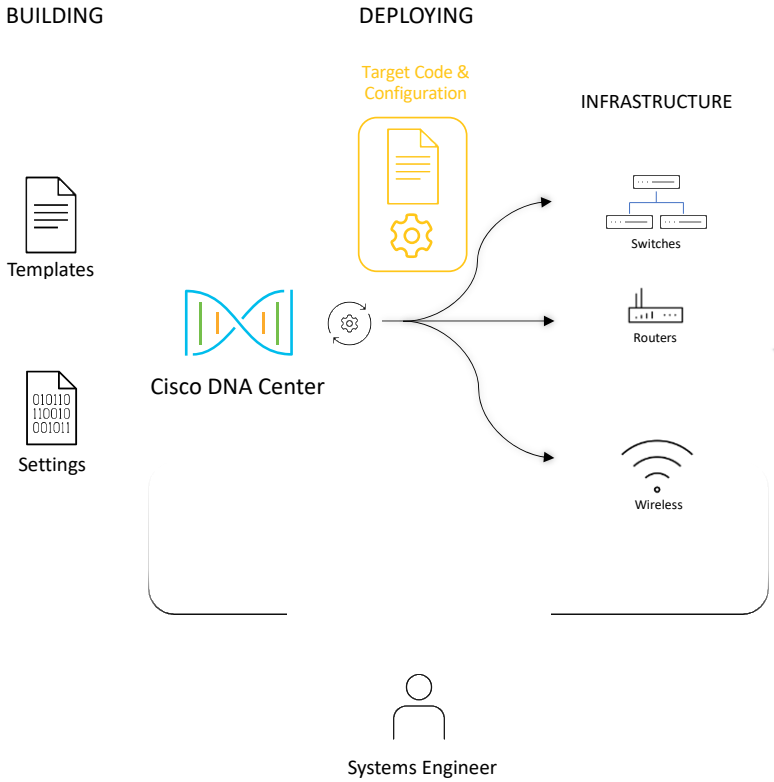
# Catalyst Center with REST API towards CICD





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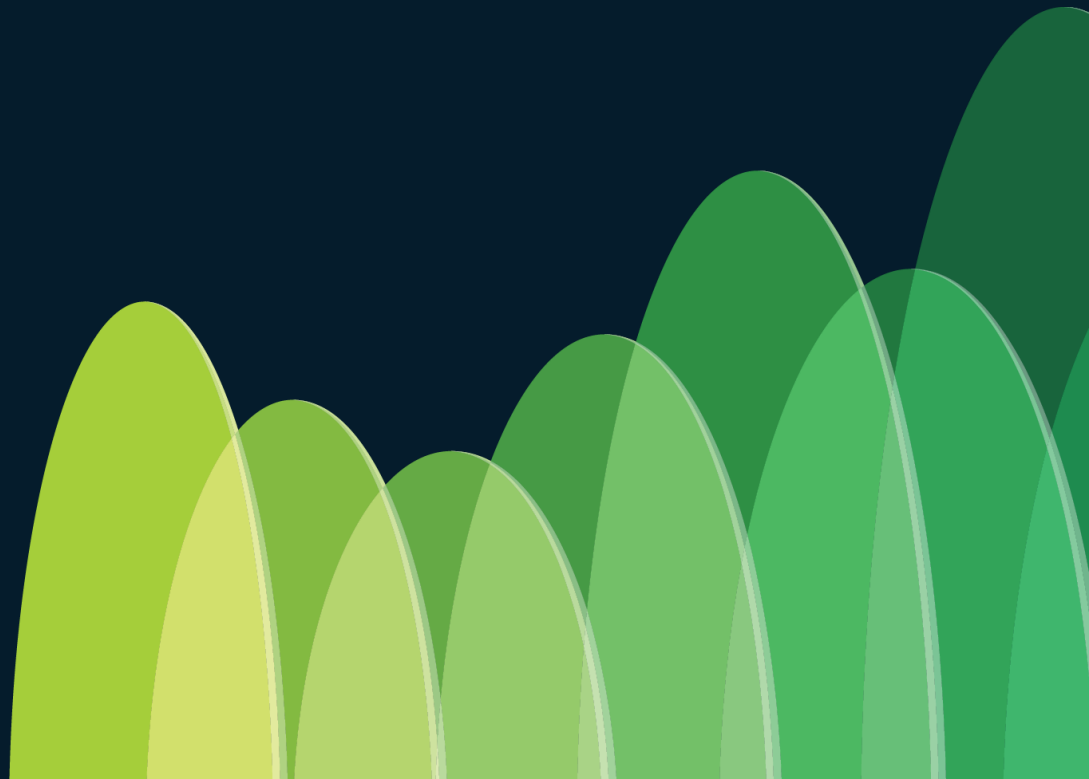
# Building Blocks



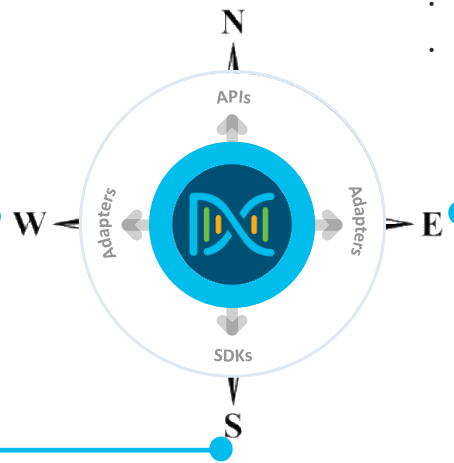
# Controller
## Catalyst Center Platform

### IT and network system processes

- ITSM
- IPAM
- Reporting

### Business integration APIs

- Assurance
- Path Trace
- Command Runner
- Template Programmer
- Network Inventory / Discovery
- Topology
- Plug-n-Play
- Software Image Management (SWIM)




### Multidomain integrations

- SD-WAN
- Meraki
- ISE
- ACI via ISE
- Spaces
- ThousandEyes
- Webex

### Non-Cisco network devices

Map 3rd Party Network Devices to Data Model

Level 1 Operations support:
Discovery, Inventory, Topology, Availability, Command Runner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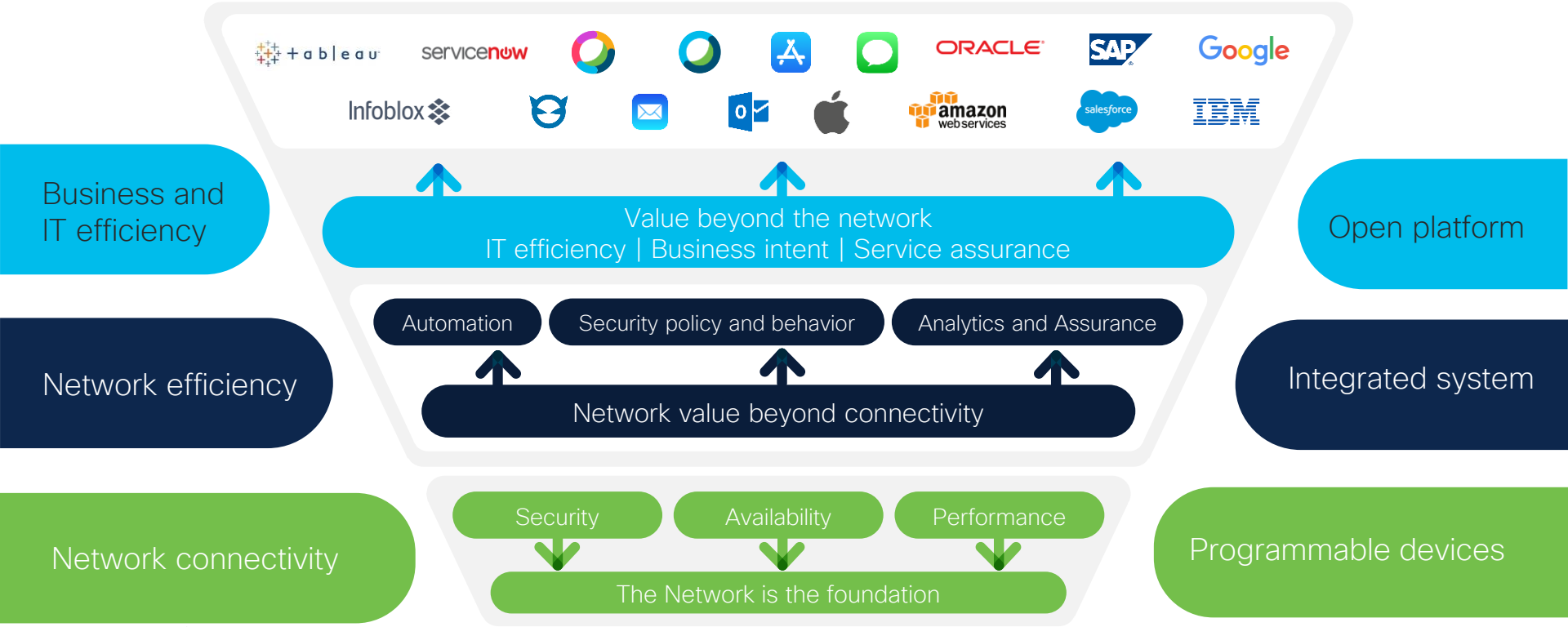
# REST APIs
## Integrations





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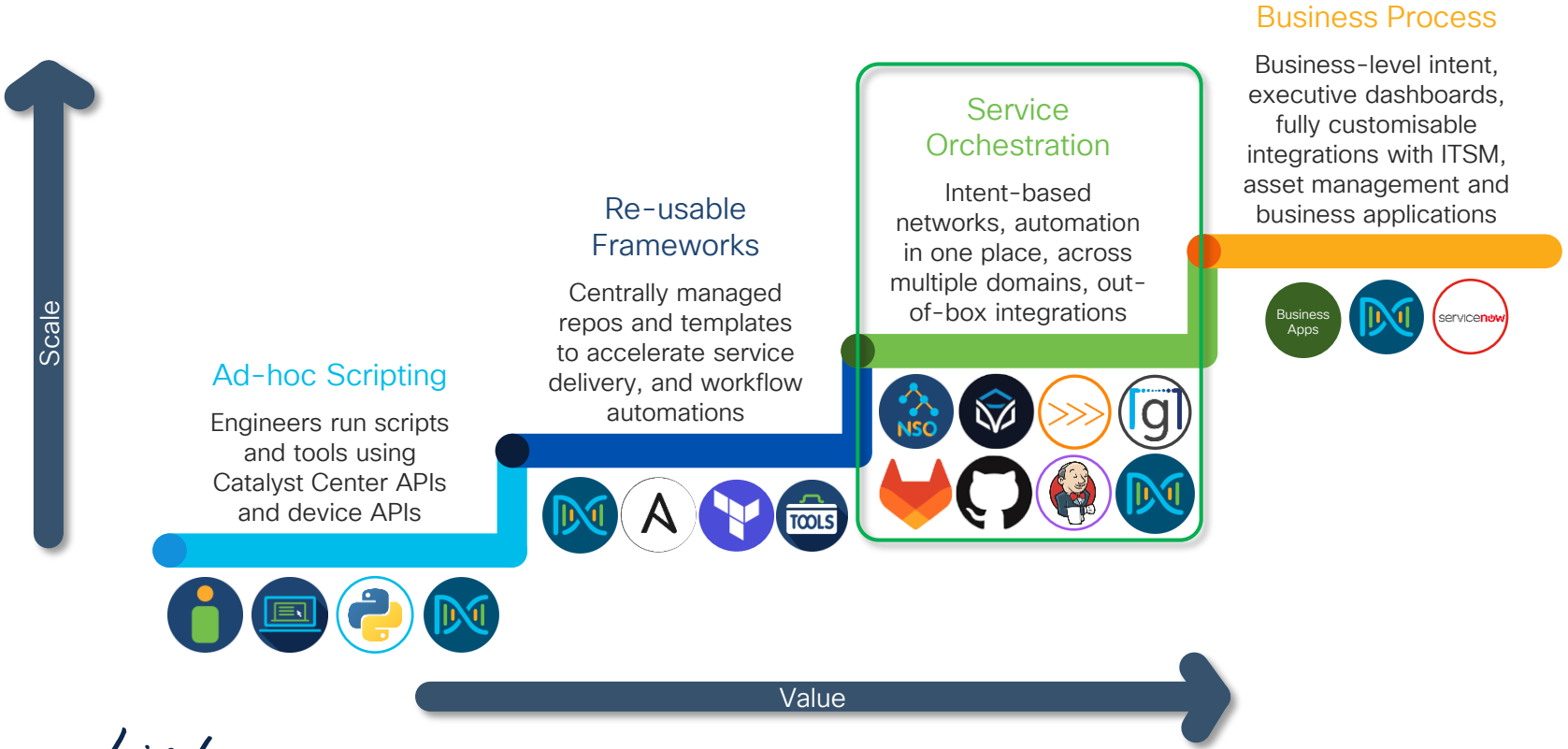
# Catalyst Center and DevOps Journey





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# Catalyst Center CICD Integrations

- ✓ Declarative – Abstracted configuration state
- ✓ Code re-use
- ✓ Increase compliance, reduce configuration drift
- ✓ Consistent processes and outcomes
- ✓ Rich visibility and integrations

***Note:***
*Network engineer provides:*
*Intent to be used by predefined automation workflows*

Jenkins docs: https://jenkins.io


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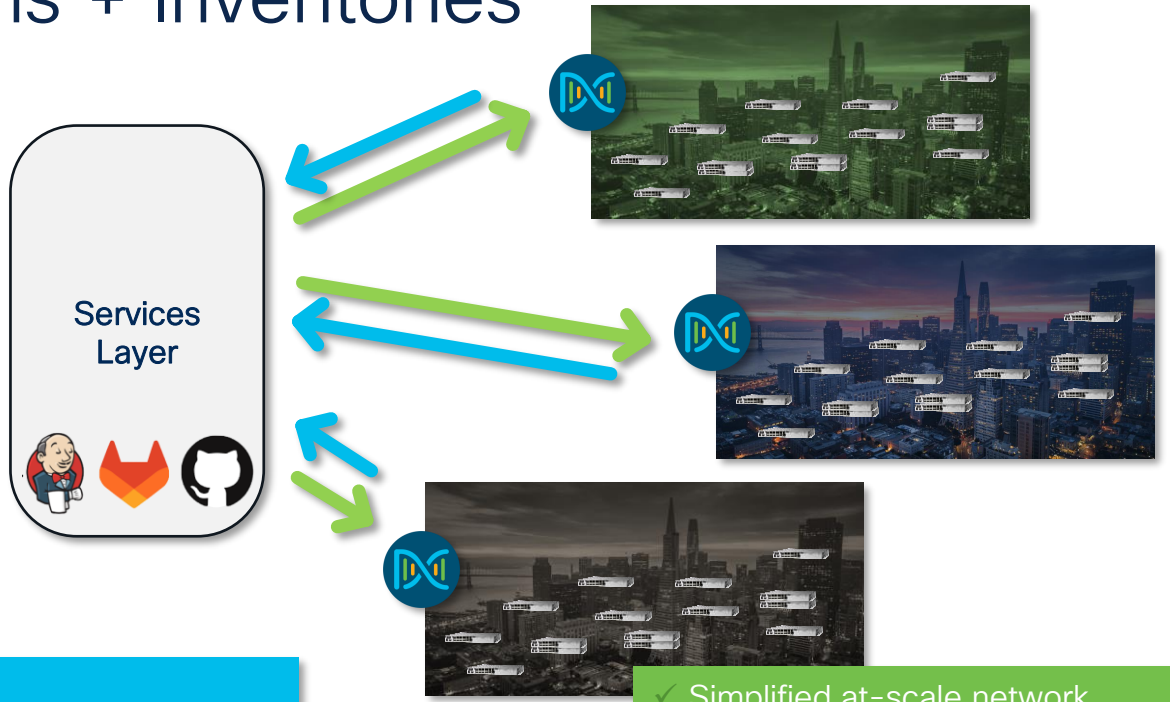
# Git Configurations + Inventories

- CLI templates and profiles
- Network settings
- SDA-as-Code configurations
- Custom events notifications and subscriptions
- Reports and inventory
- Compliance




*Notes:*
*Configurations could be CLI templates, profiles, network settings or YAML/JSON intent configurations - SDA Enables time travel, changes, reporting*

- ✓ Simplified at-scale network management
- ✓ Consistent and efficient service delivery across clusters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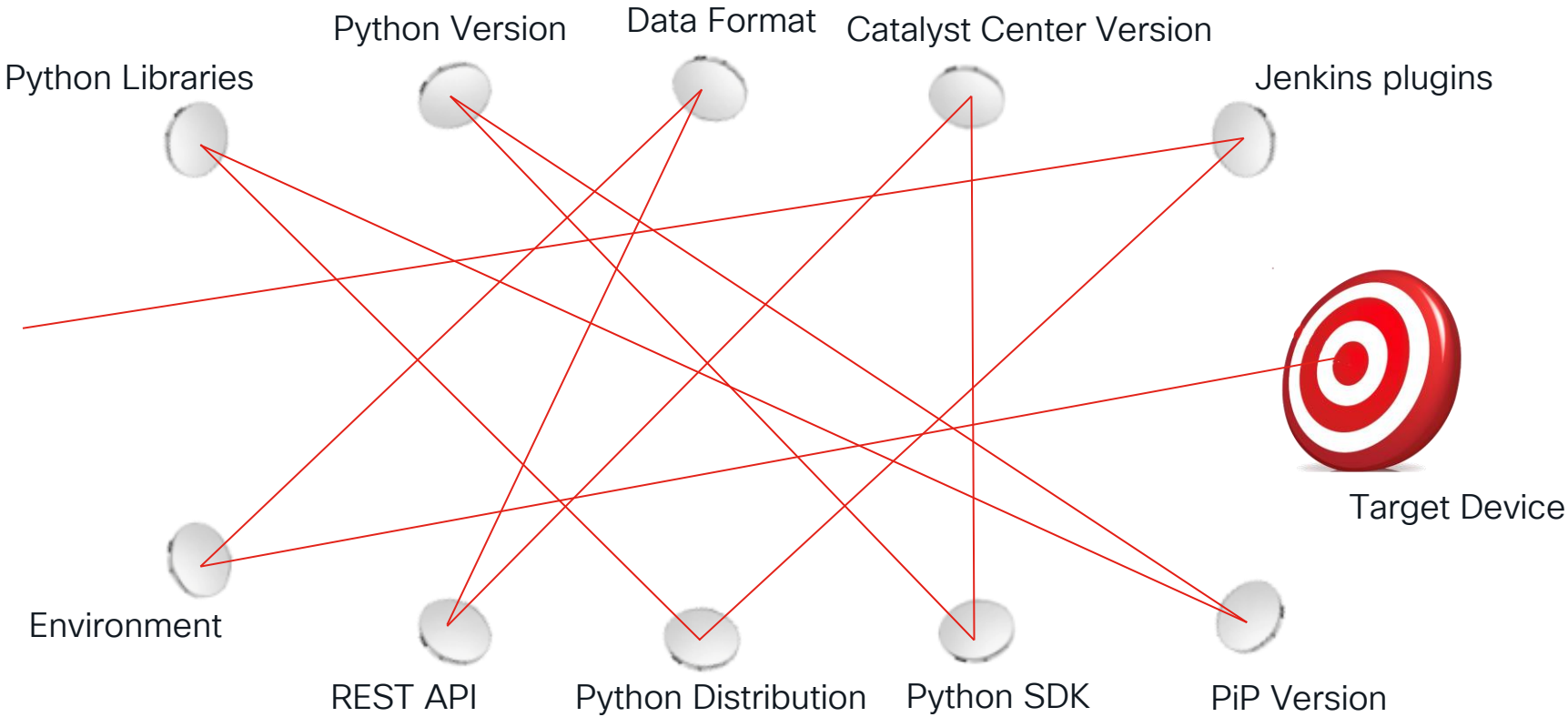
*“Like trying to hit a ‘bullet’ with a smaller bullet whilst wearing a blindfold, riding a horse…”* – *Montgomery Scott, Star Trek*





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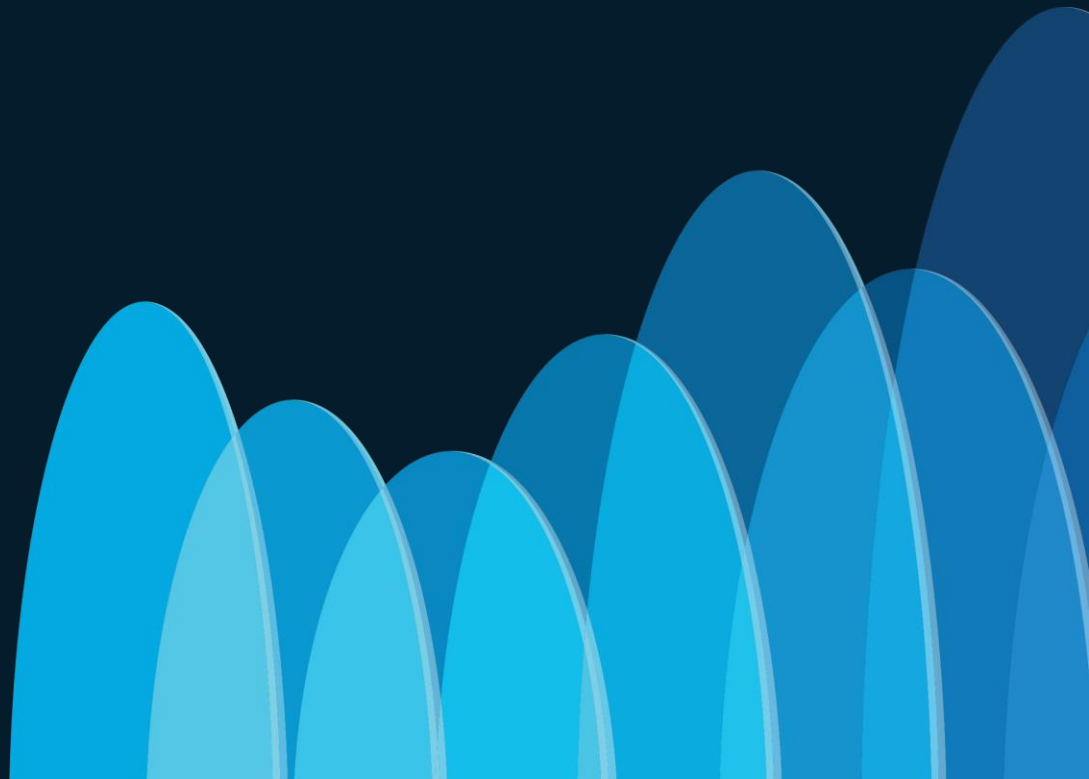
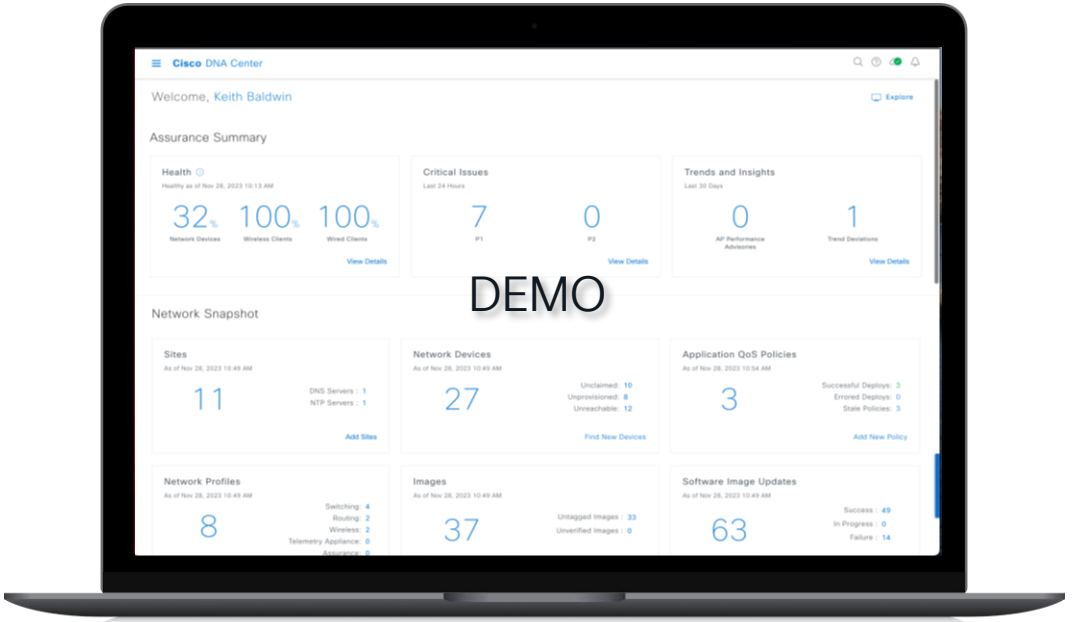
# Demonstration



# Catalyst Center – REST-API

What do they mean?
How do I use them?

Documented vs Undocumented
Published vs Unpublished
Supported vs Unsupported
External vs Internal





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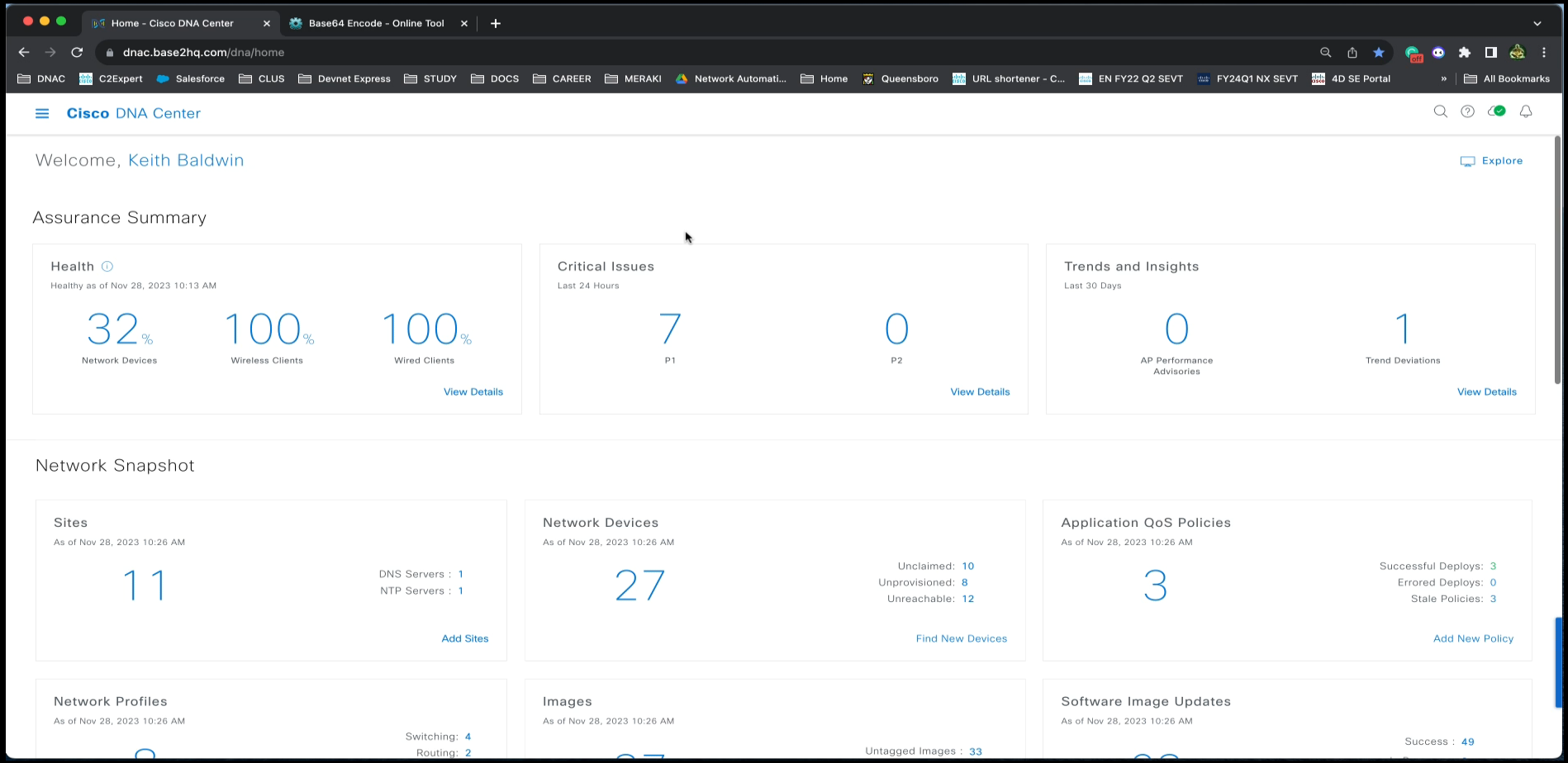



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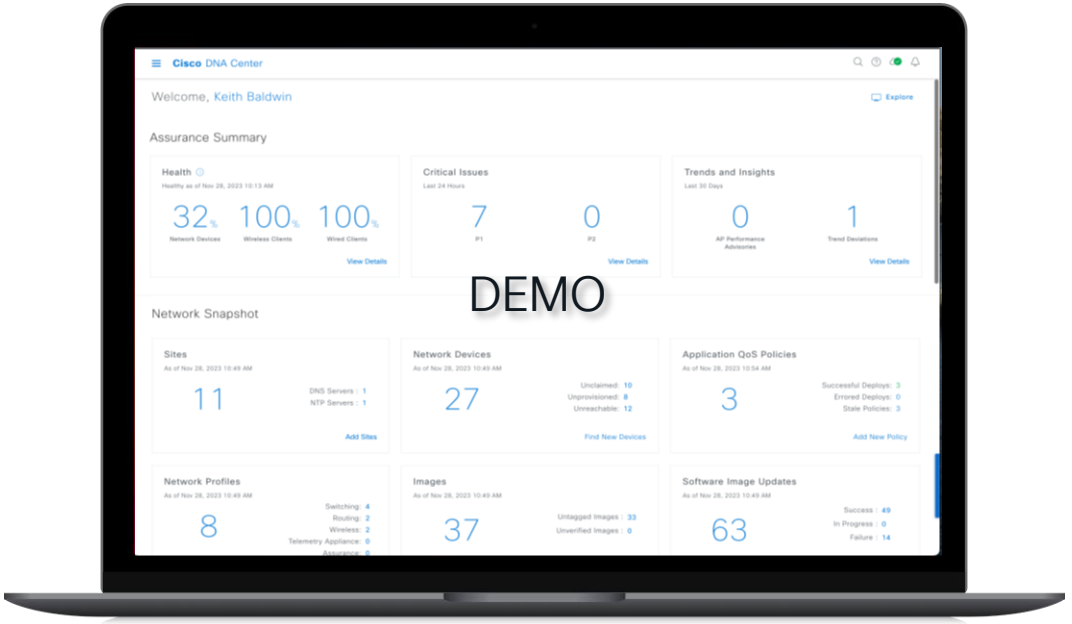
# Catalyst Center – Python / Ansible

*Writing Python Programs using the Developer Resources, and the Python SDK?*

*How do I use them?*
*When do I use them?*
*What does it look like?*





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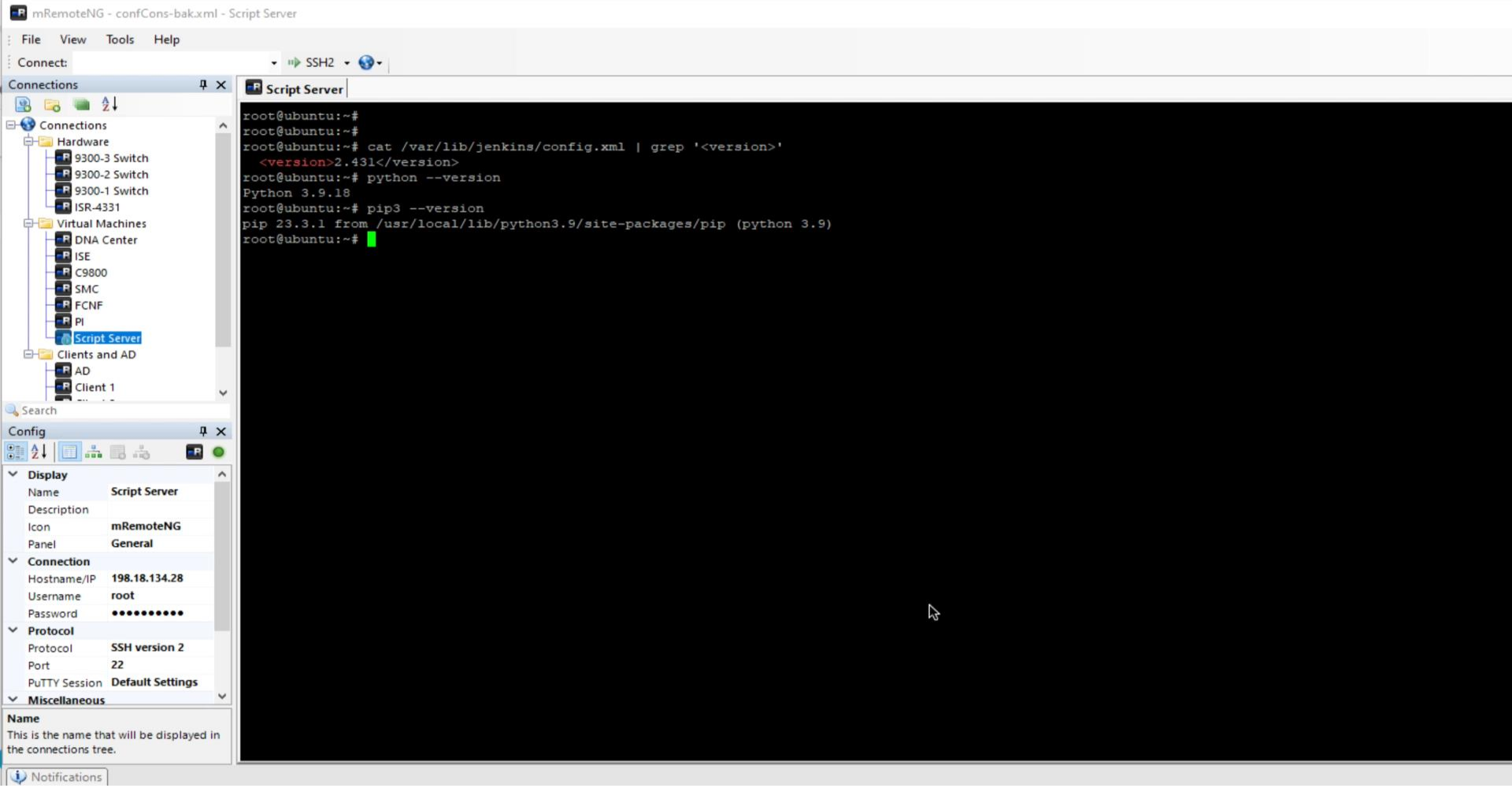



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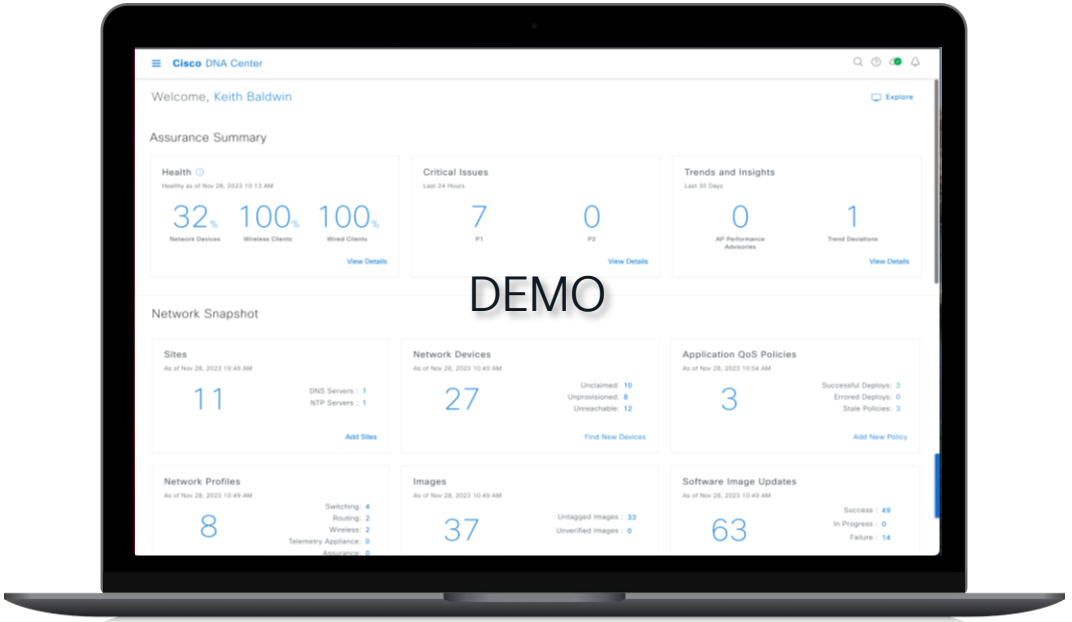
# Catalyst Center and Orchestration

Writing Python Programs or Ansible using the Developer Resources, and the Python SDK?

How do I use them?
When do I use them?
What does it look like?





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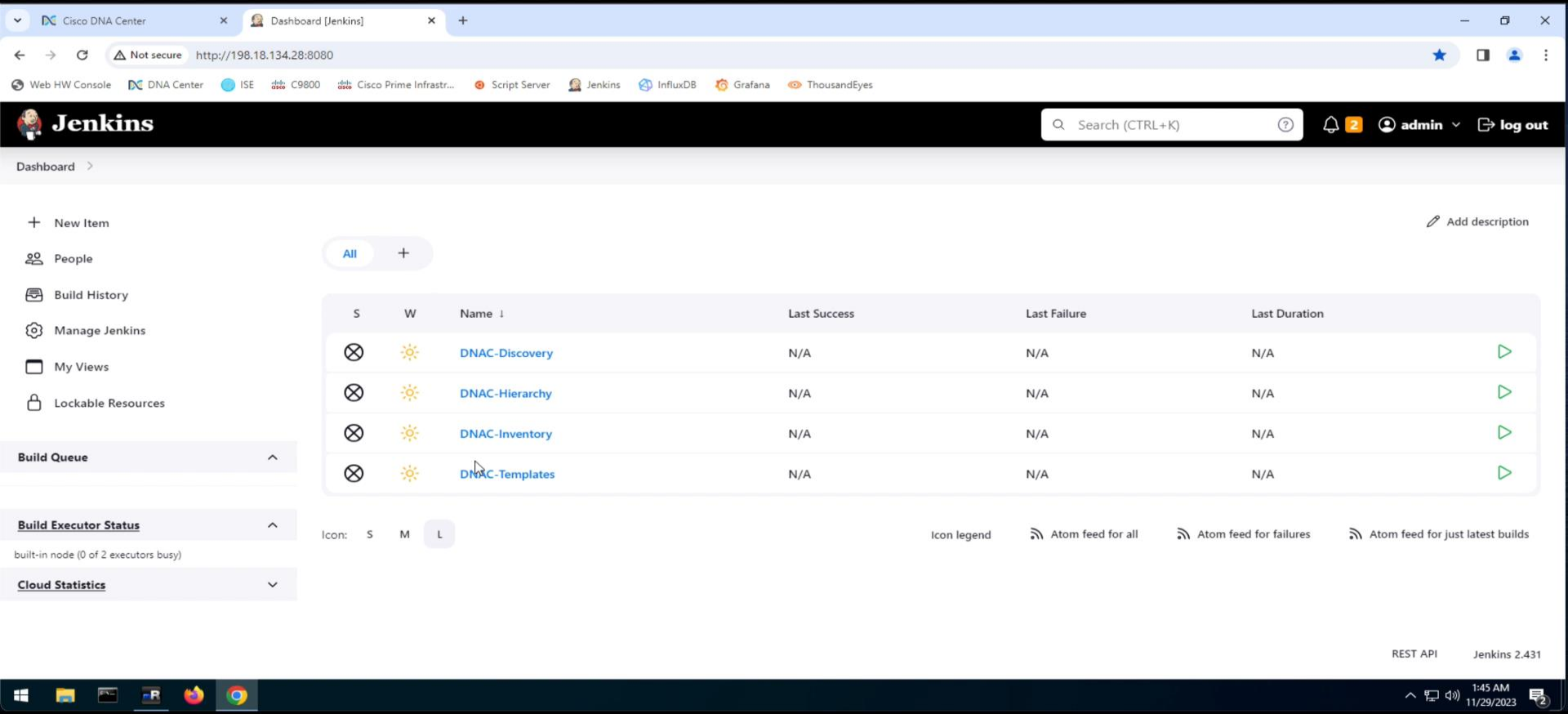



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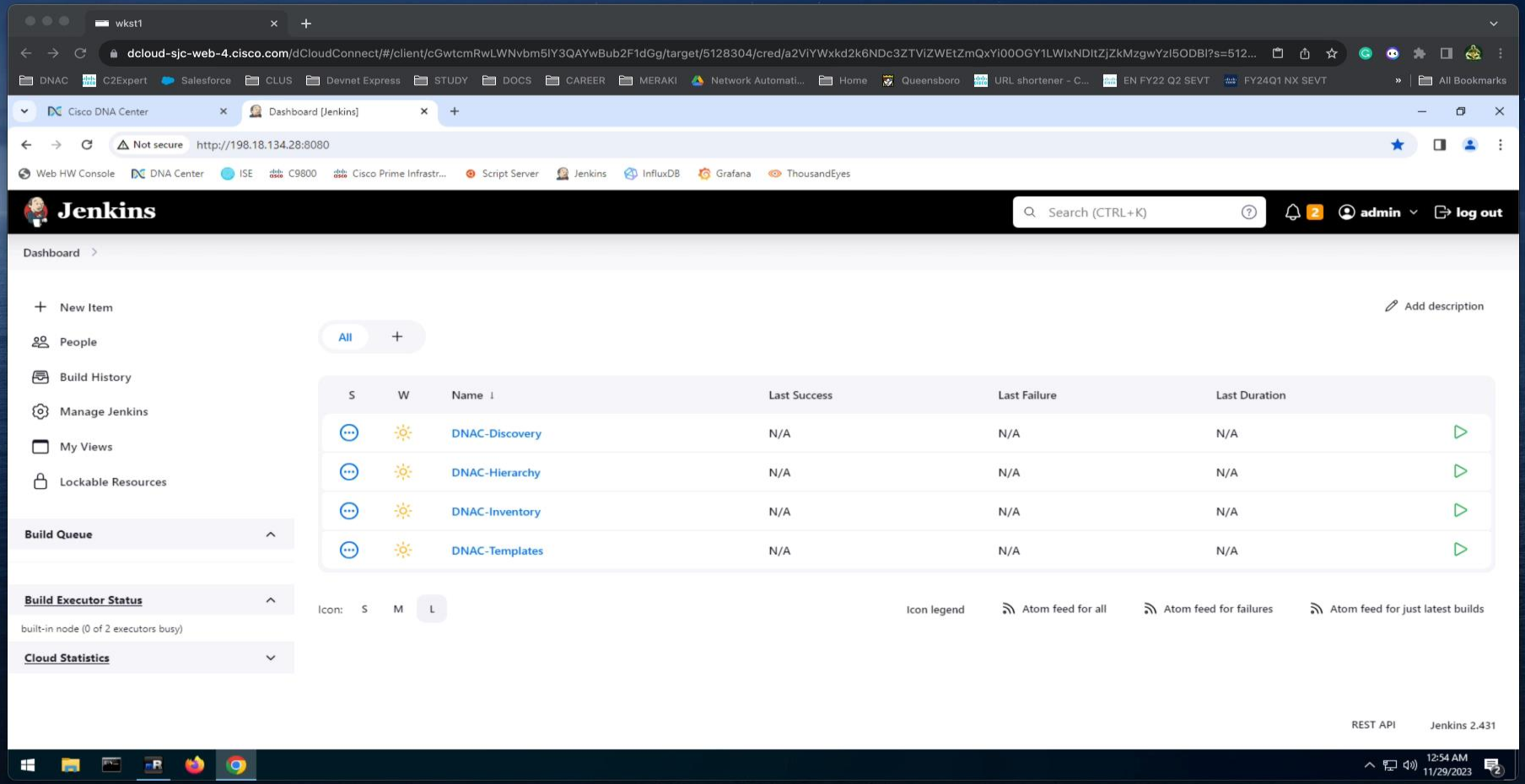



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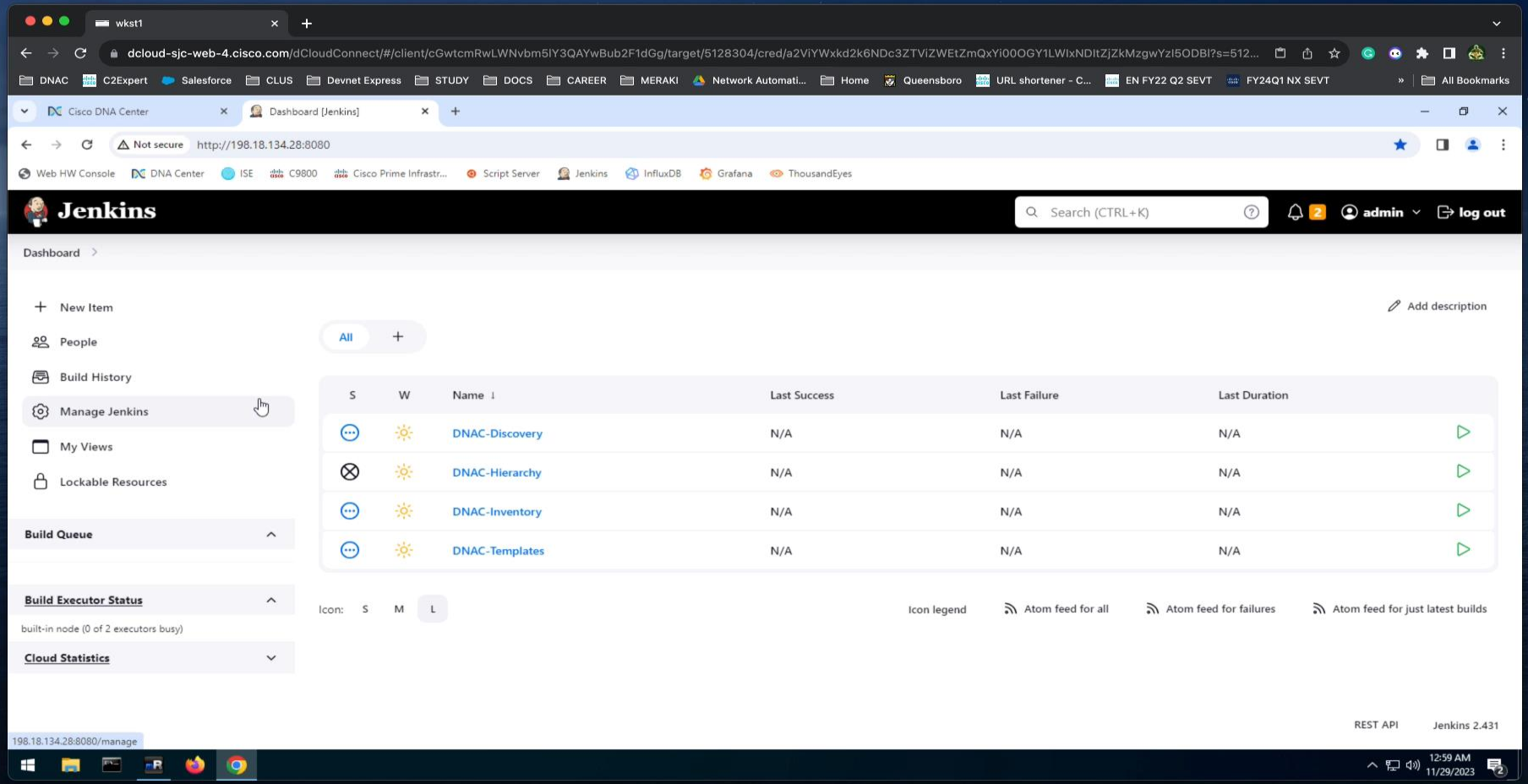



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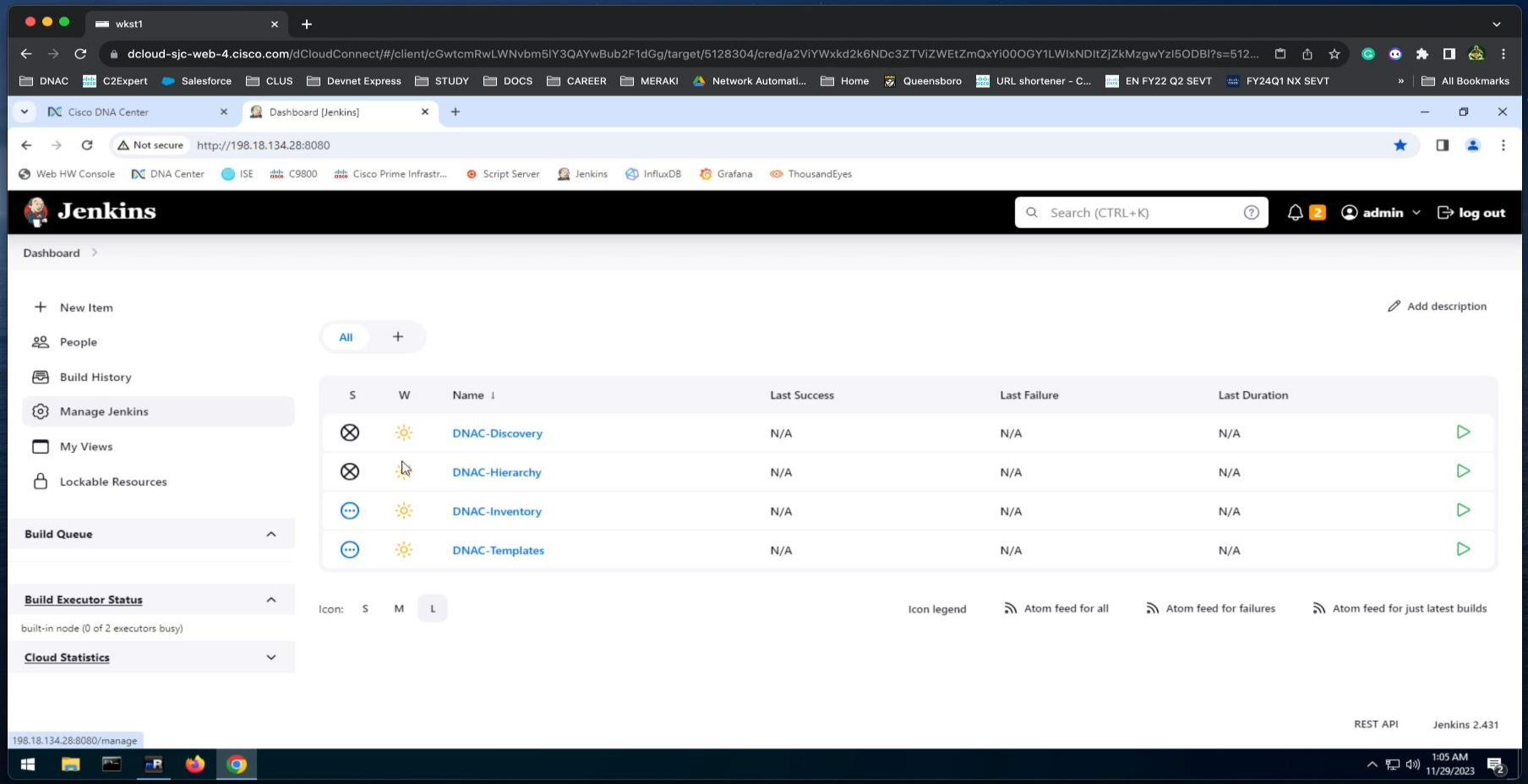



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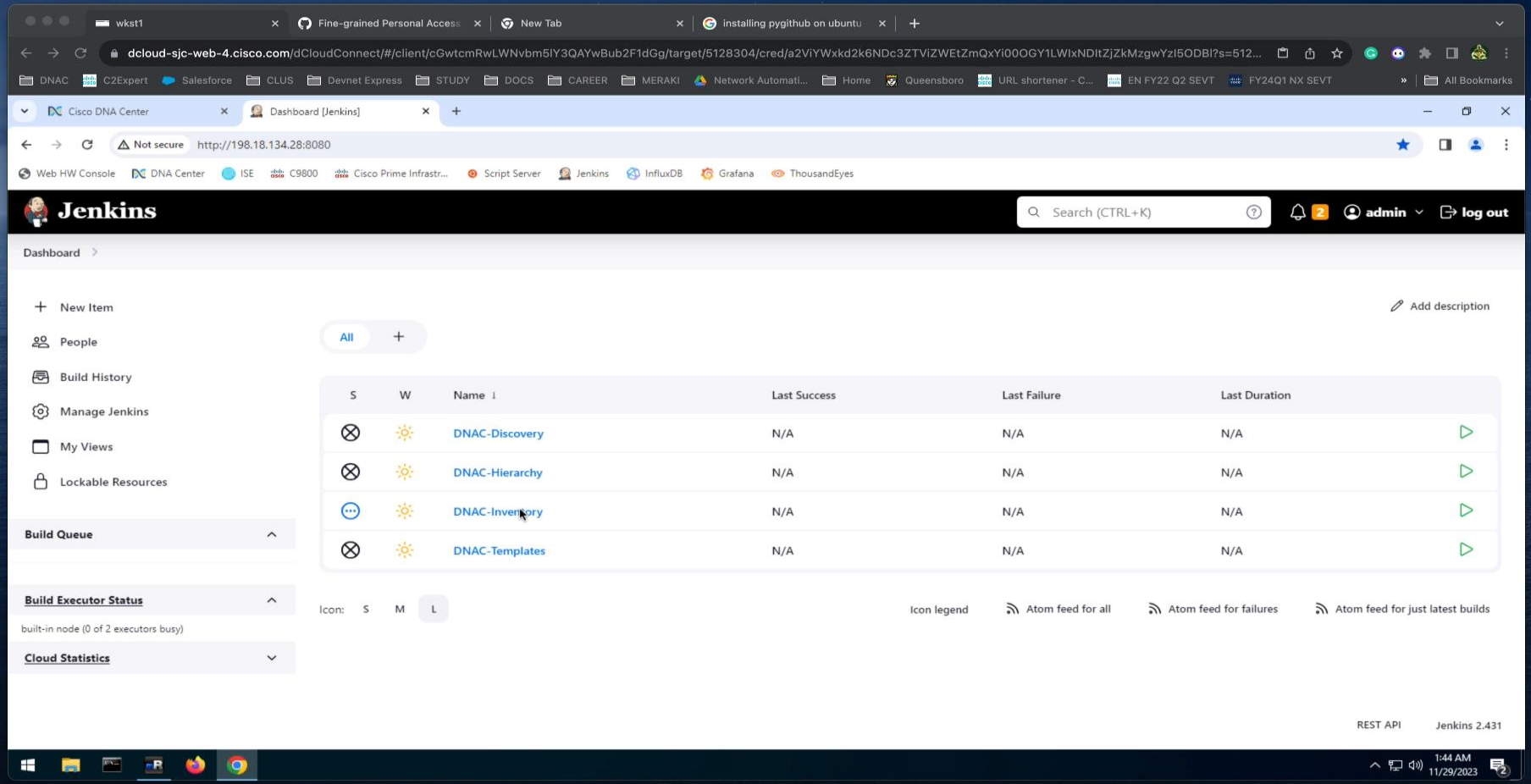



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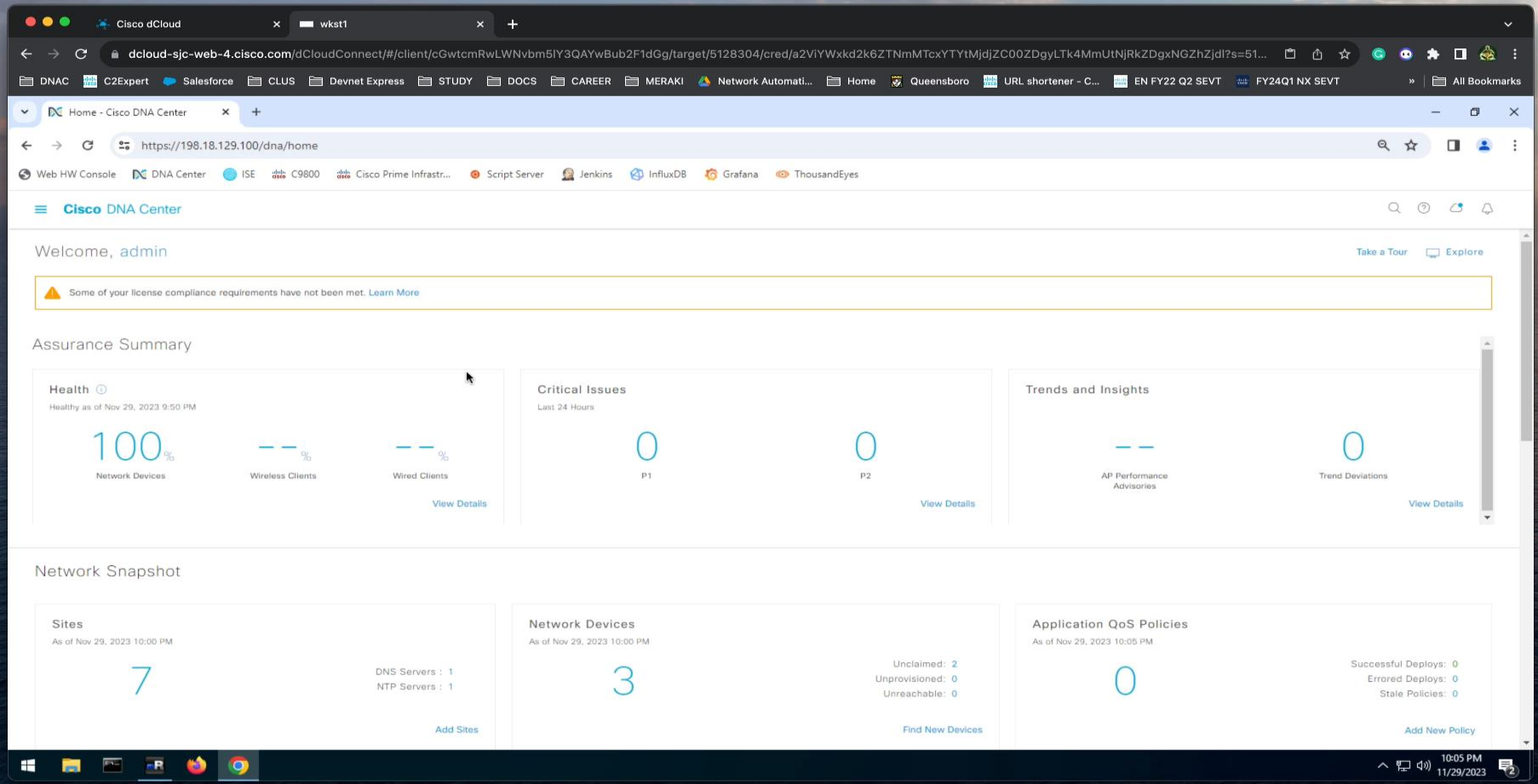



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# But now what?


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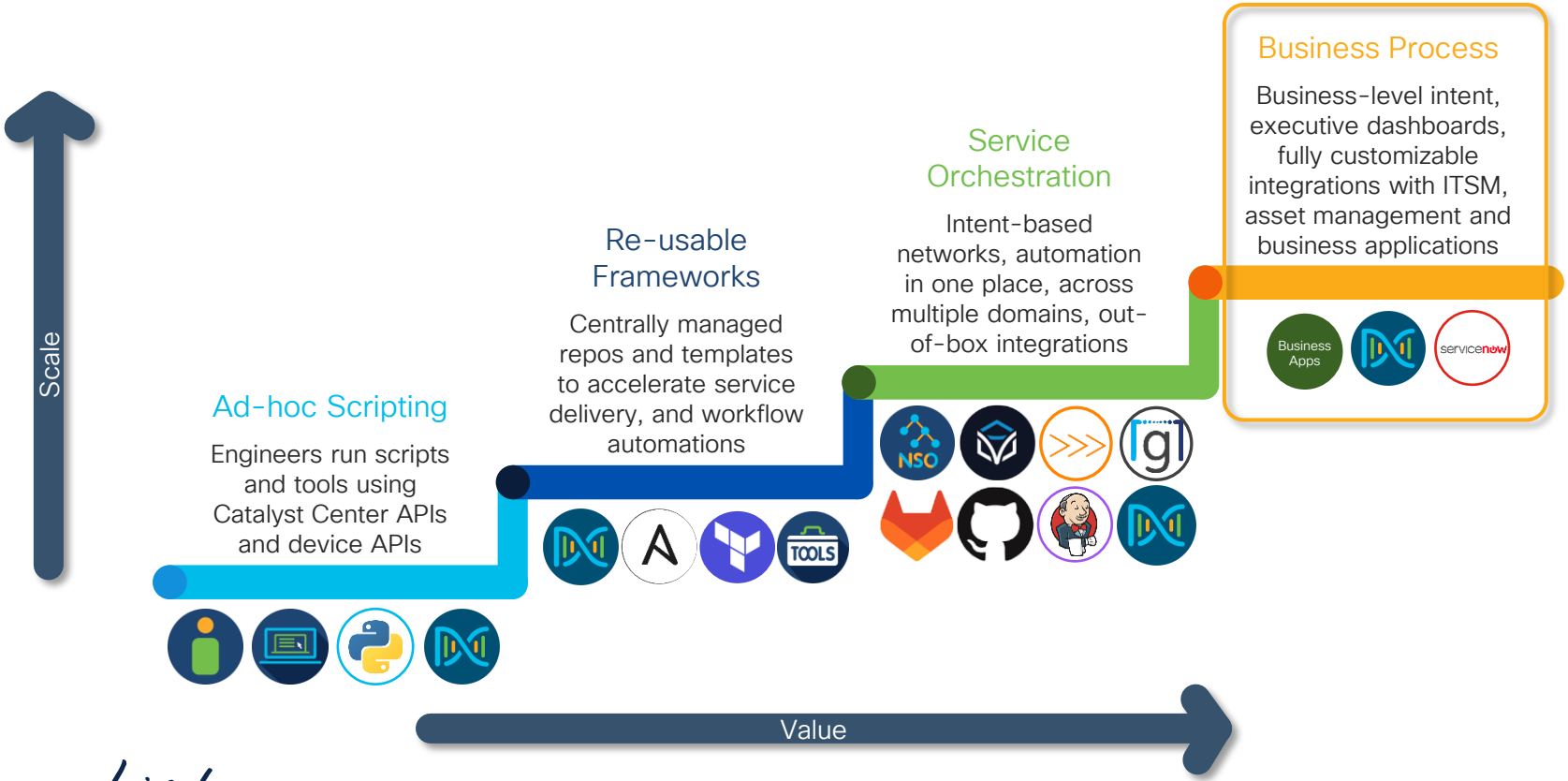
# Catalyst Center and DevOps Journey





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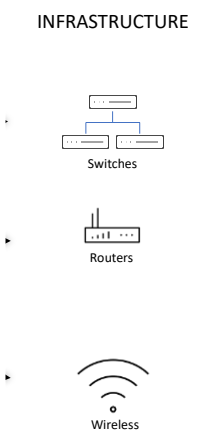
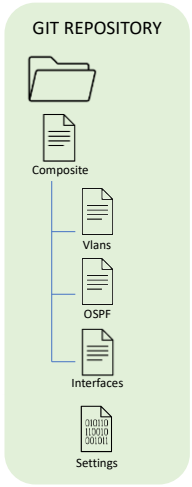
# Just one more thing!!!

## We dealt with:

### Who?




### What?




### How?

- Python
- Ansible
- Jenkins
- GitHub
- GitLab

## Now deal with:

### When?

- Approvals
- Change Control
- Incident Control
- Compliance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# Key Takeaways:

- Orchestration Overview
- Building Blocks:
  - Controller
  - REST APIs
  - Python
  - Automation/CICD Platforms
- LAB where you go to try some simple concepts


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# Summary

Continue Learning

- Cisco Certification Learning platform.
- developer.cisco.com

Develop Your Skills

- DevNet Sandbox
- Cisco dCloud
- Tools GitHub, Postman, Python

Certify

- DevNet Certifications



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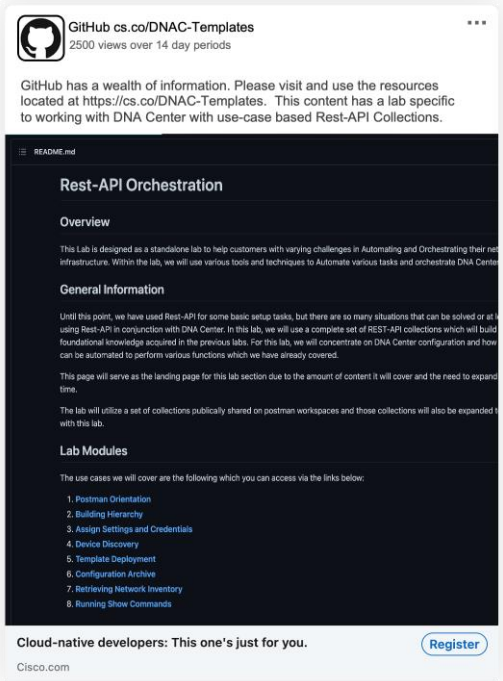
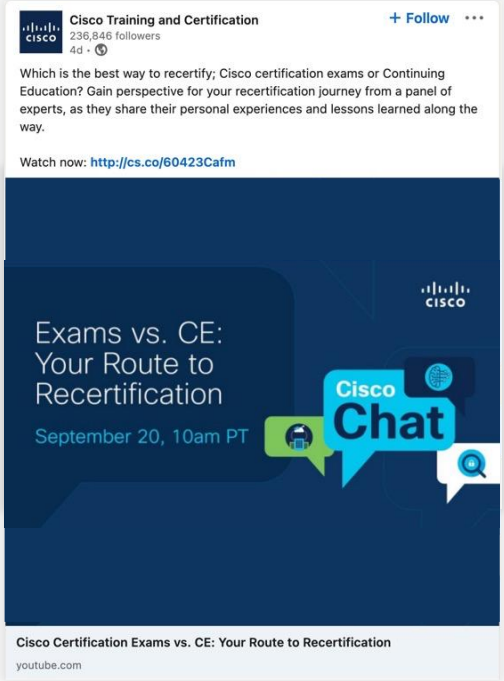
# Where to learn:

## Developer.cisco.com

## cs.co/DNAC-Templates




## Cisco Digital Learning





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**Wednesday**
**10:30am –11:30am**

Experiences Amplified: How AI Can Fuel Better Employee and Customer Experiences

**Level 1**
**Room 106**

Smart, Secure, Seamless: Transforming Experiences with Next-Generation Networking

**Level 2**
**Room 204**

Harness a Bold New Era: Transform Data Centre and Service Provider Connectivity

**Level 2**
**Room 203**

Securing User to Application and Everything in Between

**Level 2**
**Melbourne Room 2**

Unlocking Digital Resilience through Unified Observability

**The HUB**
**Centre Stage**

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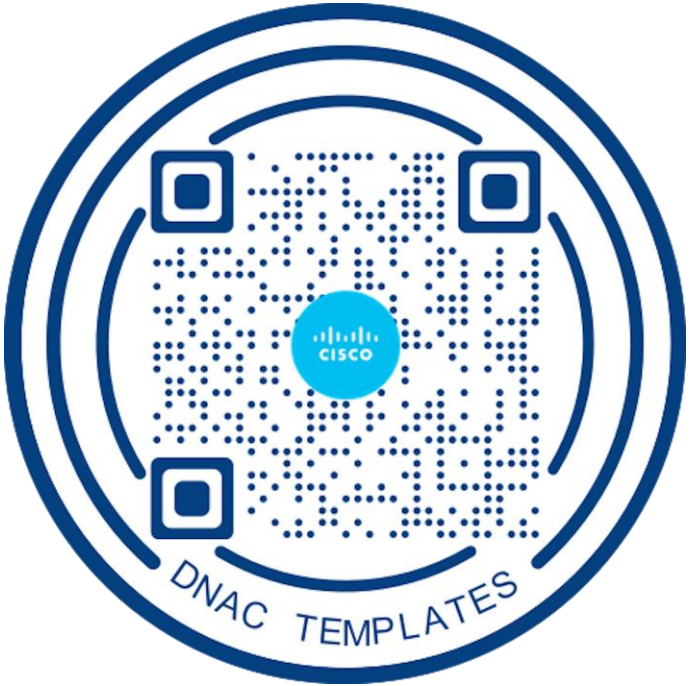
# Continue your education

## DNAC-TEMPLATES Repository

For more programmability with Catalyst Center visit:

https://cs.co/DNAC-TEMPLATES

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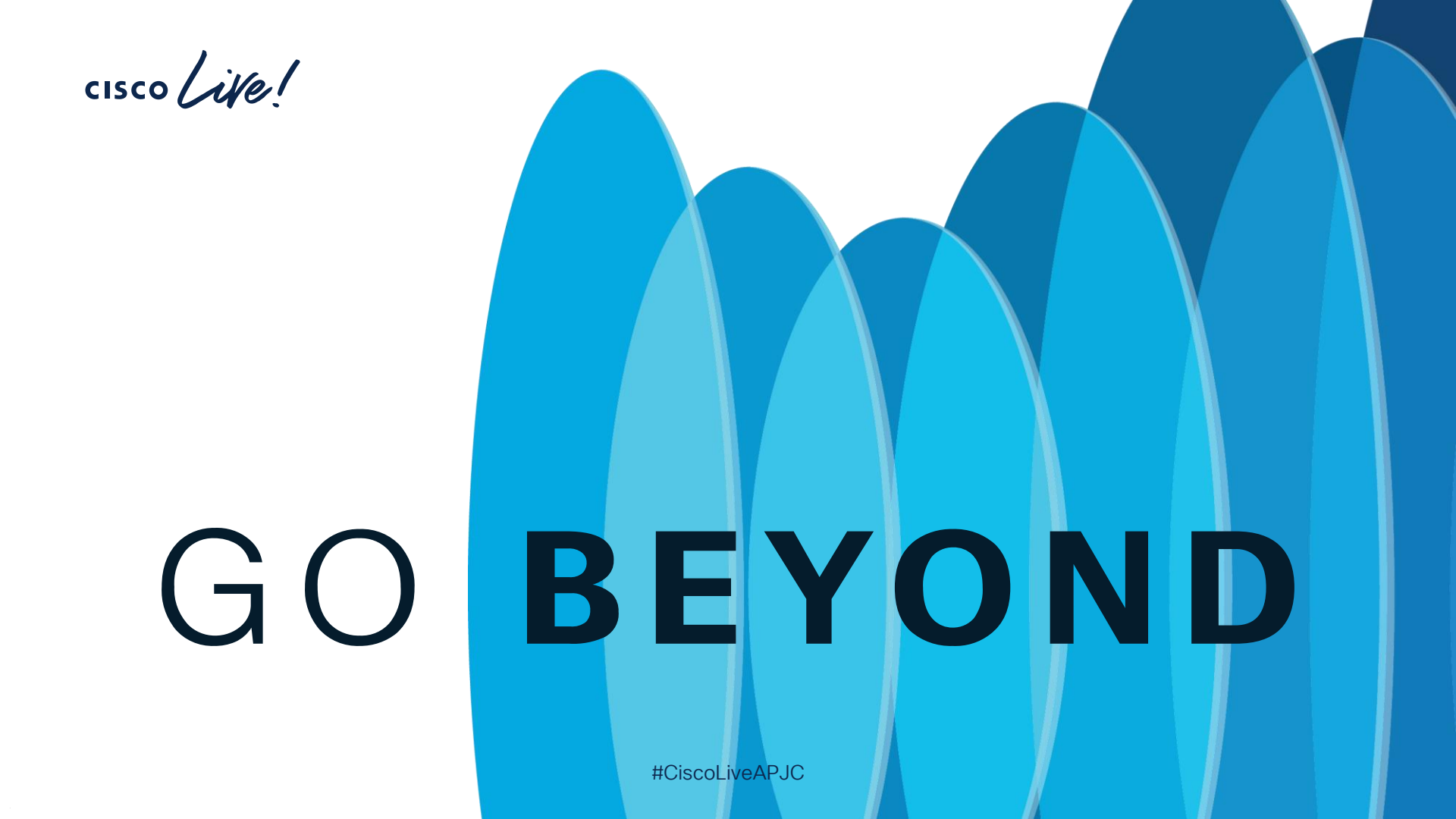
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