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Automating ACI on AWS

Automate cloud APIC operations on AWS through programmability

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@nvermande

DEVNET-2618

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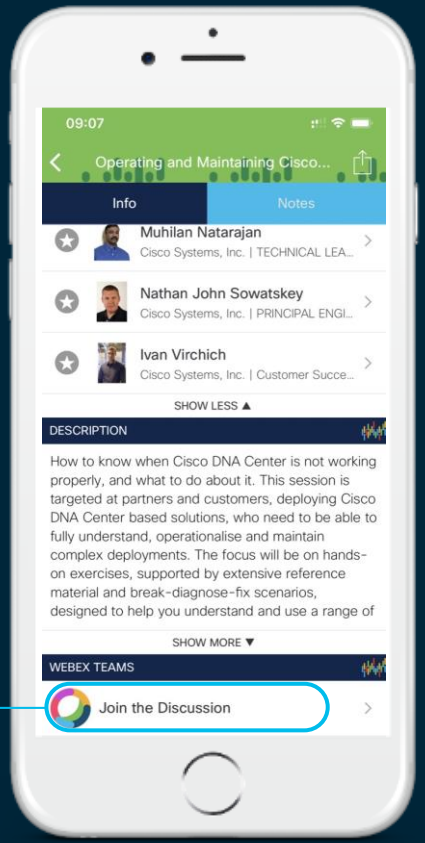

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Agenda

- ACI Anywhere and AWS
- cloud APIC
- Demo: cloud APIC Config and operations the old school way
- Programmability Options
- Demo: cloud APIC Config and operations through APIs and Terraform
- Summary & Resources
- Q&A

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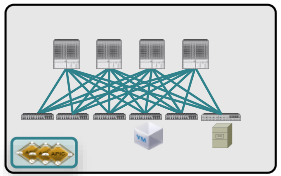
ACI Anywhere and AWS

ACI Anywhere and AWS
Fabric and Policy Domain Evolution

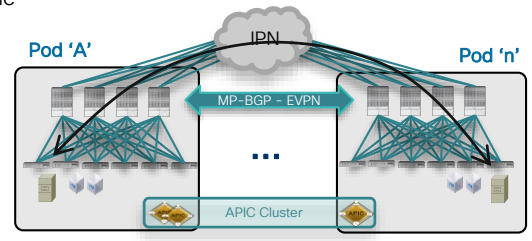
ACI Single Pod Fabric



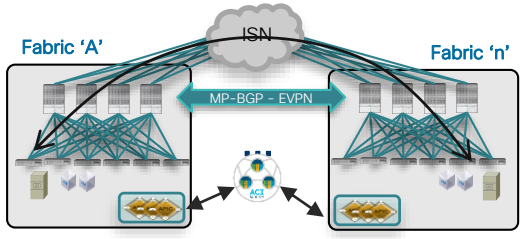
ACI 1.0 – Leaf/Spine Single Pod Fabric

ACI 2.0 – Multiple Networks (Pods) in a single Availability Zone (Fabric)

ACI Multi-Pod Fabric



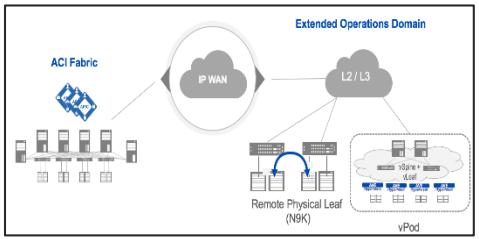
ACI Multi-Site



ACI 3.0 – Multiple Availability Zones (Fabrics) in a Single Region 'and' Multi-Region Policy Management

ACI 3.1/4.0 – Remote Leaf and vPod extends an Availability Zone (Fabric) to remote locations

ACI Remote Leaf



ACI Multi-Cloud

ACI 4.1 – ACI Extensions to Multi-Cloud

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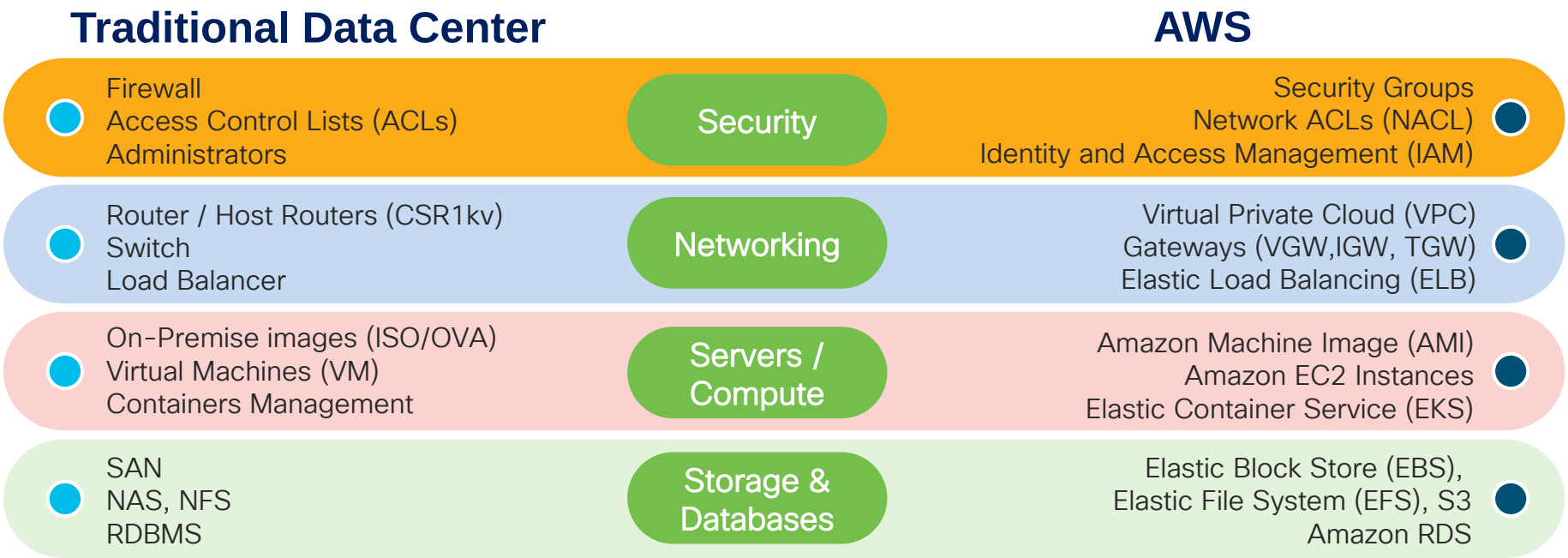
Let’s demystify AWS

Cloud Core

Infrastructure & Services



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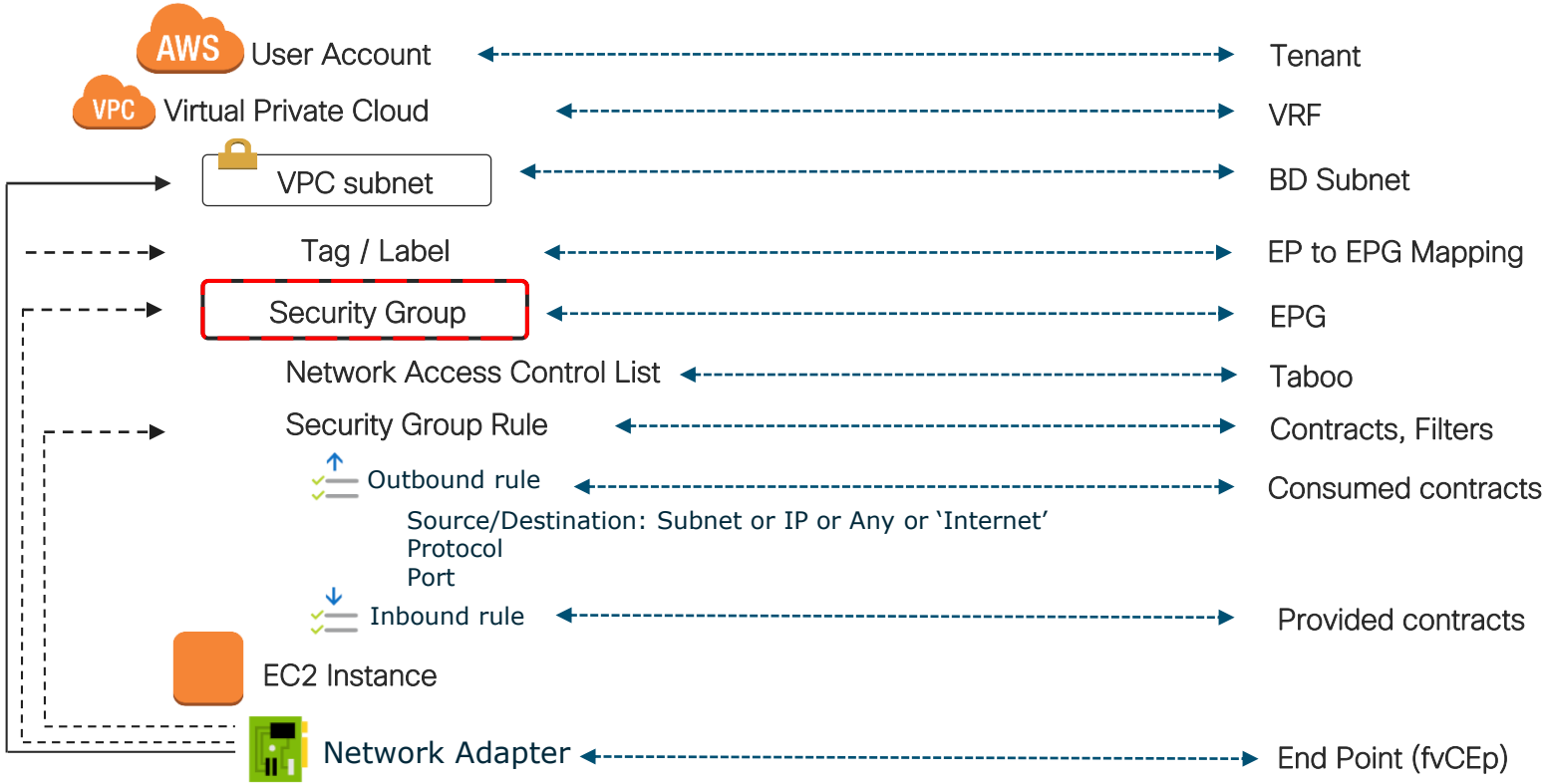
Policy Mapping – AWS



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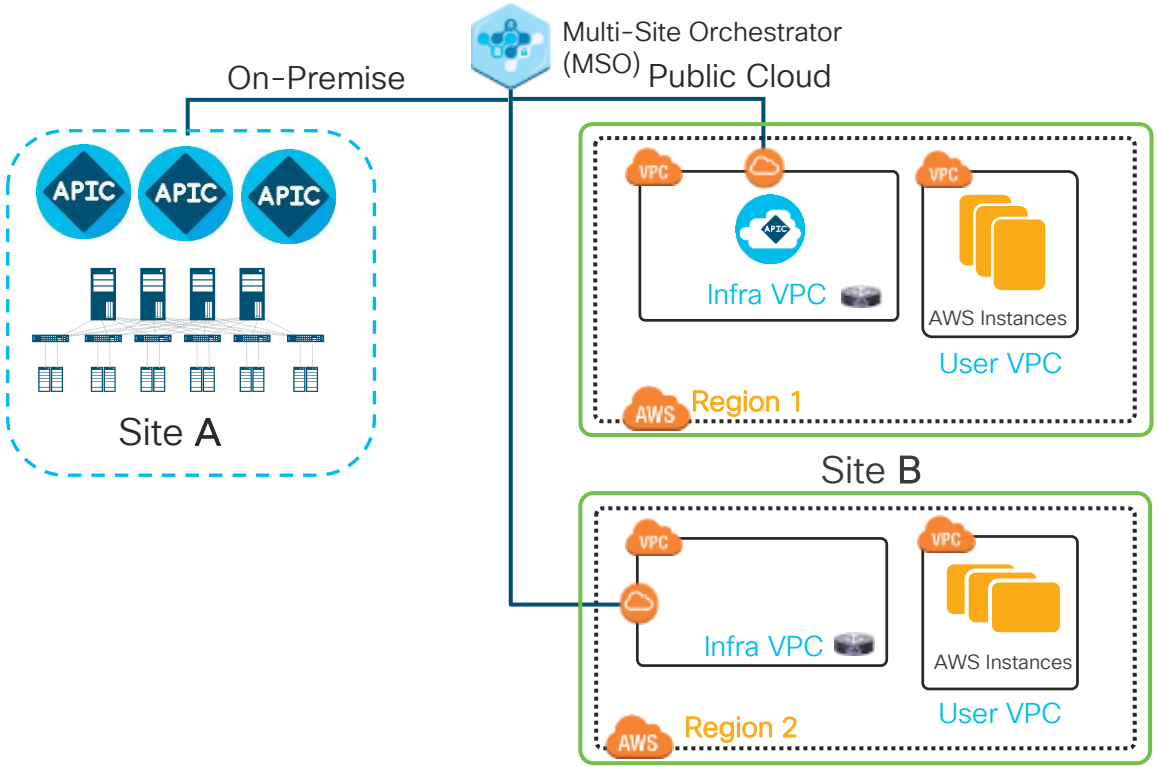
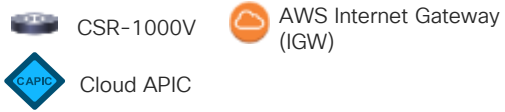
ACI Extension to AWS
Architecture



- Single or group of multiple regions in AWS represents an ACI site
- Each Region in AWS is similar to ACI POD in the cloud
- Cloud APIC will be spin up in the infra VPC at each site.



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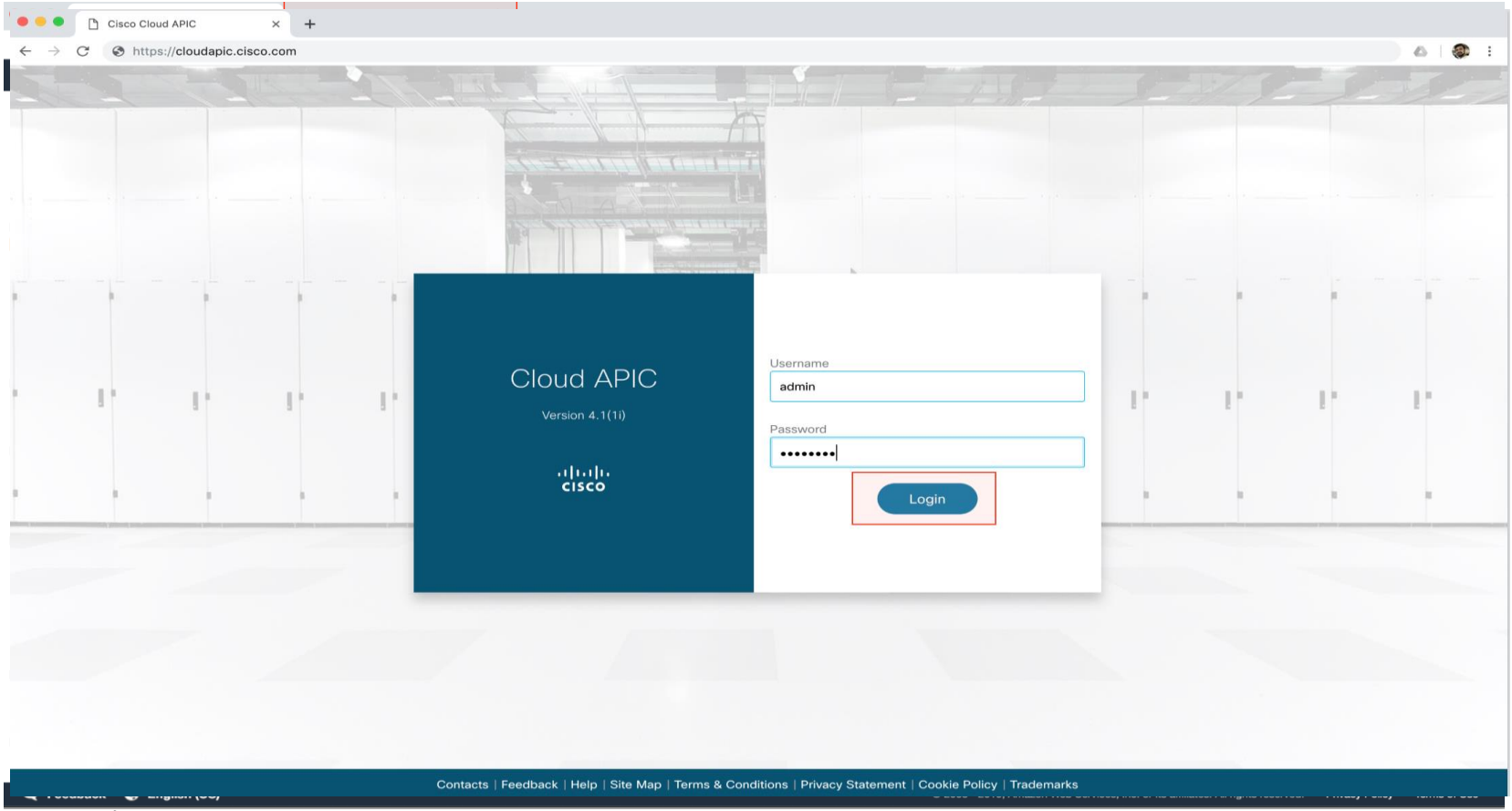
Cloud APIC

Cloud APIC Resources



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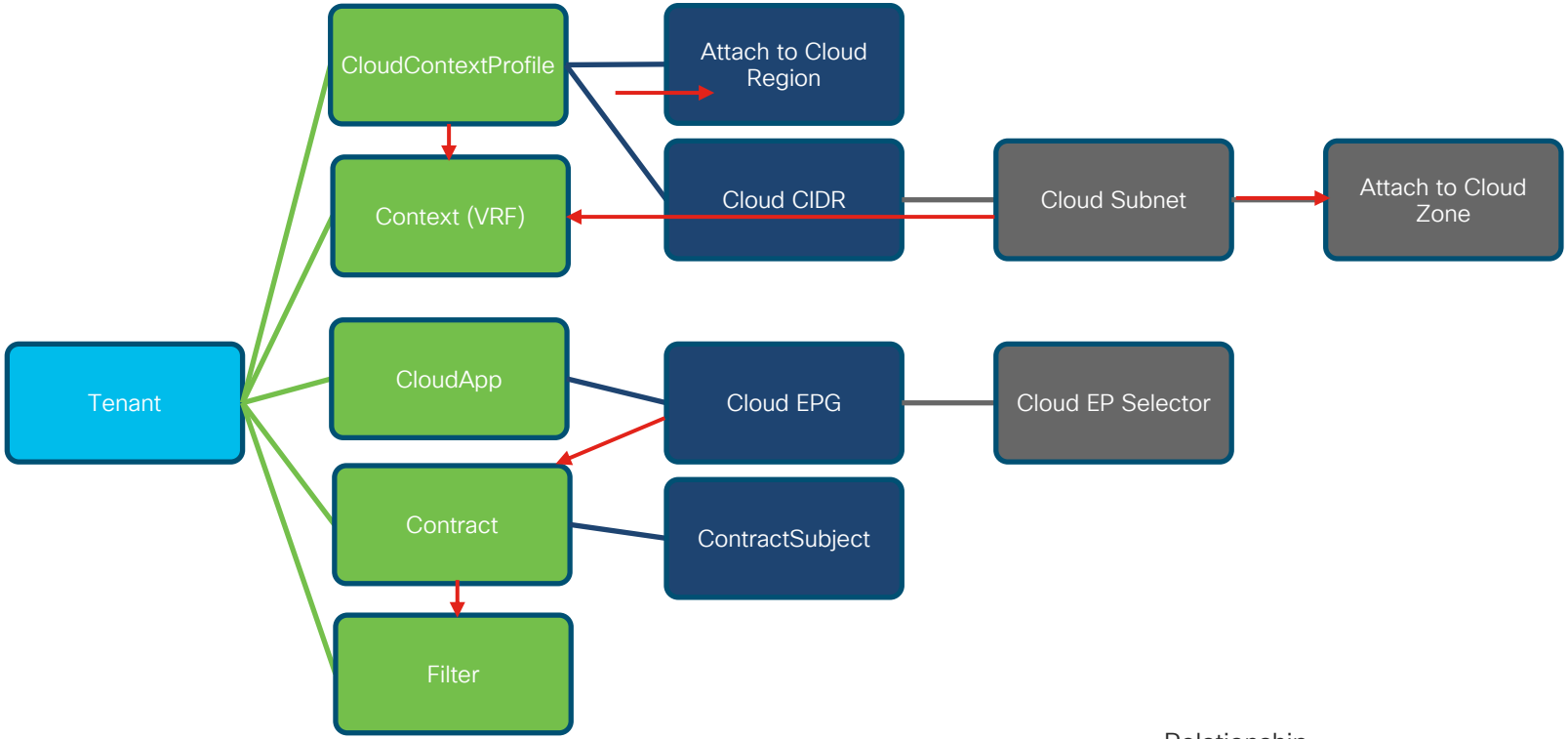
Demo:

cloud APIC Config and operations the old school way

This is what we will be configuring in the demo



Partial representation of the Cloud Object Model

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Programmability Options

ACI Network Programmability Scripting

{REST}

Direct API

Pros:

- Limitless options
- Any language/method

Cons:

- Raw API syntax
- Session Management
- Individual Atomic Actions

Software Development Kit

Pros:

- Language Wrapper of API
- Simplifies Syntax and Management

Cons:

- Availability
- Atomic API Interactions

Infrastructure-as-Code

Pros:

- Easy to consume modules
- Multi vendor support

Cons:

- Availability

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Demo:

cloud APIC Config and operations using Terraform

Summary & Resources

Summary & Resources

ACI Programmability Workshop
DEVNET-1236
ACI Terraform Workshop
DEVWKS-1334
ACI Programmability Learning Labs
http://cs.co/DevNet_ACI
Always-On ACI Sandbox
http://cs.co/ACI_SBX
ACI on DevNet
https://developer.cisco.com/aci
Code Samples
https://github.com/datacenter/aci
Cloud APIC Deployment
cloud APIC Walkthrough
Cloud APIC demo

REST API Documentation
http://cs.co/ACI_API
PyACI Documentation
https://github.com/datacenter/pyaci
Cobra SDK Documentation
https://cobra.readthedocs.io
ACI Ansible Documentation
http://cs.co/ansible_net
Terraform-ACI Provider and GO SDK
Terraform ACI Provider
ACI Go Client

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Q&A

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