

The background features a vibrant, abstract design with a color gradient from dark blue on the left to bright yellow and white on the right. The design consists of overlapping, wavy horizontal bands and a series of radiating lines that create a sense of motion and energy, resembling a stylized sunburst or a dynamic wave pattern.

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The bridge to possible

Explore Simplicity of Public Cloud Network Configuration

with Cloud Network Controller (formerly cAPIC)
and Nexus Dashboard Orchestrator (NDO)

Marcin Duma, Delivery Architect
Karol Okraska, Delivery Architect

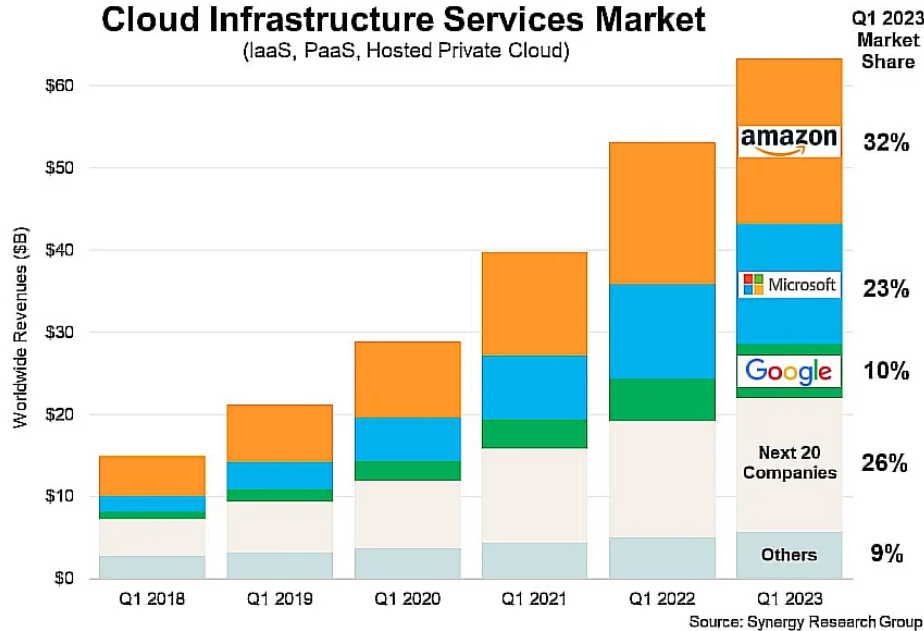
Agenda

- Cloud growth and challenges
- ACI Multicloud overview
- ACI Multicloud deployment
- Lab details

Cloud growth and challenges



Cloud Services Market

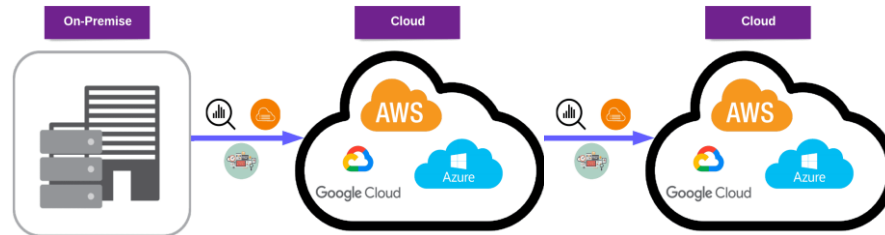


<https://www.gartner.com/en/newsroom/press-releases/2023-11-29-gartner-says-cloud-will-become-a-business-necessity-by-2028>
<https://www.cloudzero.com/blog/cloud-computing-market-size/>

- 20.4% growth 2023-2024
- 3 major players and many new coming
- End-user spending reaching \$678 billion in 2024 projected to exceed \$1 trillion in 2027.
- Gartner predicts that by 2027, more than 70% of enterprises will use industry cloud platforms, up from less than 15% in 2023

Multicloud networking challenges

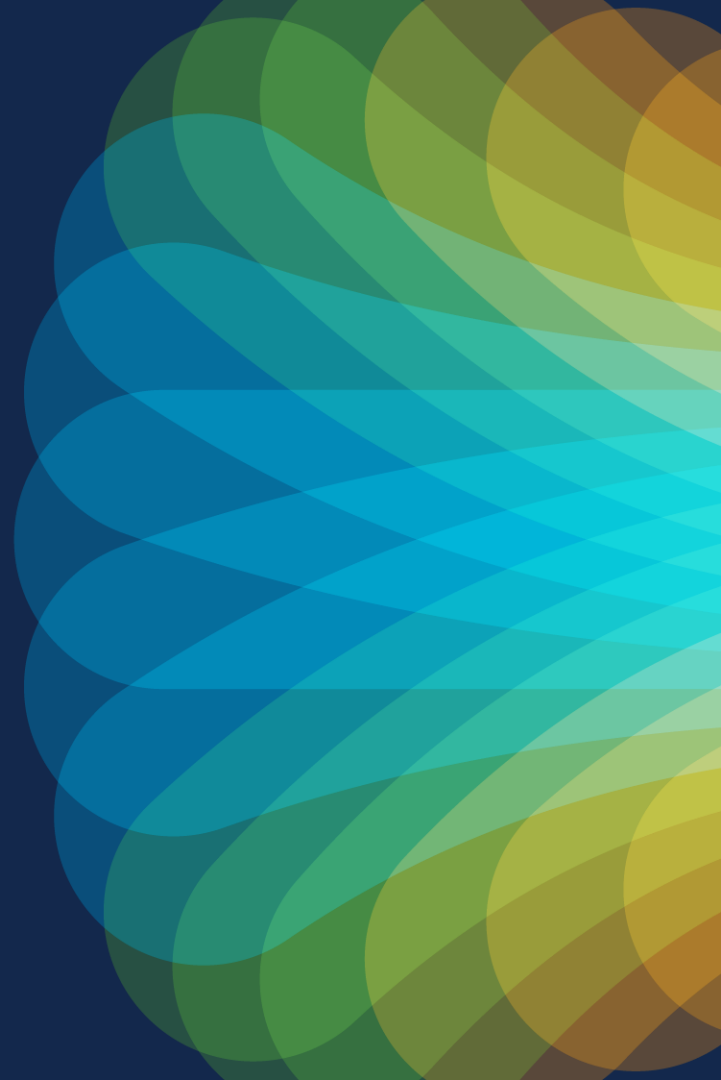
- Data Privacy and Security (visibility to traffic)
- Multiple Cloud Management (consistency)
- Complexity (VNET, VPC, TGW, AZ, etc)
- Network configuration and secure access (zero trust)
- Migration



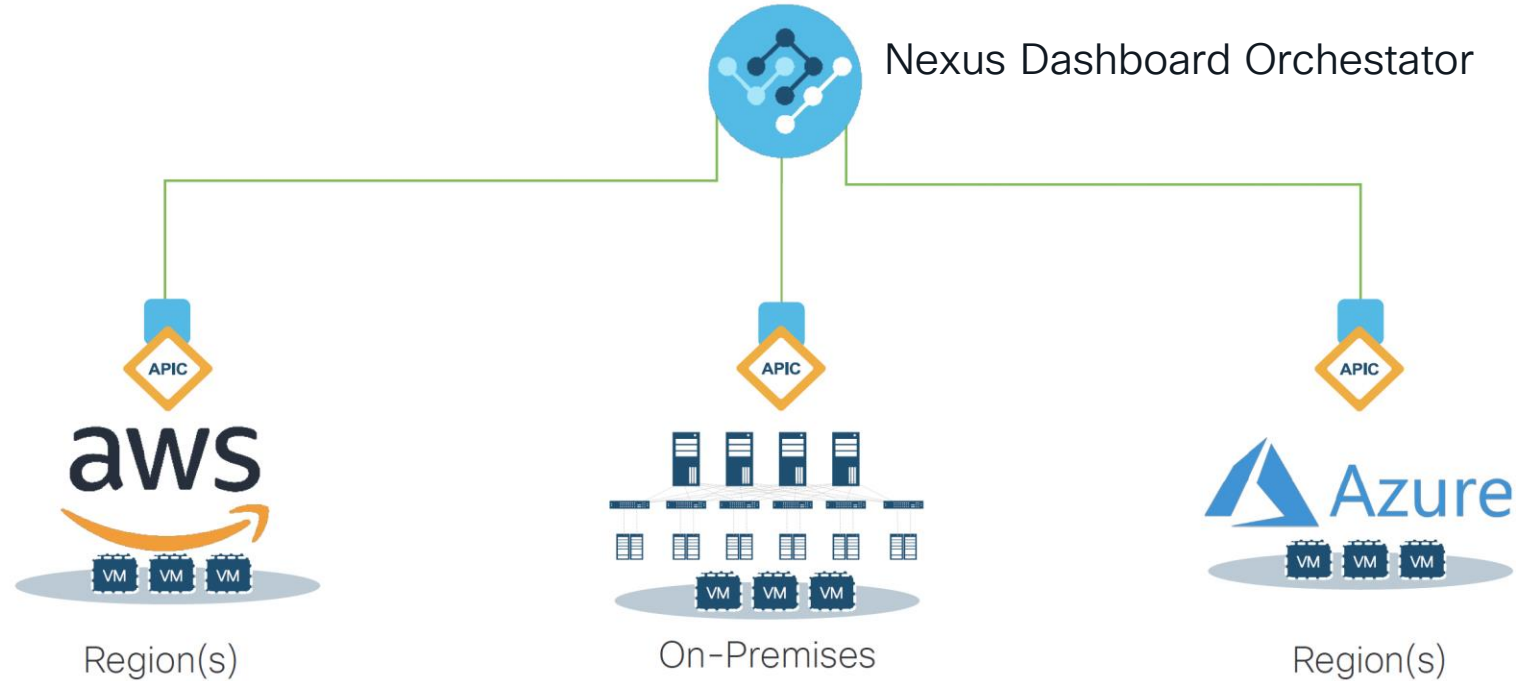
Is there a way to
use known tools
for network
configuration in
Public Clouds?



ACI Multicloud overview



ACI multicloud solution

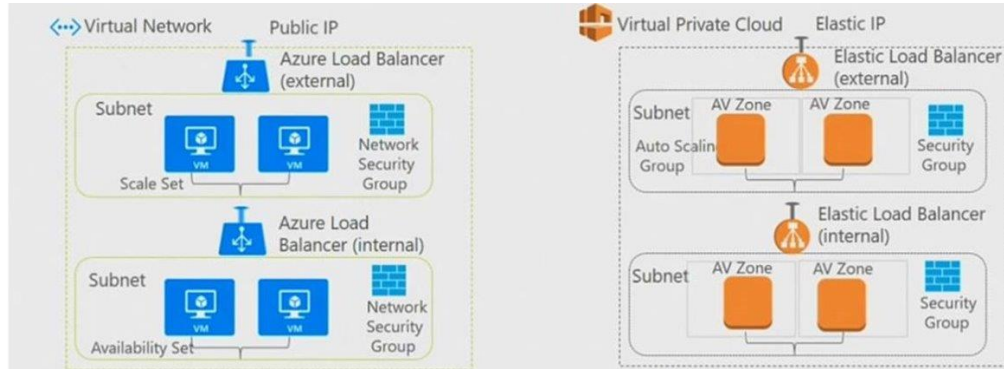


ACI multicloud solution

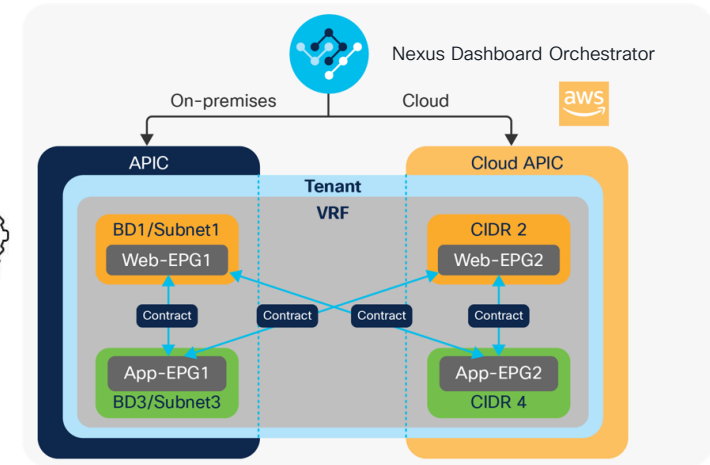
- Plenty of different providers, new one to come
- Each cloud has it's own logic and own naming



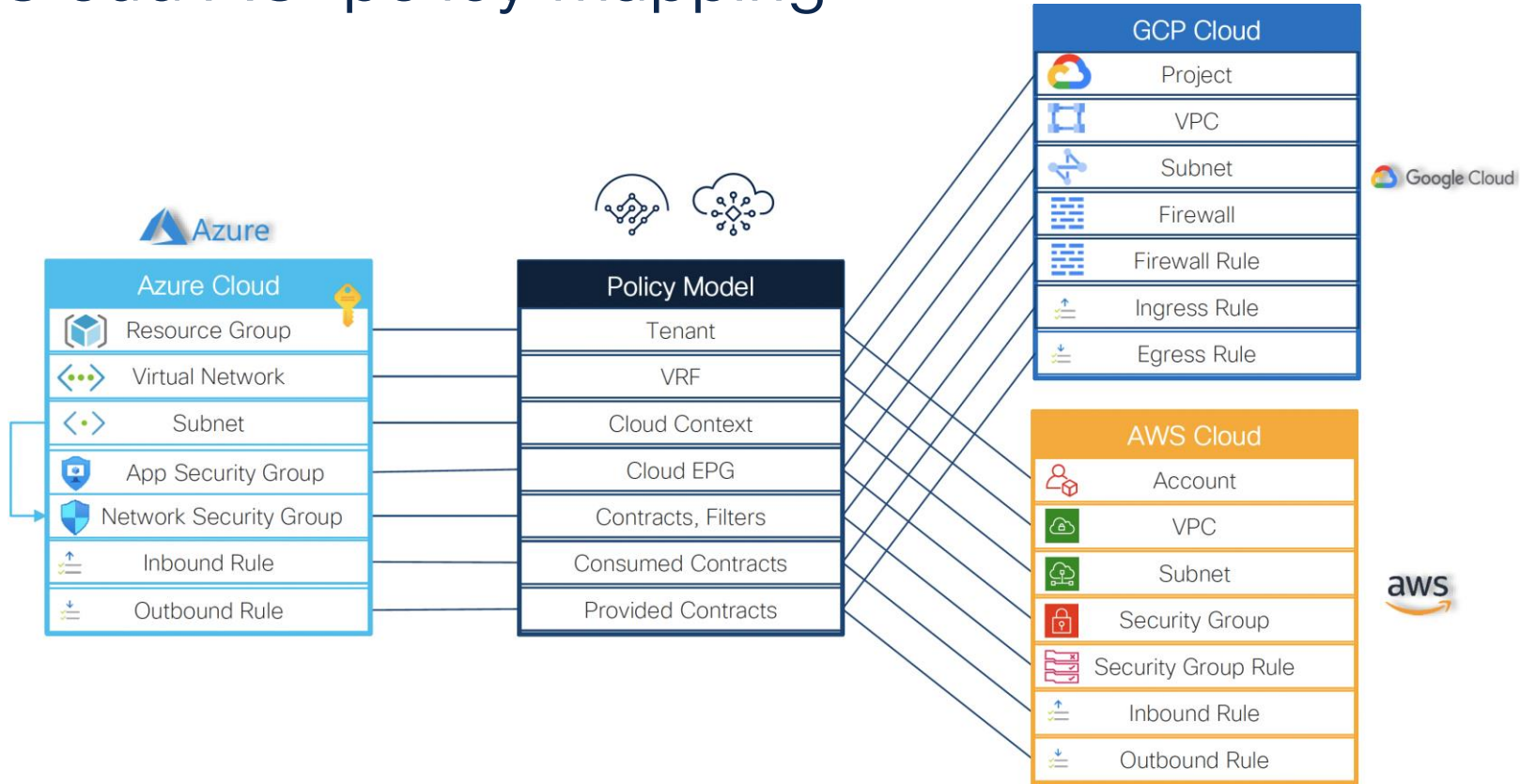
Transform this



In to unified across providers



Cloud ACI policy mapping



ACI multicloud key features

- Easy and automated connectivity and routing (on-prem and cloud)
- Secure multicloud connectivity with segmentation and network policy
- Single interface for simplicity
 - Regardless of location (cloud, on-prem)
- Service integration
 - Third-party or native load balancer or firewall device
- Visibility and troubleshooting
 - Endpoint monitoring (on-prem and cloud)
 - Single pane of glass for monitoring and management of route tables, subnets, peering, attachments, endpoints, etc.

ACI Multicloud deployment



ACI multicloud architecture components



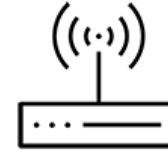
Cisco Cloud Network Controller

- Deployed in each Cloud
- Local Cloud configuration and policy translation
- Cloud Router configurations
- Northbound REST interface
- Endpoint discovery in the cloud



Cisco Nexus Dashboard orchestrator

- Multi-site policy definition
- Visibility
- End to end security
- Consistency



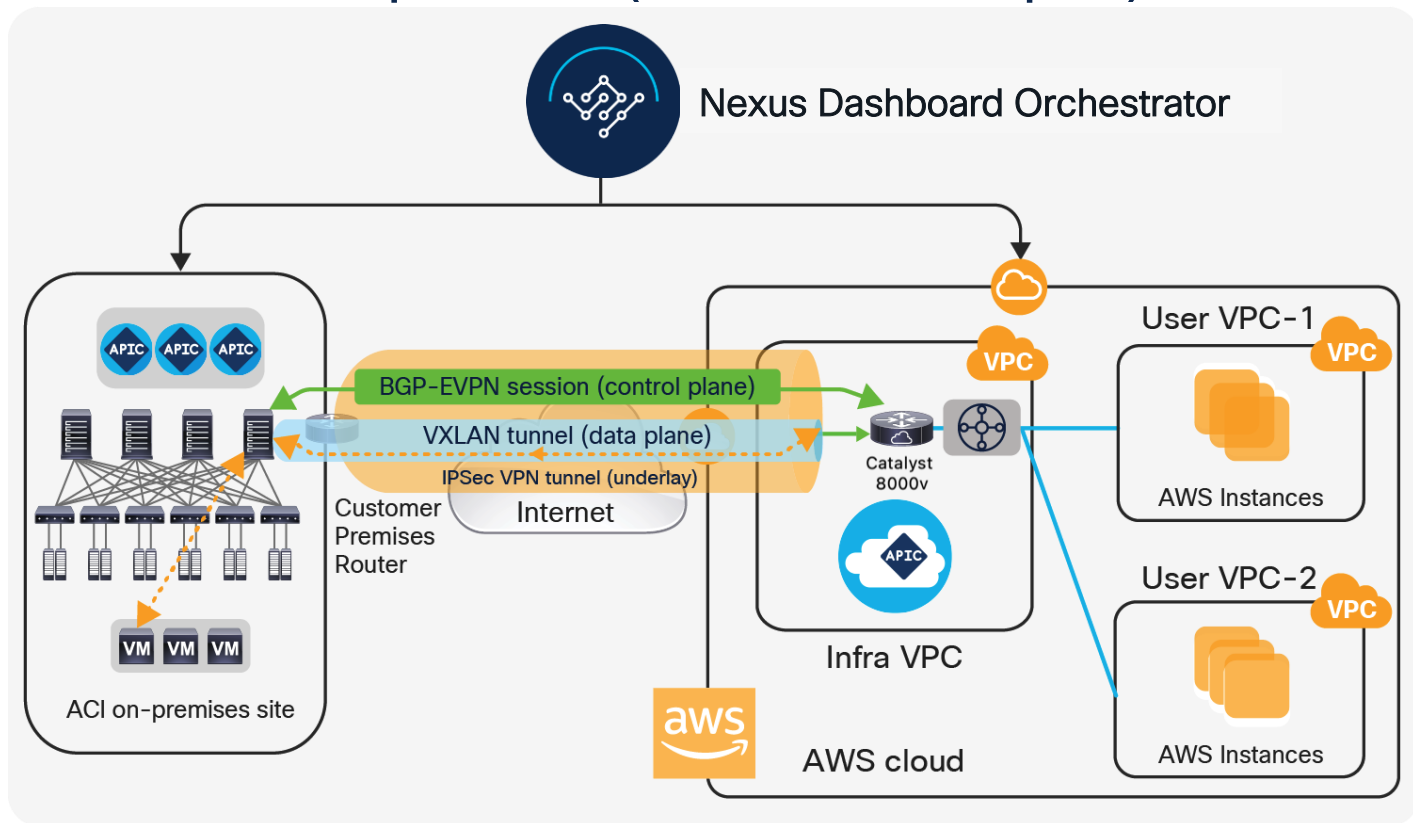
Cisco Catalyst® 8000V or cloud-native router

- IPSec tunnels termination
- Inter-site traffic flow

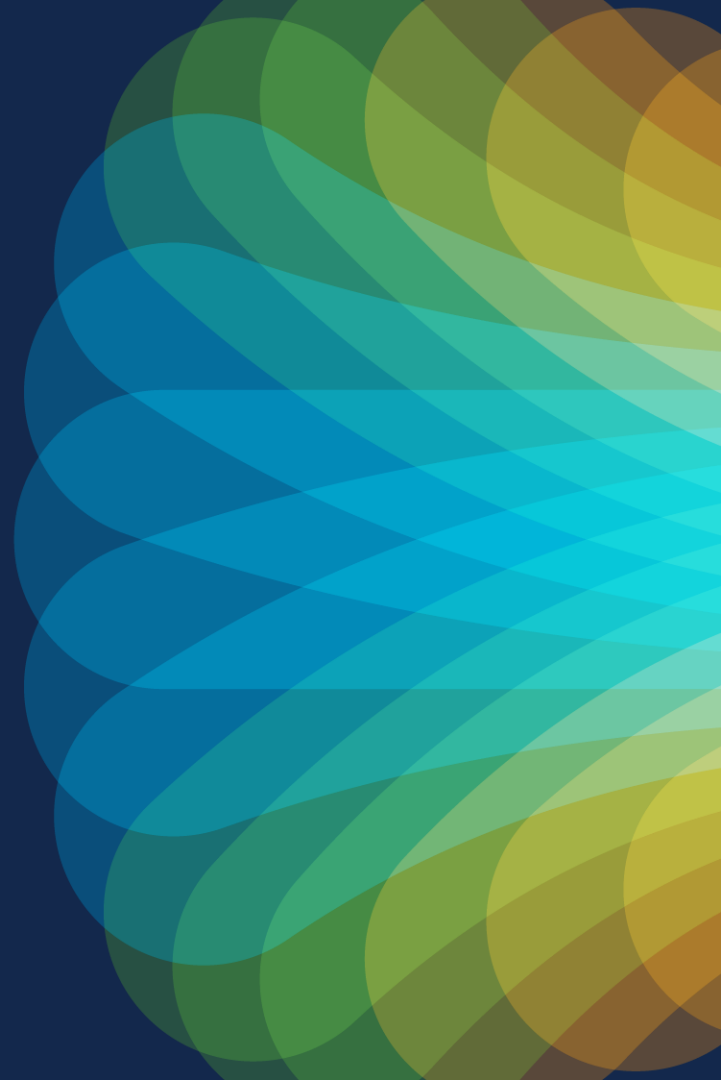
Cloud ACI deployment

1. Deploy Nexus Dashboard cluster (on-prem or in Cloud)
2. Deploy Cloud Network Controller(CNC) in each managed cloud
 - Template based deployment for both Azure and AWS
3. Perform region management in CNC
4. Register sites to Nexus Dashboard and Orchestrator
5. Configure sites for multisite (almost fully automated)
6. Create logical configuration of Tenants, EPGs, contracts, etc

Cloud ACI deep dive (AWS example)

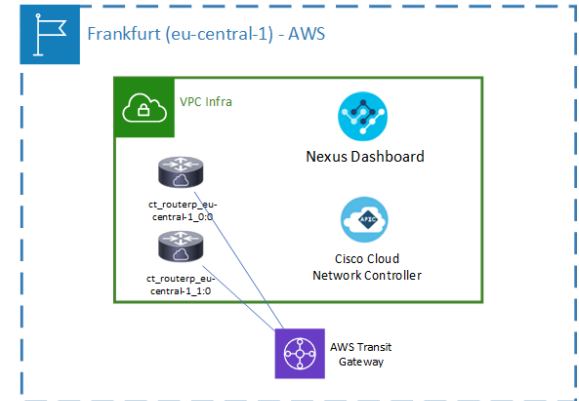
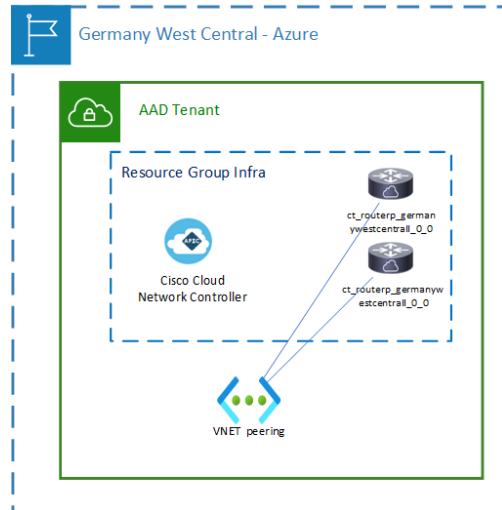


Lab details



Lab details

- ACI Multicloud lab with AWS and Azure sites
- All components hosted in Public Clouds
- Initial Lab topology



Lab tasks

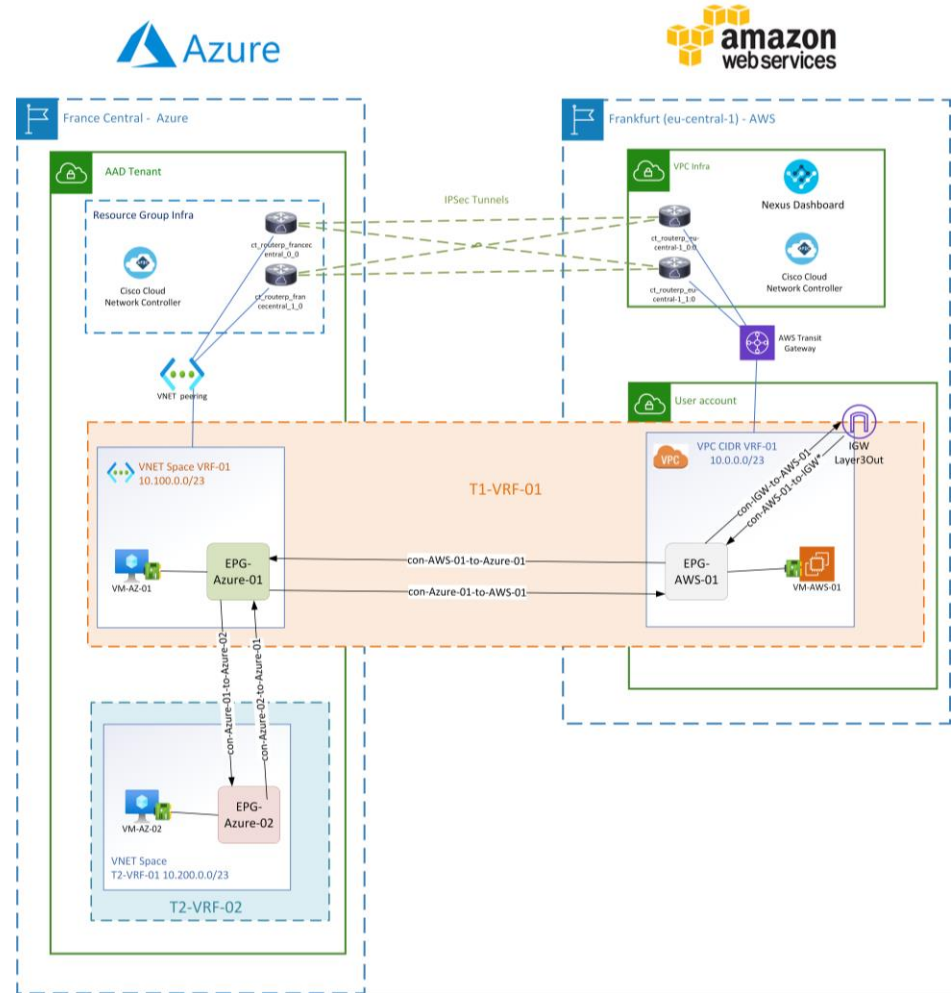
1. Nexus Dashboard Site onboarding
2. Multisite configuration between Azure and AWS
3. Tenant creation and trust configuration
4. Use-cases configuration
 1. Stretched VRF
 2. Internet Gateway
 3. Inter-Tenant Routing (bonus)

Configuration and traffic flow verification.

Lab topology final

To be configured:

- 2 Tenants
 - Stretched
 - Azure only
- 3 EPGs
- Contracts
- EC2/VMs

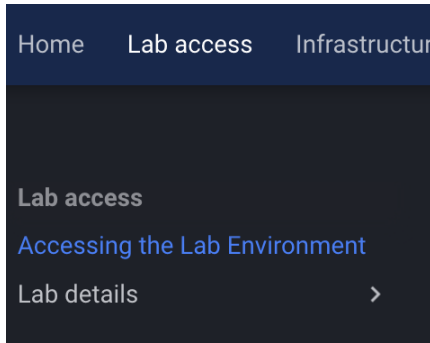


Lab guide and lab details

Lab guide – online:




<http://labguides-wil.s3-website.eu-central-1.amazonaws.com/ltrcld-2557/>

Lab access details – one user – one POD



Attendee Name	POD ID	POD access details
Student 1	POD1	Lab Details POD1
Student 2	POD2	Lab Details POD2
Student 3	POD3	Lab Details POD3

Lab guide and lab details

 **LTRCLD-2557 Explore Simplicity of Public Cloud Network Configuration with Cloud Network Controller and Nexus Dashboard Orchestrator (NDO)**   Search

Home Lab access Infrastructure configuration ACI to Public Cloud Object mapping Tenant configuration Use-cases Appendixes 1

Welcome to CiscoLive 2024 - Instructor Lab about ACI Multicloud

Speakers:

Karol Okraska, CX Delivery Architect, Cisco Systems, Inc.

Marcin Duma, CX Delivery Architect, Cisco Systems, Inc.

Cisco ACI support of Public Cloud infrastructure

Cisco Cloud Network Controller (formerly Cloud APIC) provides enterprises with networking tools necessary to accelerate their hybrid-cloud and/or multicloud journey.

Utilizing cloud-native constructs, the solution enables automation that accelerates infrastructure deployment and governance, and simplifies management to easily connect workloads across multicloud environments. The Cisco Cloud Network Controller vision is to support enhanced observability, operations, and troubleshooting across the entire environment.

Cisco Cloud Network Controller enables:

- Seamless connectivity for any workload at scale across any location
- Operational simplicity and visibility across a vast multisite and multicloud data-center networks
- Easy L4-7 services integration

2

Table of contents

Cisco ACI support of Public Cloud infrastructure

Cisco Cloud Network Solution components:

Topology

Lab agenda

1. Infrastructure verification - login and access
2. Site onboarding in Nexus Dashboard
3. Multisite infrastructure configuration
4. Multisite configuration check
5. Tenant creation and AWS Account Trust configuration
6. Three(3) common use-cases configuration and verification
 - Stretched VRF across Public Clouds with site-local EPGs
 - Internet Gateway configuration in AWS
 - Inter-Tenant routing (bonus)

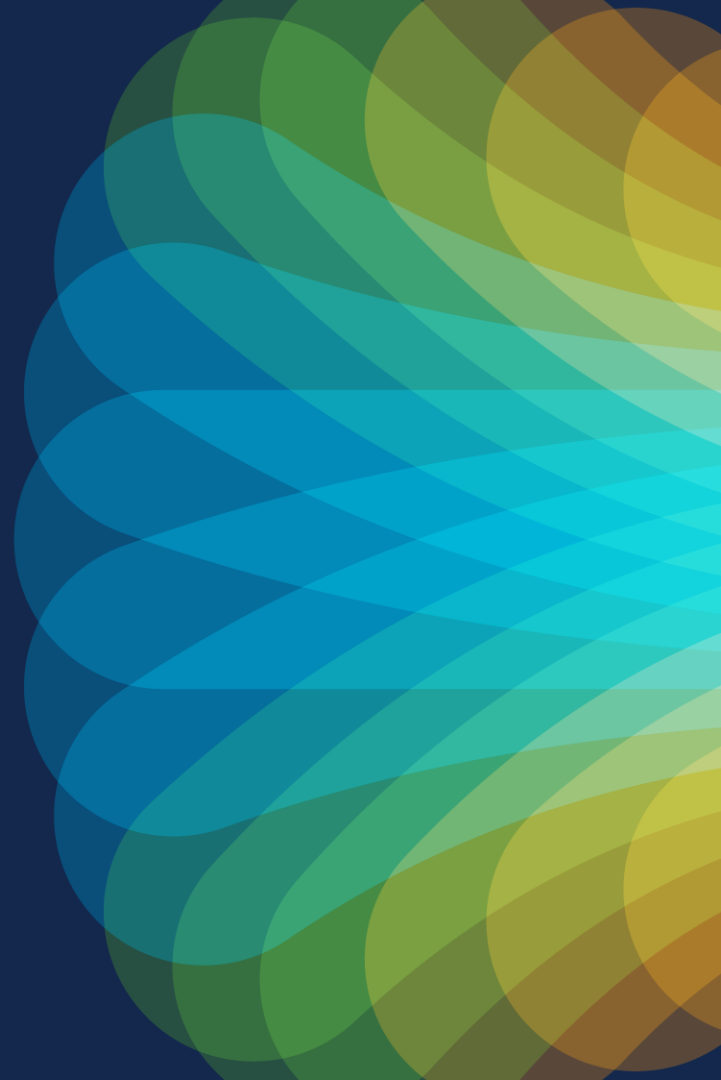
3



The bridge to possible

Thank you

CISCO *Live!*



The background features a vibrant, multi-colored abstract design. On the left, there are horizontal, wavy bands of color in shades of red, orange, yellow, and green. On the right, a bright white light source emits a series of sharp, radiating lines in various colors, including blue, green, and yellow, creating a sunburst effect.

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