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The bridge to possible

Cisco Cloud Network Controller

Hybrid Multi-Cloud Infrastructure and Policy Automation enabler

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BRKDCN-2653

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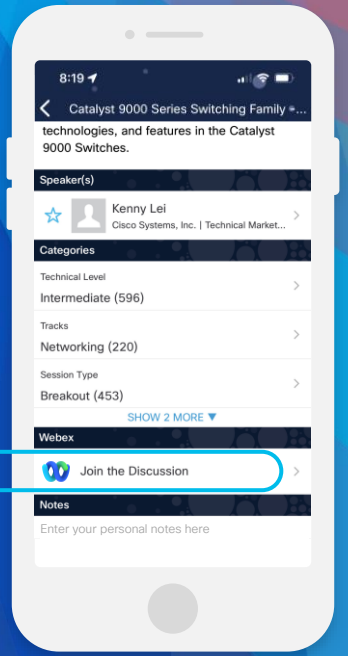

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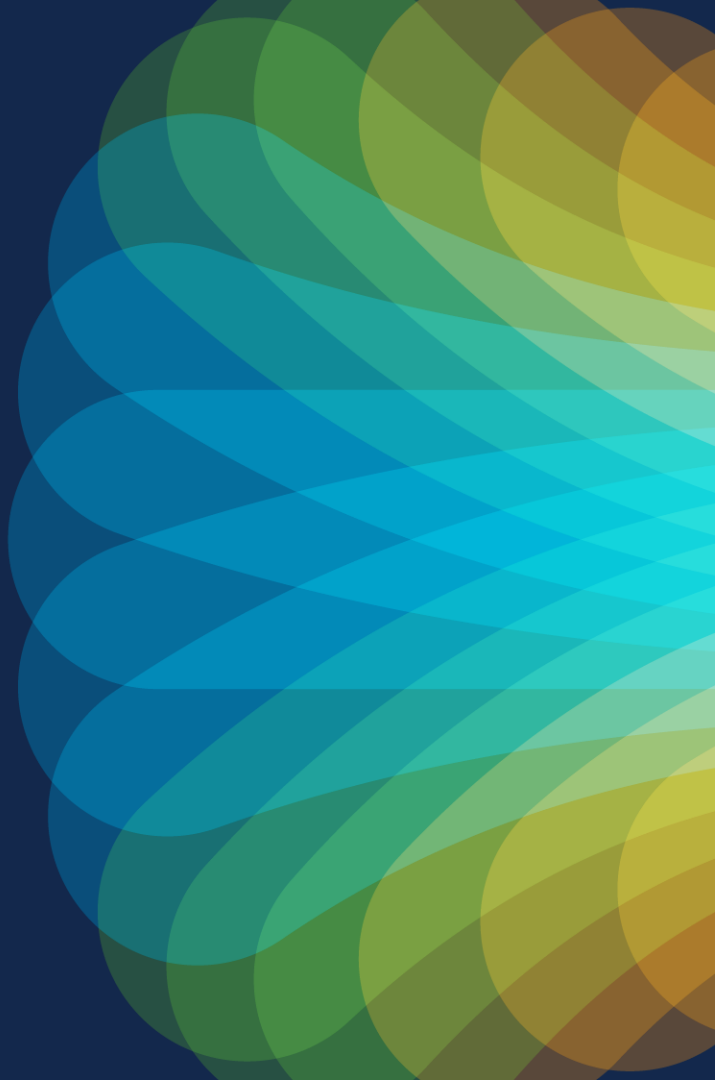
Agenda

- Hybrid Multi-Cloud Requirements and Challenges
- What's Cisco Cloud Network Controller
- Hybrid Multi-Cloud Solution
- Demo

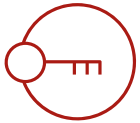
Hybrid Multi-Cloud Challenges



Hybrid Multi-Cloud Networking – The requirements

Connectivity

Connecting applications across on-premises, public clouds and edge networks



Zero Trust and security

Maintaining a consistent security posture that is agnostic to where app and clients are located

Visibility

Observing and analyzing connectivity, traces, logs, and metrics across heterogeneous networks

Application networking

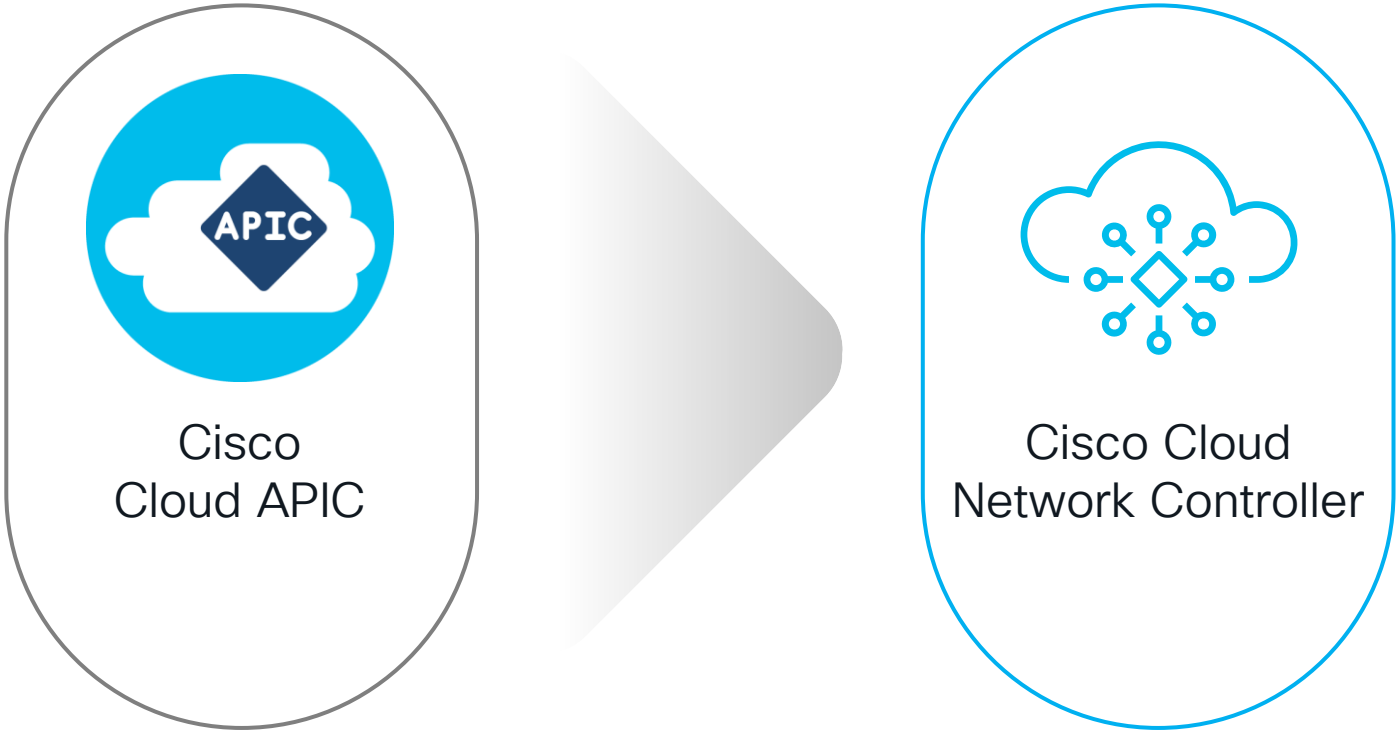
Enabling application intent to dynamically drive network behavior

The network-admin challenge

NX-OS	ACI	aws	Azure	Google Cloud
Separate Infrastructure + VXLAN	Tenant	Account	Subscription/ Resource Group	Account/Project
Data Center	Site/Pod	Region	Region	Region
VRF	VRF	VPC	VNet	VPC
VLAN	Bridge Domain/ Subnet	CIDR/Subnet	Subnet	Subnet
VLAN Tag	EPG	Security Groups	Application/Network Security Groups	Firewall
Access-list (ACL)	Contracts & Filters	Security Group Rules	Security Rules	Firewall Rules

What's Cisco Cloud Network Controller

Cisco Cloud Network Controller



Cisco Cloud Network Controller feature overview

Cloud networking

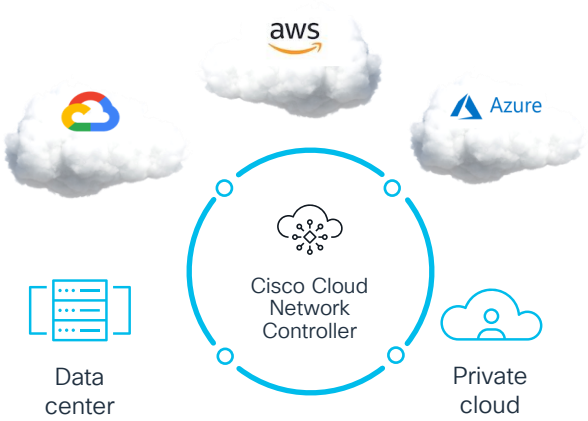
- Intra-Cloud: TGW, VNET peering
- Inter-Cloud: C8Kv automation
- Connectivity: IPsec, direct connect, express route

Visibility

- View and connect to brownfield VPC networks
- Inventory and topology view

L4-L7 services

- Automate service insertion and service chaining (load balancers, firewalls, ...)



Segmentation

- Extend segments from on-premises to cloud
- Extend segments from cloud to cloud
- Security group rule management

Support on Public

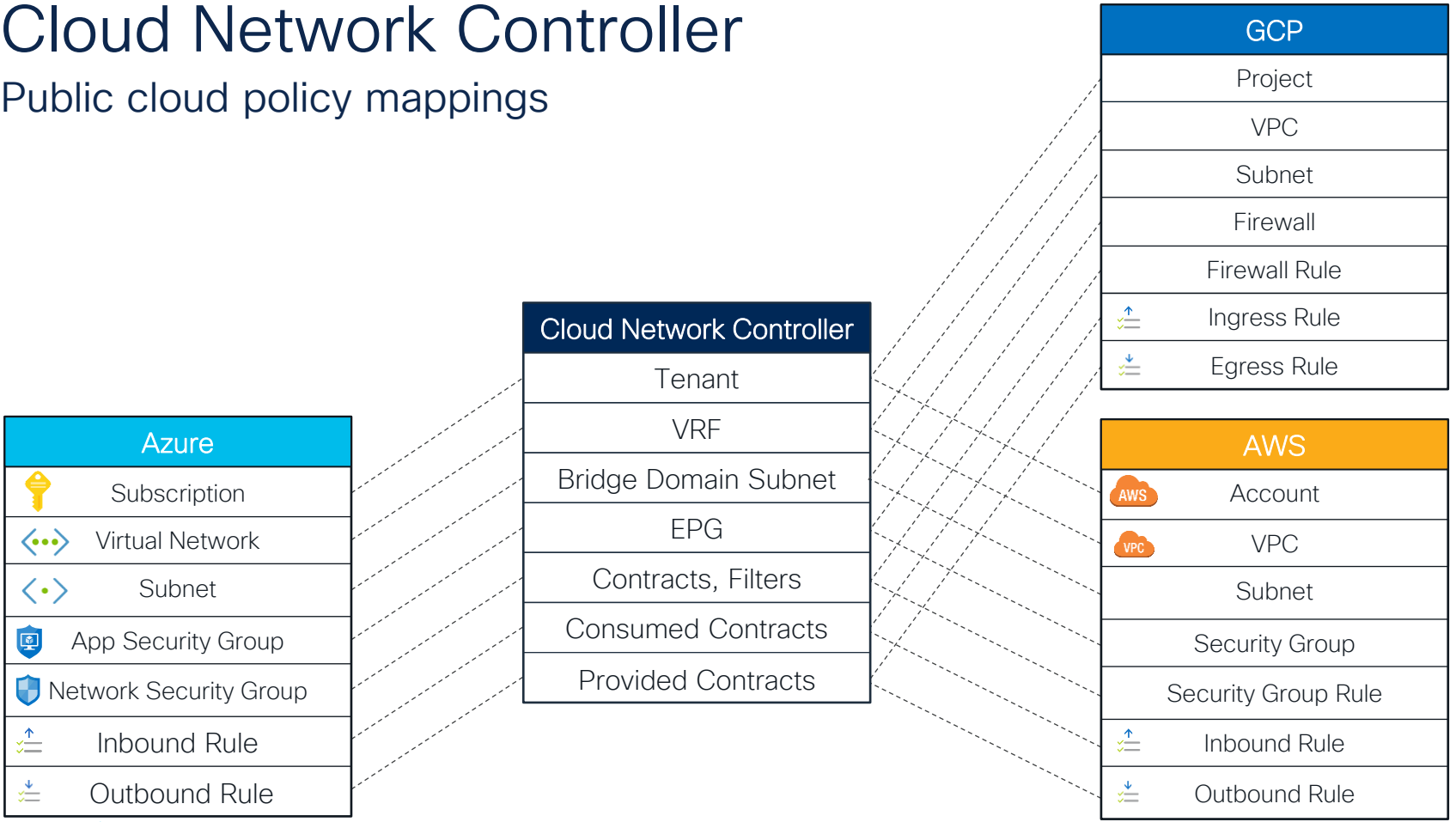
- AWS, Azure, Google Cloud

Open APIs

- Enable automation using Terraform and Ansible

Cloud Network Controller

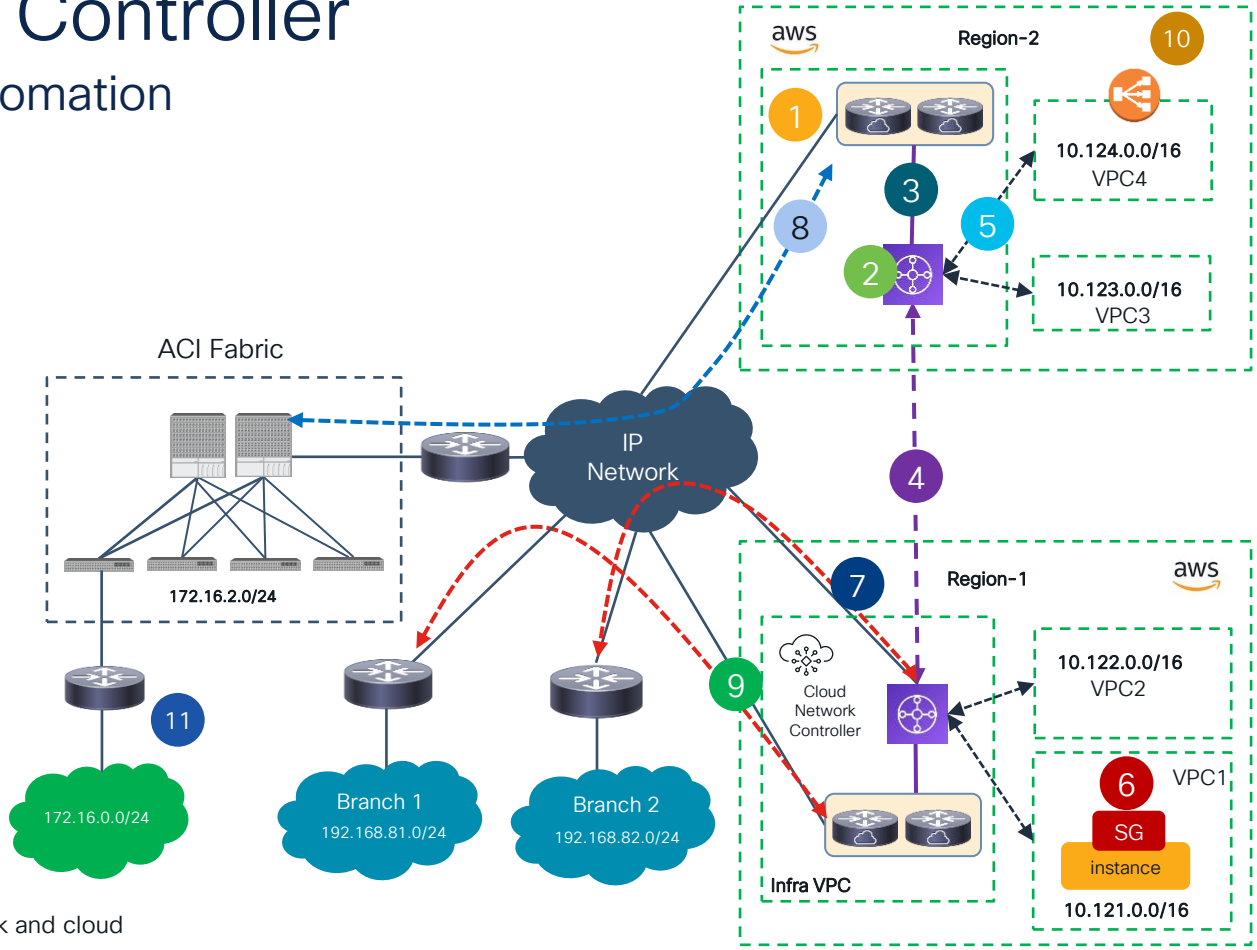
Public cloud policy mappings



Cloud Network Controller

Network and Policy Automation

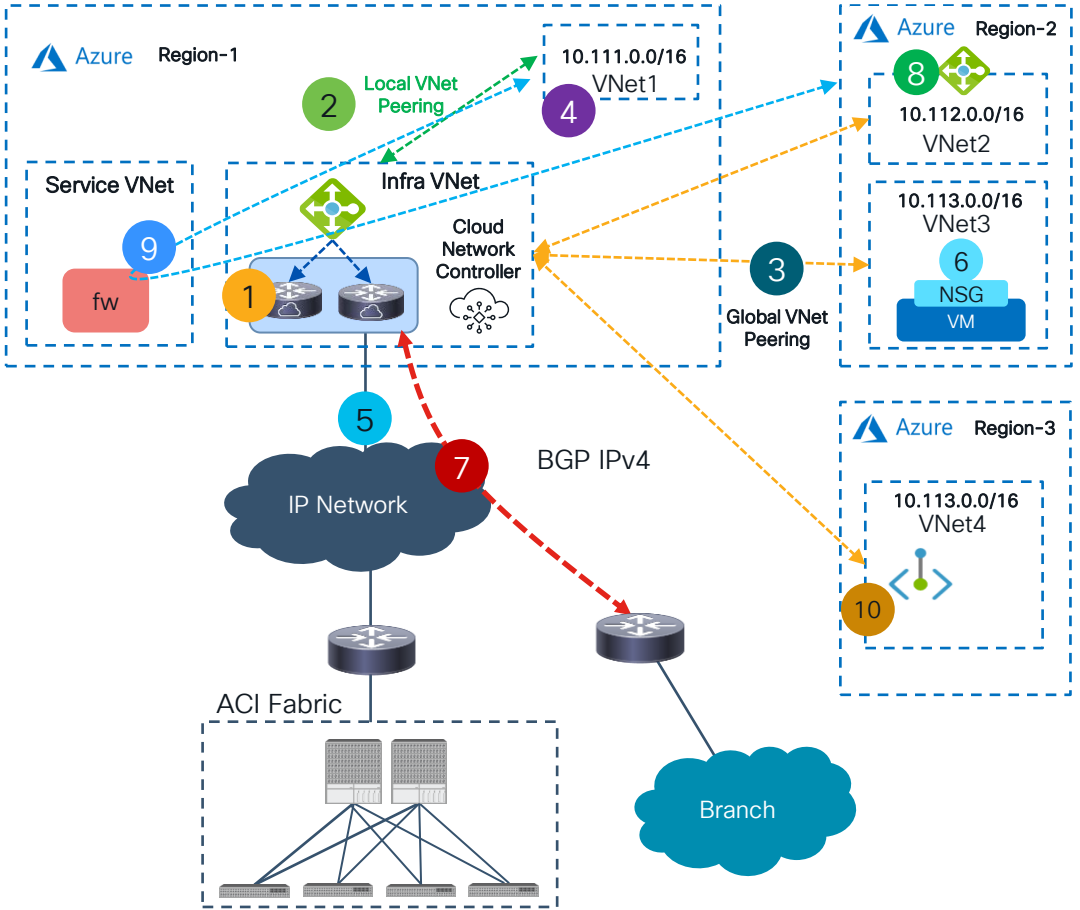
1. Cisco Cloud Router (C8000V) lifecycle management and configuration
2. Transit Gateway (TGW) creation
3. TGW Connect Tunnel
4. TGW Inter-Region Peering
5. VPC TGW Attachment
6. Security Group, Endpoint discovery
7. TGW VPN Attachment (TGW External Networking)
8. BGP EVPN and VXLAN Tunnel
9. IPsec and BGP for branch connectivity
10. Application Load Balancer automation
11. Route propagation between external network and cloud



Cloud Network Controller

Network and Policy Automation

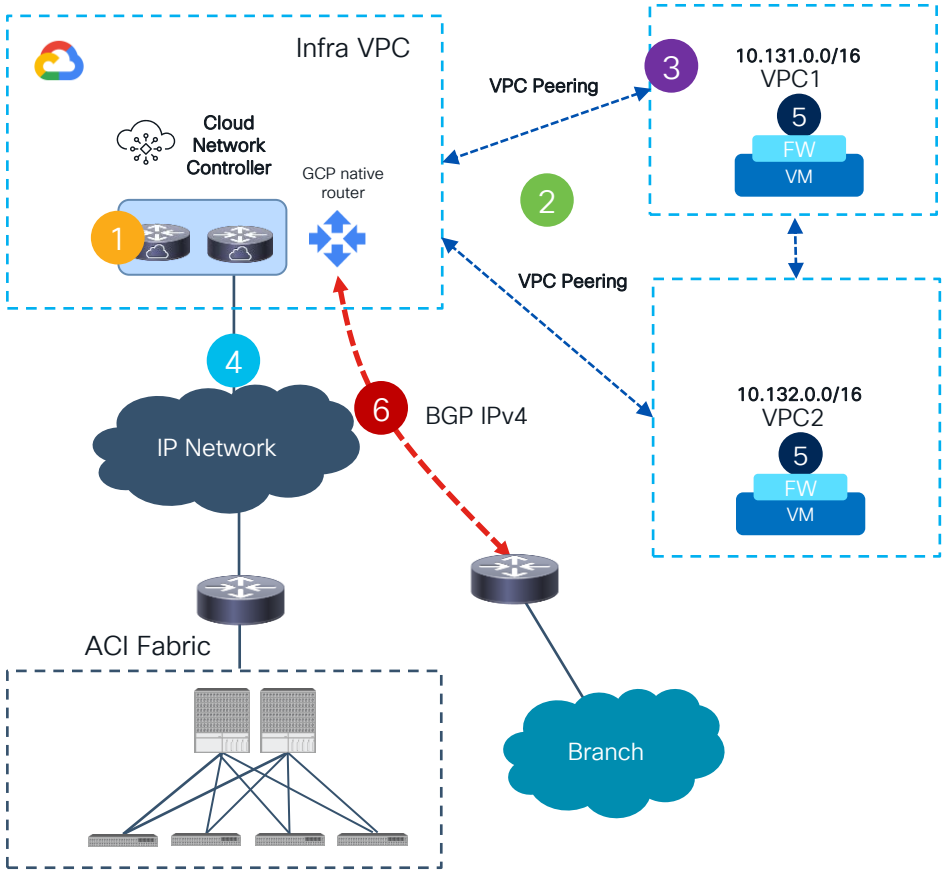
1. Cisco Cloud Router (C8000V) lifecycle management and configuration
2. Local VNet Peering
3. Global VNet Peering
4. Route Tables on VNets
5. BGP EVPN and VXLAN Tunnel
6. NSG and ASG, Endpoint discovery
7. IPsec and BGP for branch connectivity
8. Application Gateway and Load Balancer
9. Traffic redirection for firewall insertion
10. Private Link, Private Endpoint Automation



Cloud Network Controller

Network and Policy Automation

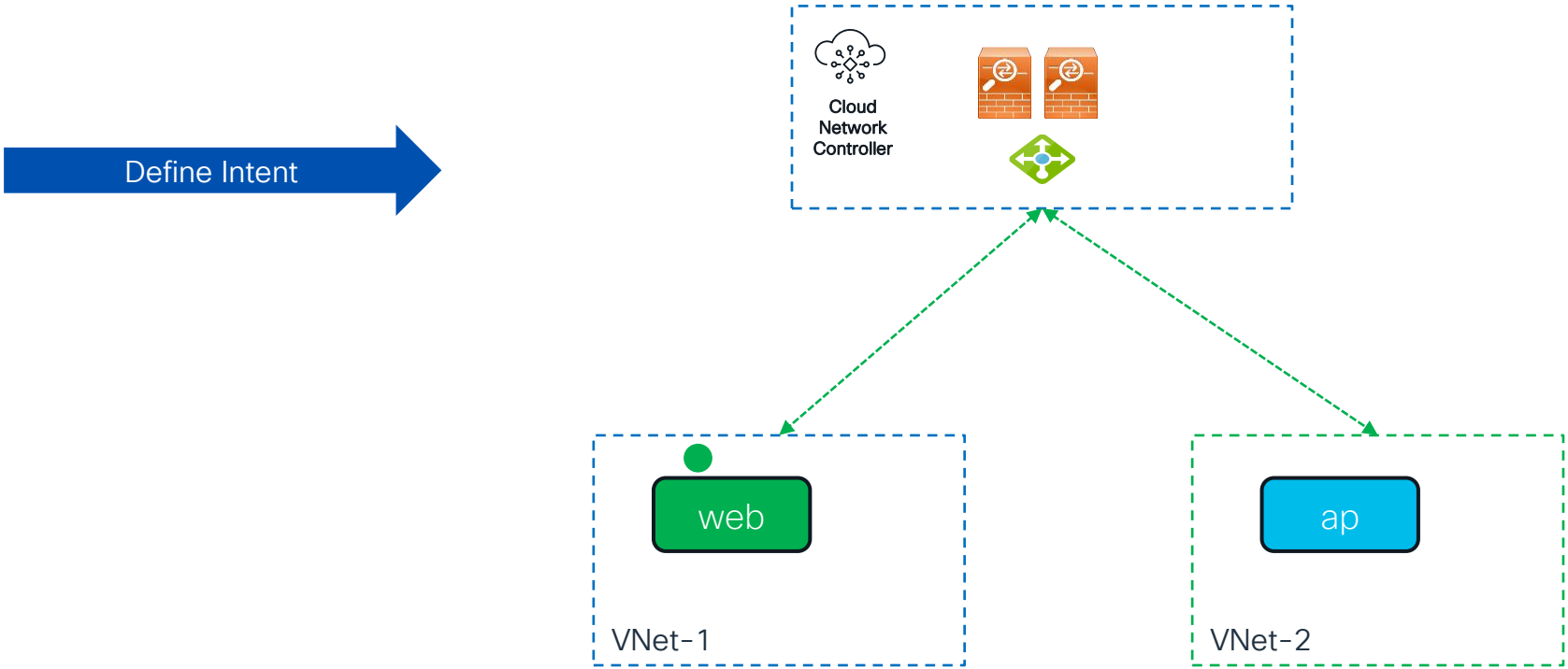
1. Cisco Cloud Router (C8000V) lifecycle management and configuration
2. VPC Peering
3. Route Tables - VPC
4. BGP EVPN and VXLAN Tunnel
5. FW Rules, Endpoint discovery
6. IPsec and BGP for branch connectivity



Cloud Network Controller automates and simplifies all cloud network tasks

Cloud Network Controller

Seamless network service insertion

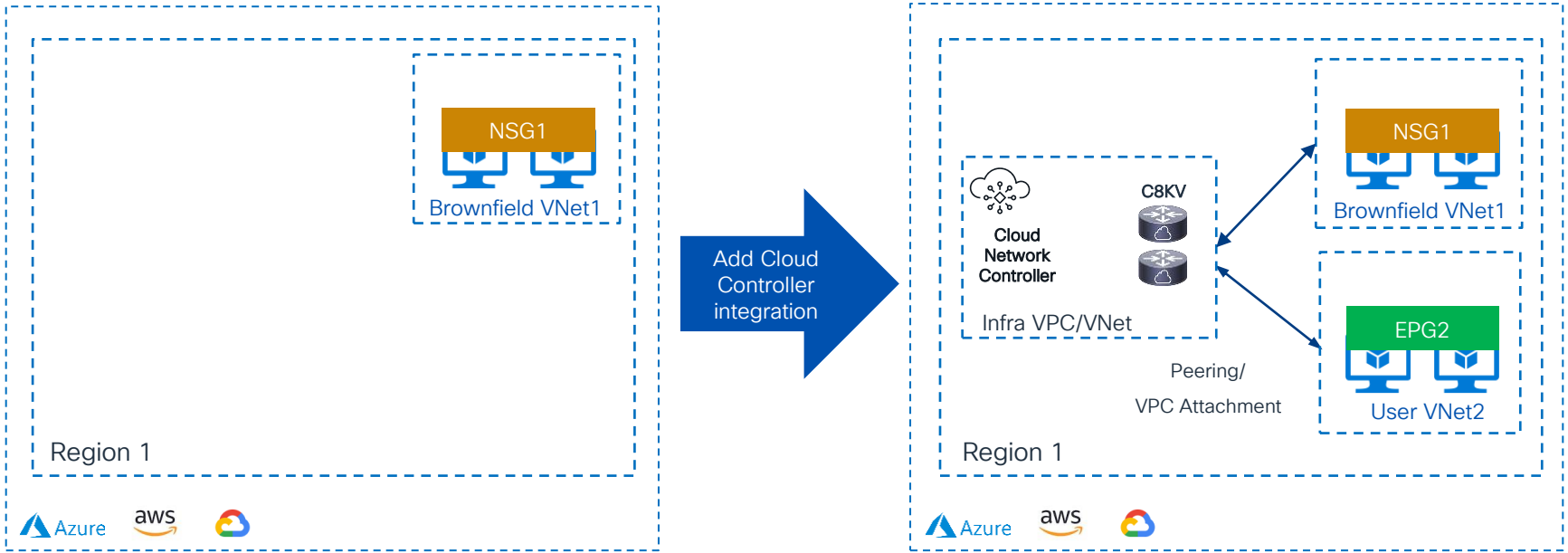


Cloud Network Controller

Brownfield import

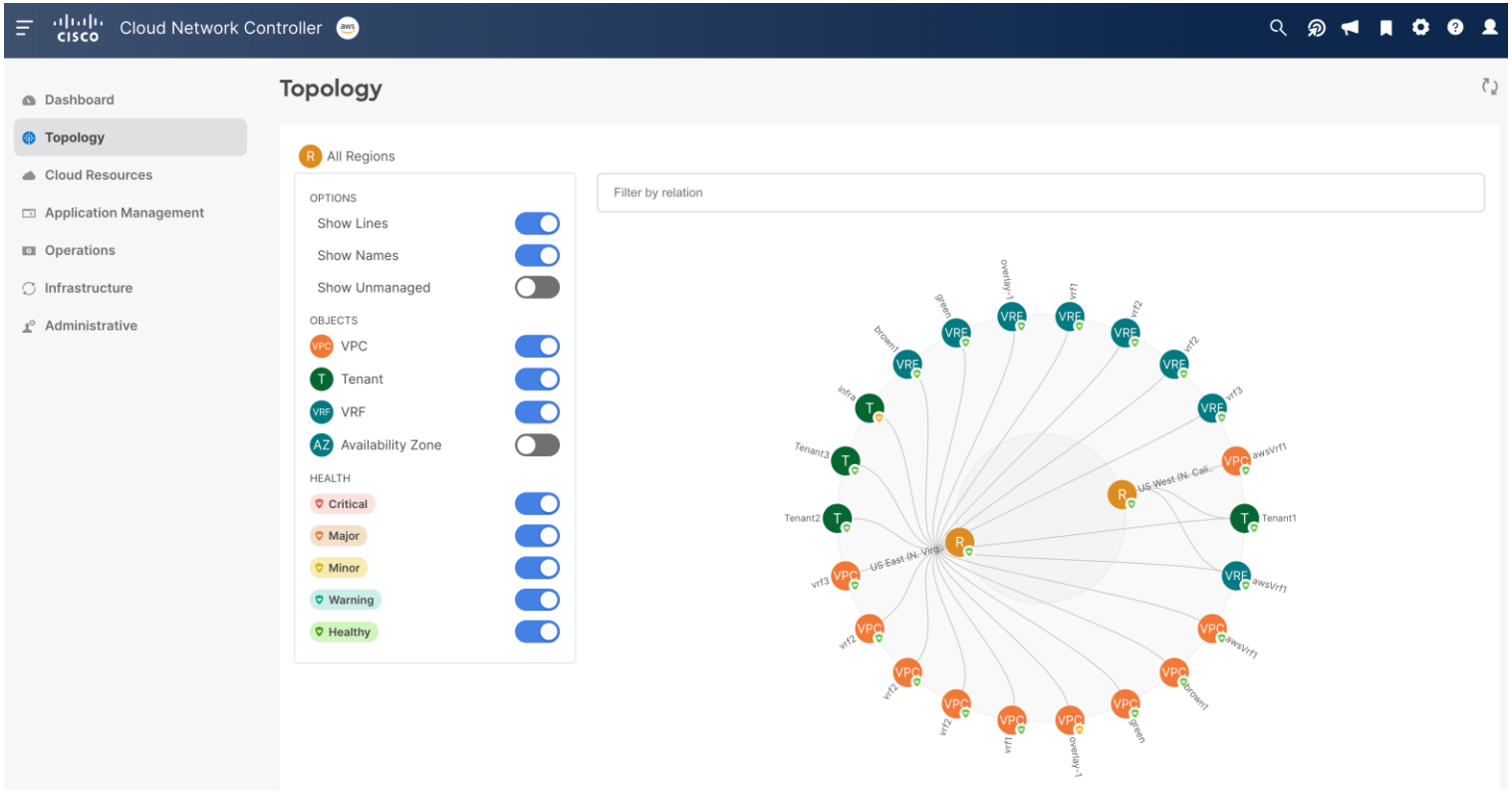
Before: Existing brownfield

After: Brownfield can talk to greenfield



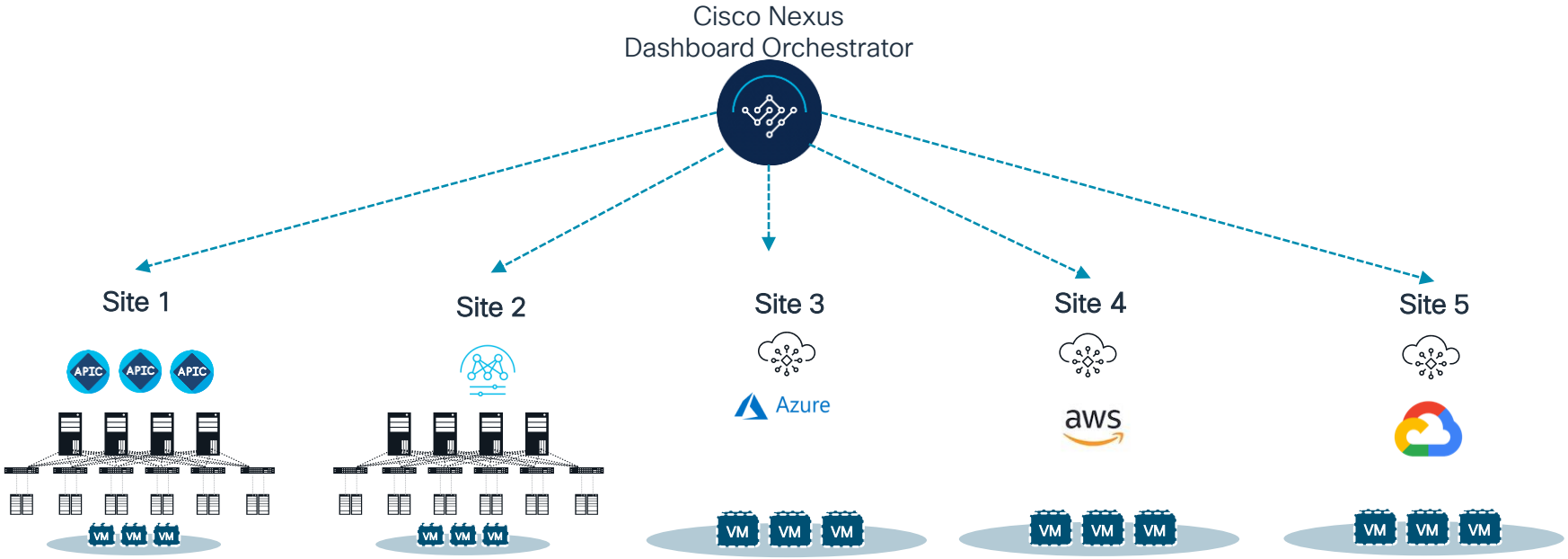
Cloud Network Controller

Visibility



Hybrid Multi-Cloud Solution

Hybrid Multi-Cloud solution overview



- Consistent Network and Policy
- Secure Automated Connectivity
- Single Point of Orchestration
- Secure Automated Connectivity
- Cloud only (Multi-Cloud)

Hybrid Multi-Cloud solution components

Cisco Cloud Network Controller

Catalyst 8000v

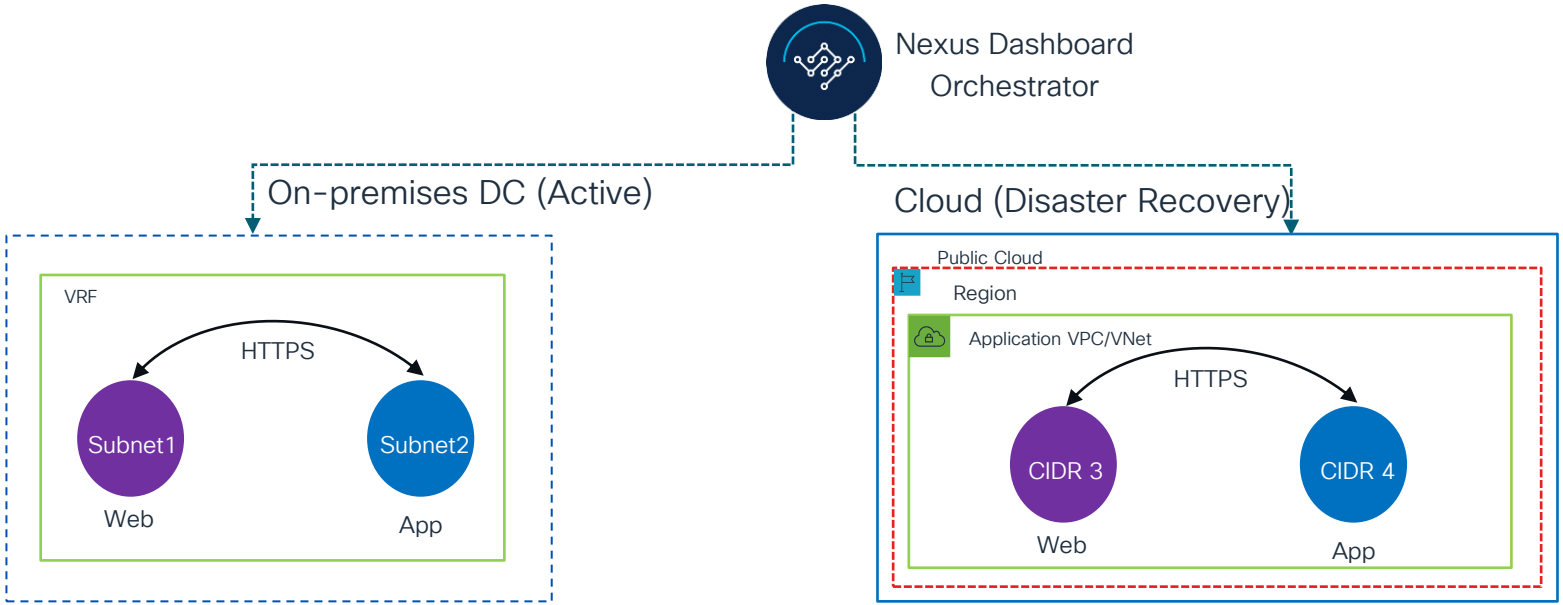
or

Cloud native router

Nexus Dashboard
(site management and host NDO)

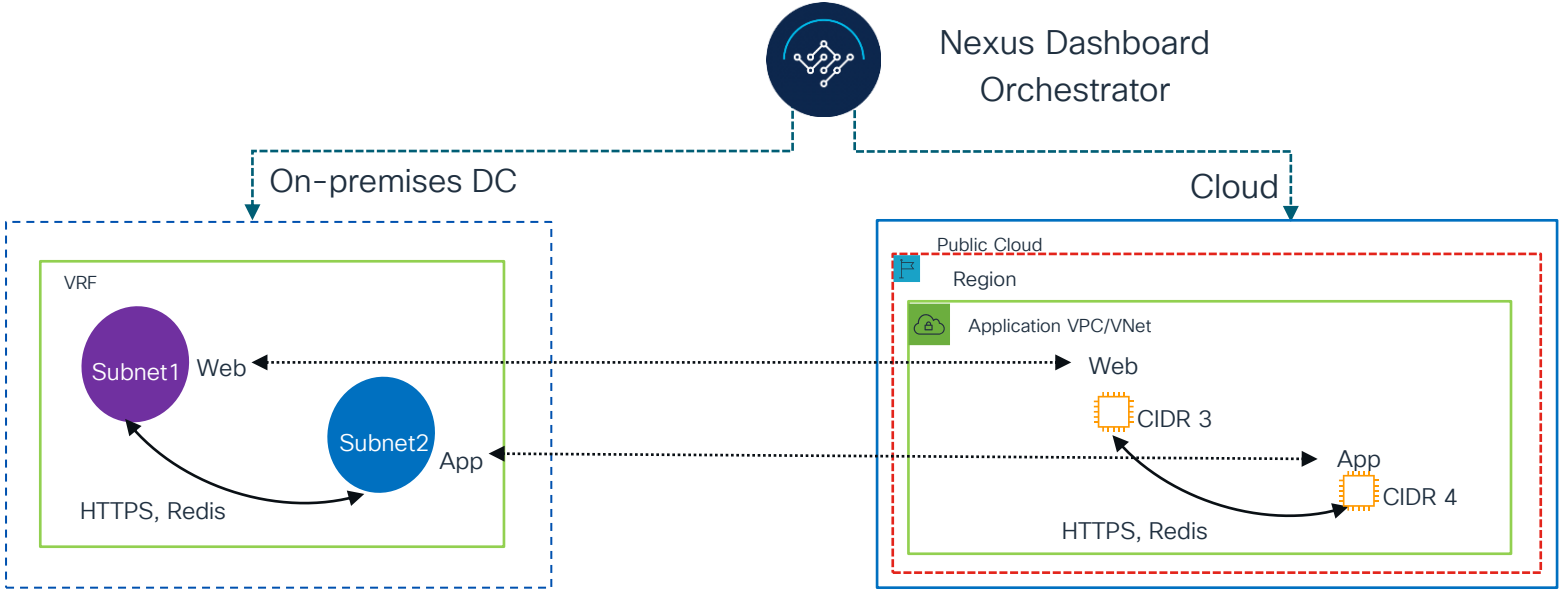
Hybrid Multi-Cloud use cases

Consistent policy for application redundancy



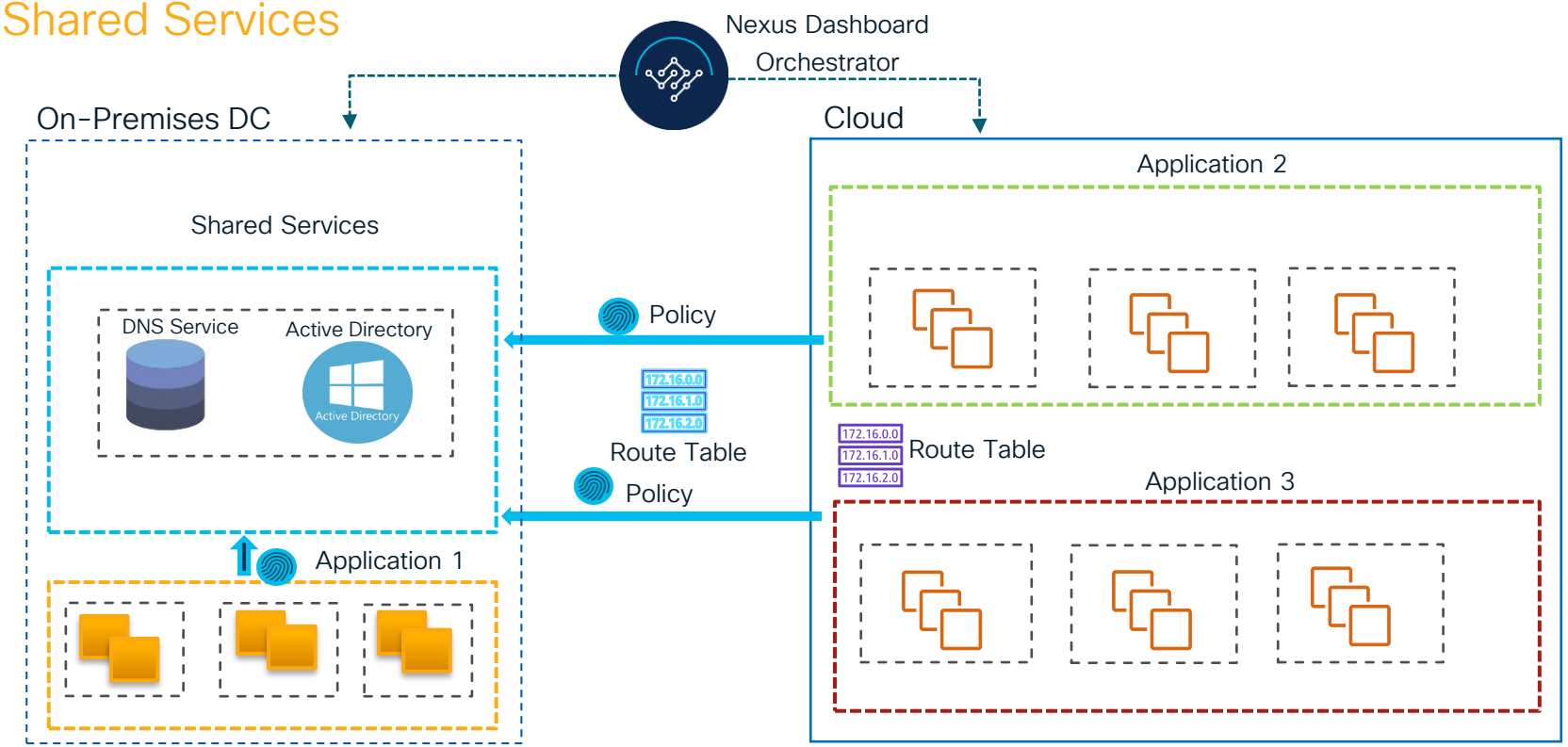
Hybrid Multi-Cloud use cases

Consistent policy for stretched applications



Hybrid Multi-Cloud use cases

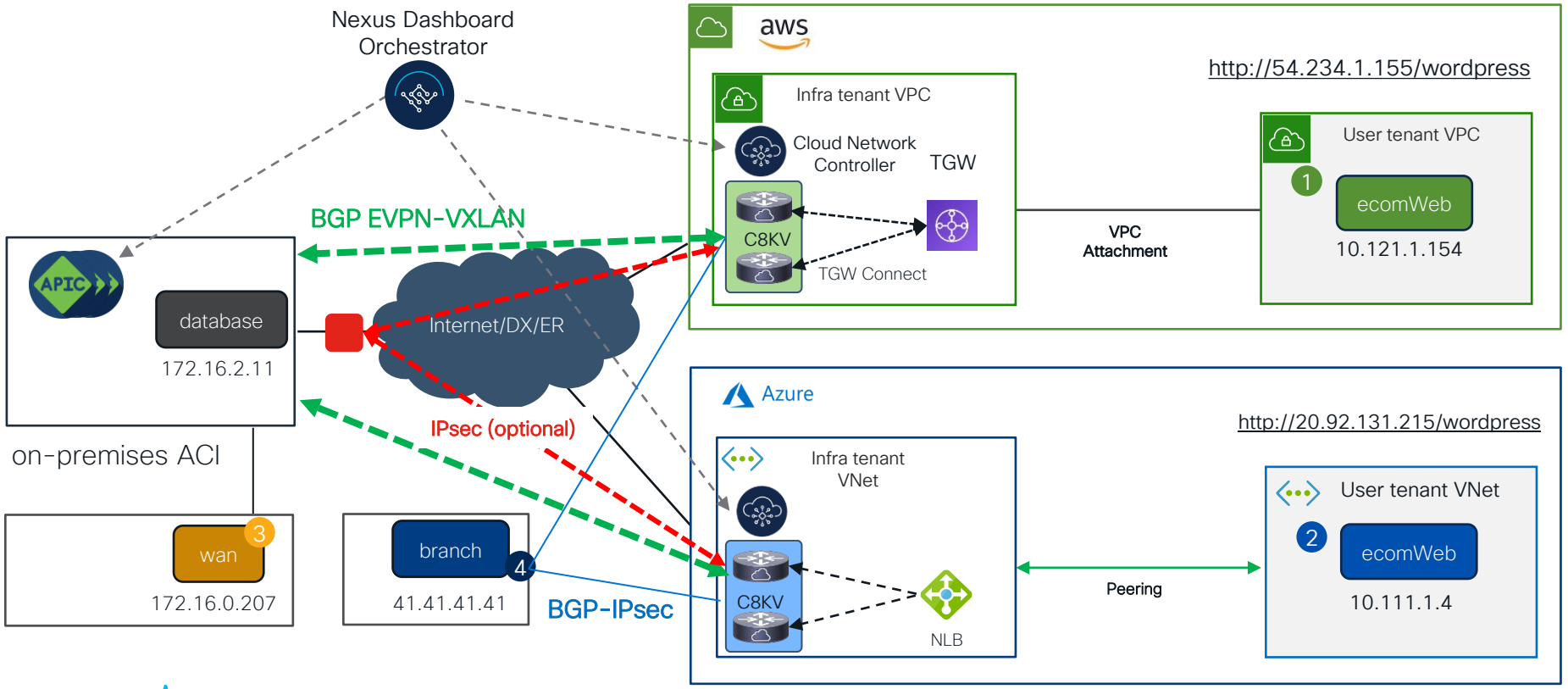
Shared Services



Demo

Demo #1 - ACI Hybrid Multi-Cloud

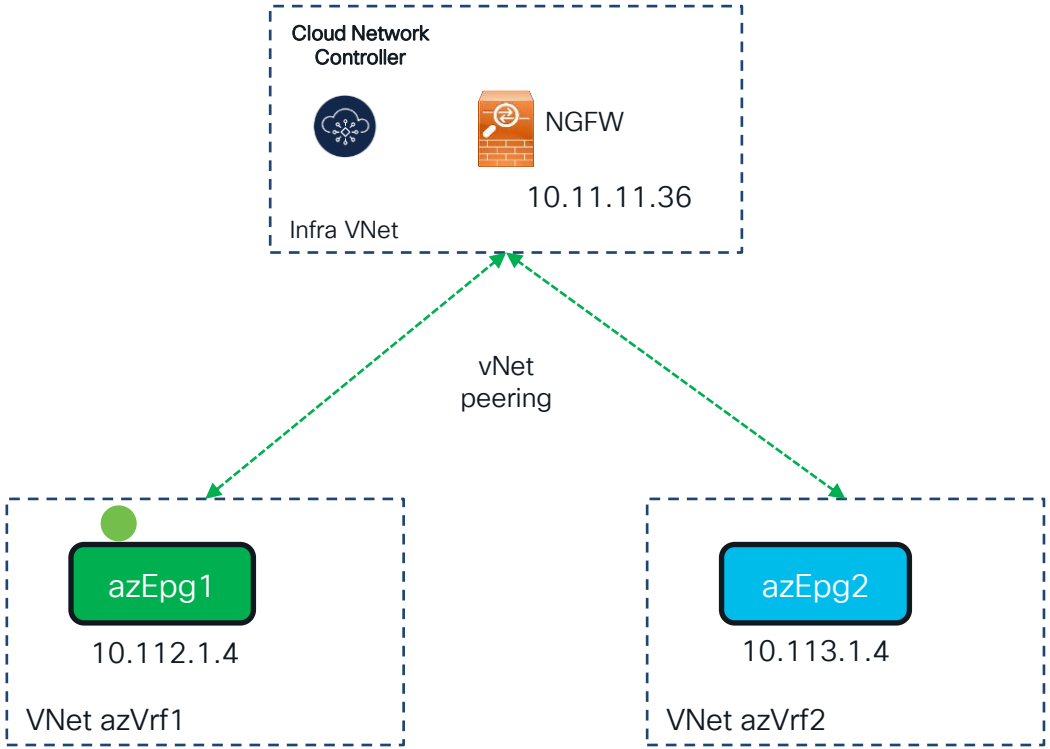
Network and Policy Automation



Demo #2-a Service Insertion

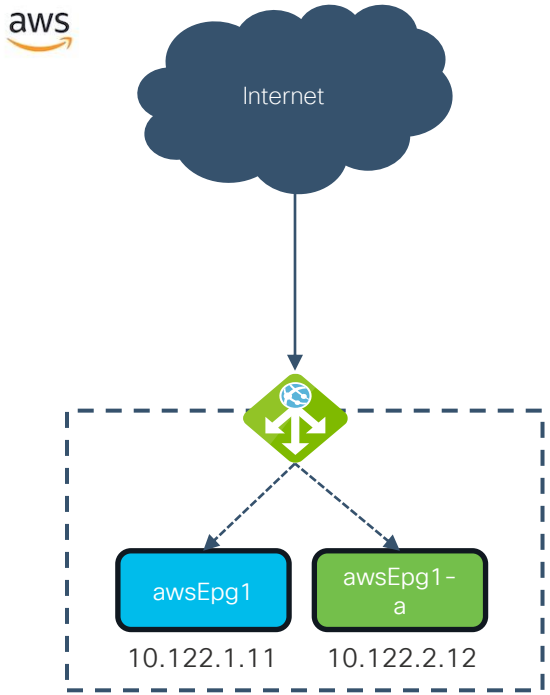
Seamless service insertion

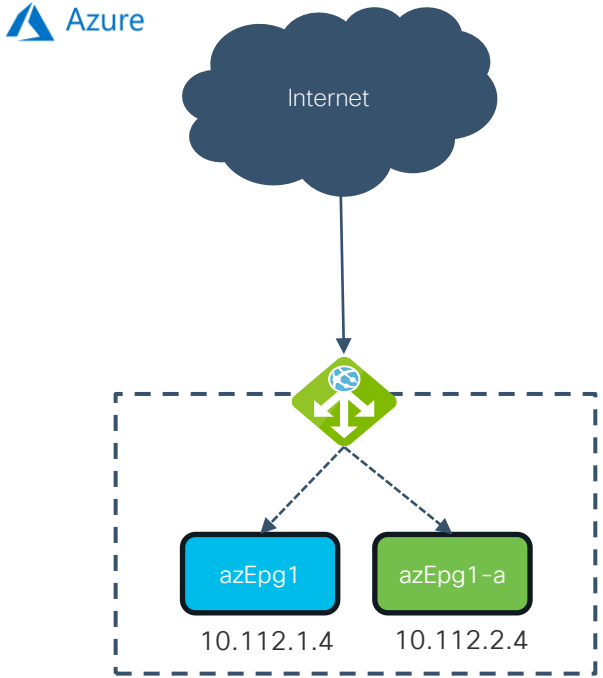
Apply Service Graph



Demo #2-b Service Insertion

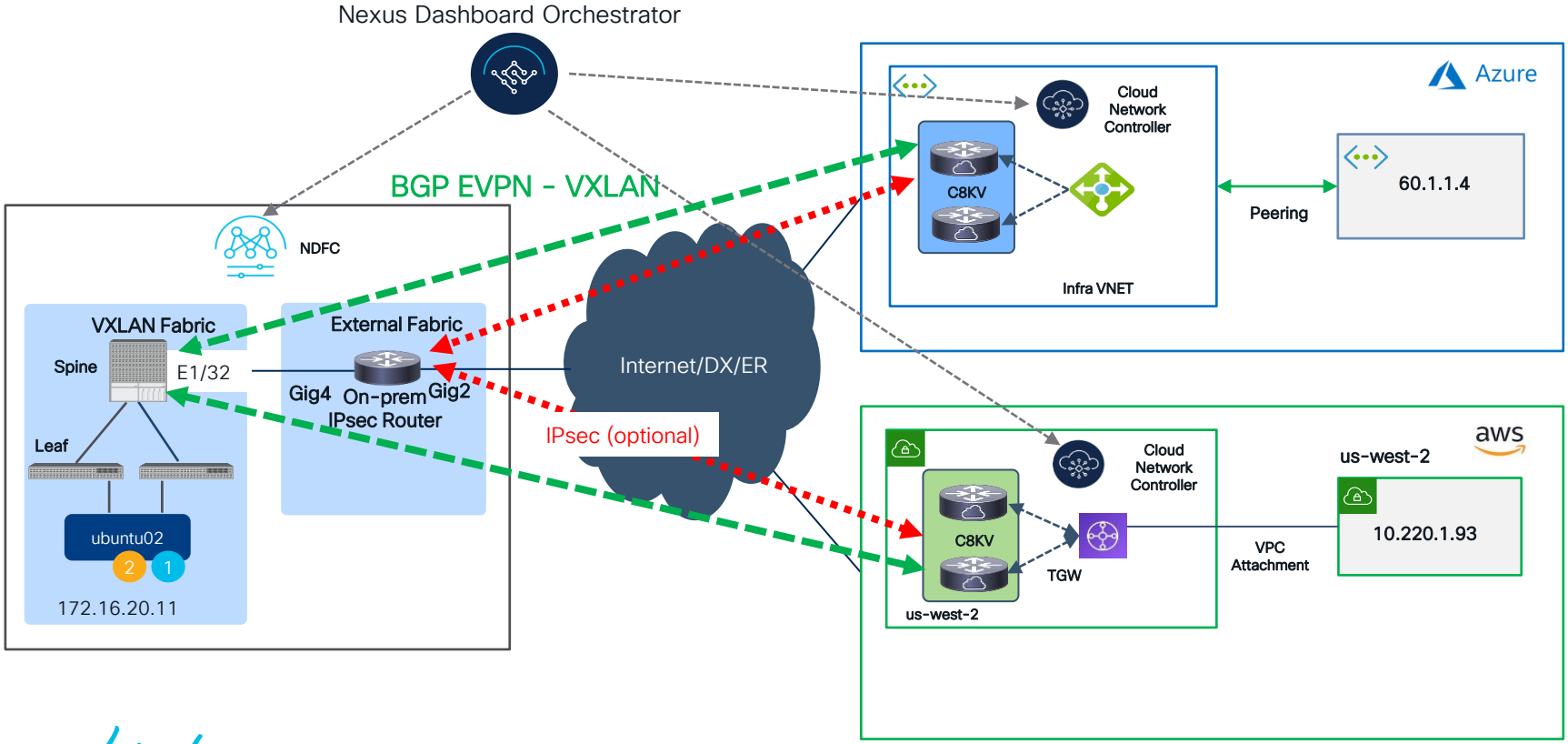
Seamless service insertion





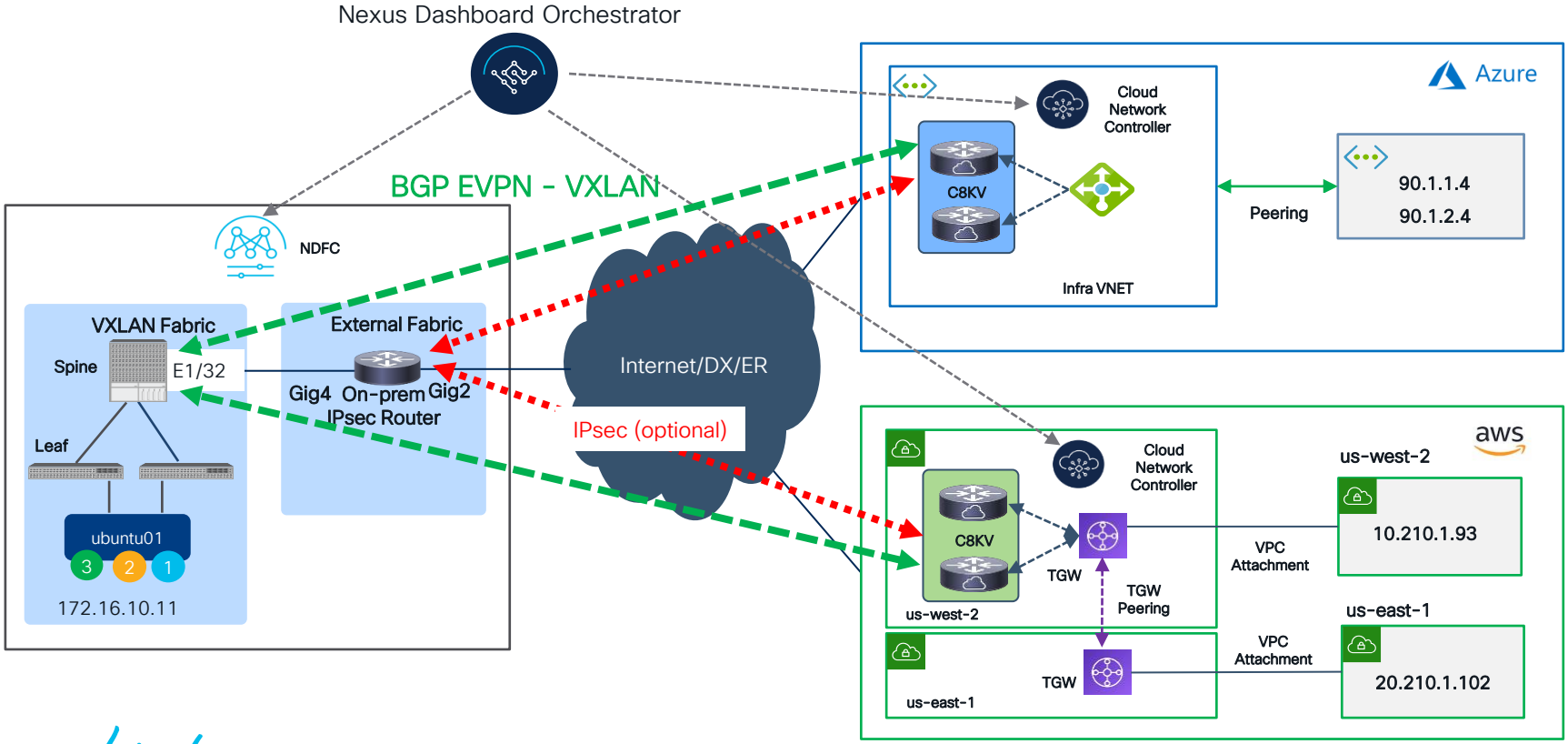
Demo #3-a - NDFC-NDO-Cloud Controller Integration

Hybrid Cloud Network Automation – Stretched VRF



Demo #3-b - NDFC-NDO-Cloud Controller Integration

Hybrid Cloud Network Automation – VRF Leaking



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Cisco Hybrid Multi-Cloud Design Guide
https://www.cisco.com/c/en/us/td/docs/dcn/whitepapers/cisco-hybrid-multicloud-networking-design-guide.html

Cisco Cloud Network Controller (Release Notes, Installation Guides, User Guides)
https://www.cisco.com/c/en/us/support/cloud-systems-management/cloud-application-policy-infrastructure-controller/series.html

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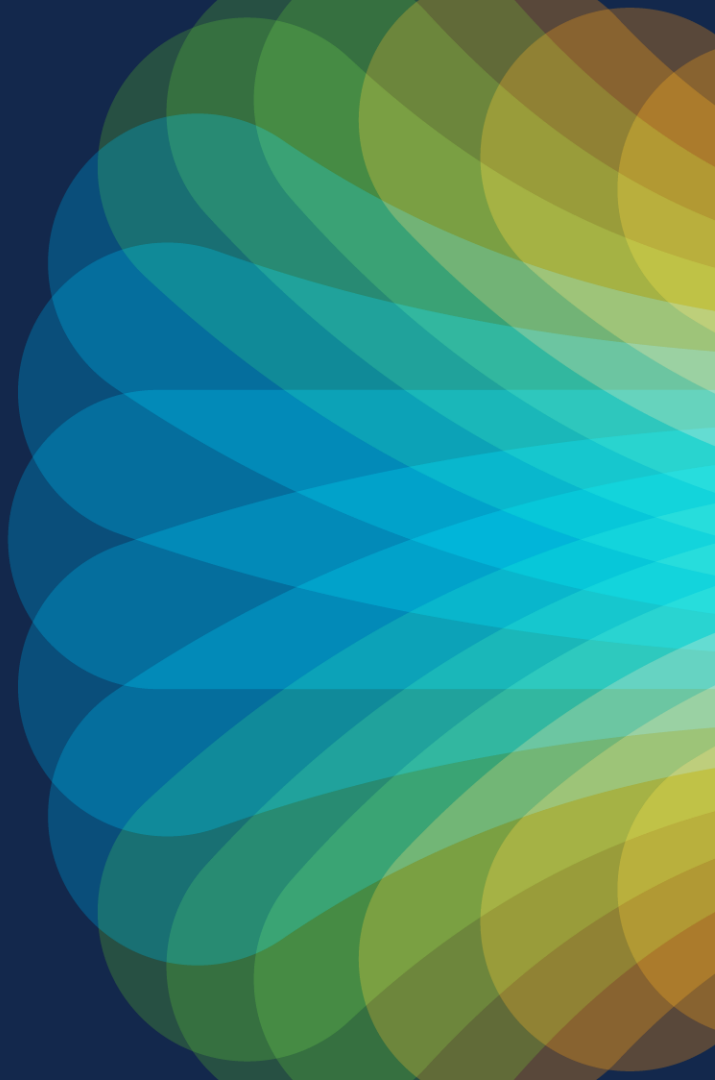

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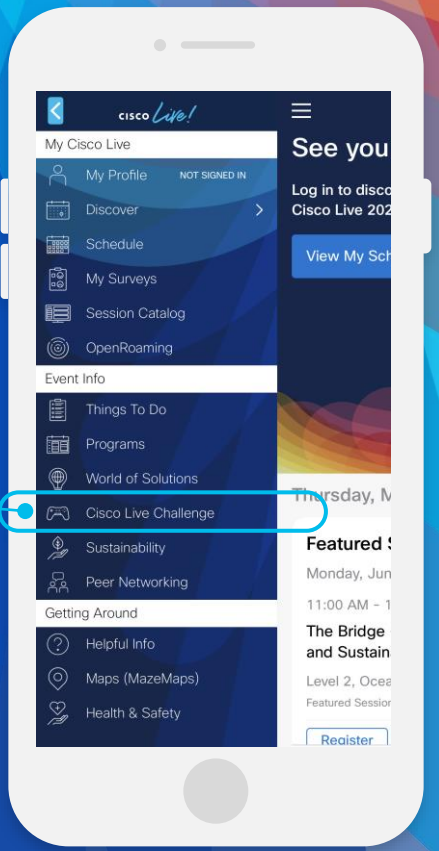


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