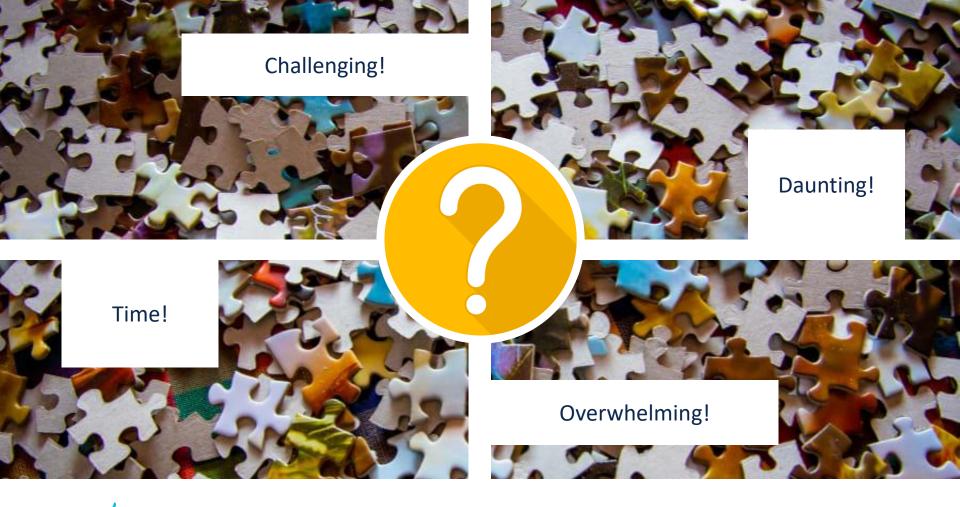
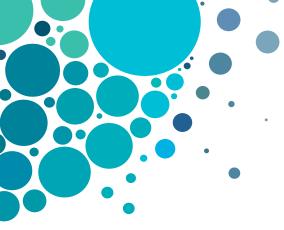


Efficiently using APIC UI to manage your ACI fabric

Meena Rajvaidya, Principal Engineer @meenarajvaidya









- Introduction
- Onboarding
- Configuration
- Visibility & Monitoring
- Q&A
- Summary

Agenda



"Engineering is the art of making the complex simple."

- Unknown



3 Pillars of User Experience





Cisco Webex App

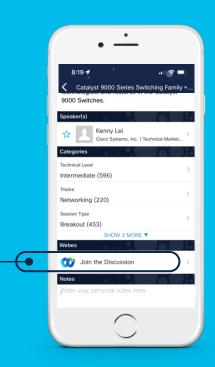
Questions?

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 until February 24, 2023.

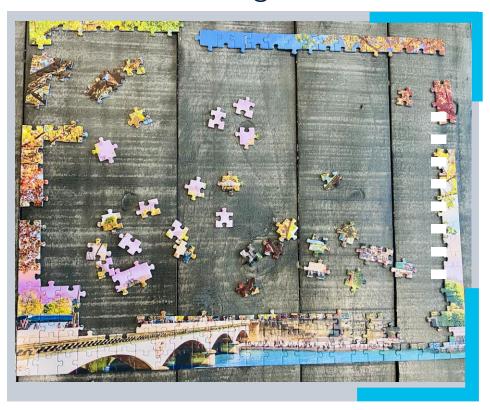


Which **version** of ACI is running in your <u>Data Center or lab</u>?

- 1) 4.x or older
- 2) 5.x
- 3) Exploring ACI



1. Onboarding



1a Cluster bring-up

1b Fabric Setup

Current Onboarding

```
Would you like to edit the configuration? (y/n) [n]: y
luster configuration ...
 Enter the fabric name [ACI Fabric1]:
 Enter the fabric ID (1-128) [1]:
 Enter the number of active controllers in the fabric (1-9) [3]:
 Enter the POD ID (1-9) [1]:
 Is this a standby controller? [NO]:
 Enter the controller ID (1-3) [1]:
 Enter the controller name [apic1]:
 Enter address pool for TEP addresses [10.0.0.0/16]:
 Note: The infra ULAN ID should not be used elsewhere in your environment
       and should not overlap with any other reserved VLAMs on other platforms.
 Enter the ULAN ID for infra network (1-4094) [3967]:
 Enter address pool for BD multicast addresses (GIPO) [225.0.0.0/15]:
Out-of-band management configuration ...
 Enable IPv6 for Out of Band Mgmt Interface? [N]:
 Enter the IPv4 address [192.168.10.1/24]:
 Enter the IPv4 address of the default gateway [192.168.10.2]:
 Enter the interface speed/duplex mode [auto]:
dmin user configuration ...
 Enable strong passwords? [Y]:
```

a

Cluster bring-up

- 6 form factors and 3 workflows
- CLI based (13 questions)
- More questions added with each release
- Dynamic user input
- Error prone



New Onboarding

а

Cluster bring-up

```
Press Enter Or Input JSON string to bootstrap your APIC node.

admin user configuration ...
Enter the password for admin [None]:
Reenter the password for admin [None]:
Out-of-band management configuration ...
Enter the IP Address [192.168.10.1/24]: 10.28.120.110/24
Enter the IP Address of default gateway [192.168.10.254]: 10.28.120.
Would you like to edit the configuration? (y/n) [n]: n
System pre-configured successfully.
Use: https://10.28.120.110 to complete the bootstrapping
Press F9 to enable debug shell
```

- Login to APIC Console
- CLI based (3 questions)
- Launch UI

Available from *6.0.2

New Onboarding

la

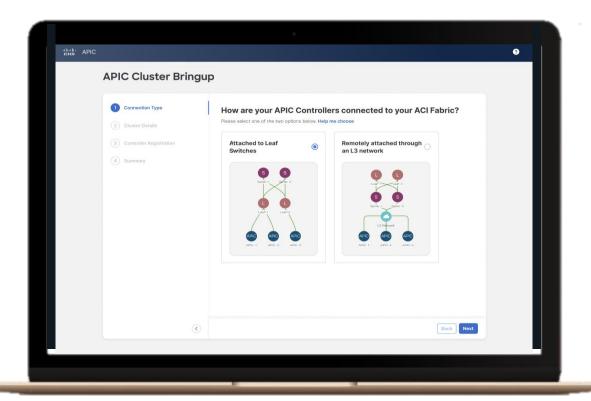
Cluster bring-up

```
Press Enter Or Input JSON string to bootstrap your APIC node.
admin user configuration ...
  Enter the password for admin [None]:
  Reenter the password for admin [None]:
Out-of-band management configuration ...
 Enter the IP Address [192.168.10.1/24]: 10.28.120.110/24 ←
  Enter the IP Address of default gateway [192.168.10.254]: 10.28.120.1
Would you like to edit the configuration? (y/n) [n]: n
System pre-configured successfully.
Use: https://10.28.120.110 to complete the bootstrapping
Press F9 to enable debug shell
```

Let's look at a quick **Demo!**

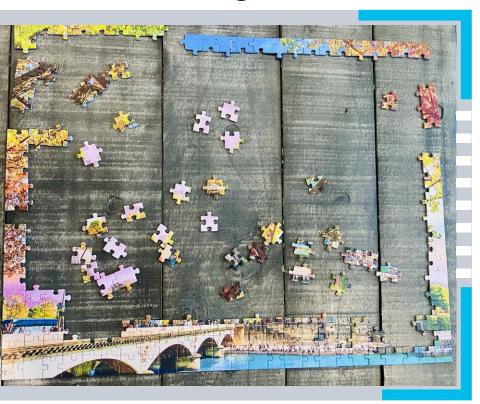


Cluster bring-up





Onboarding



1a Cluster bring-up

1b Fabric Setup



What is it?



Fabric Setup



Common day-1 policies in one place.



Intent based



Incorporate best practices

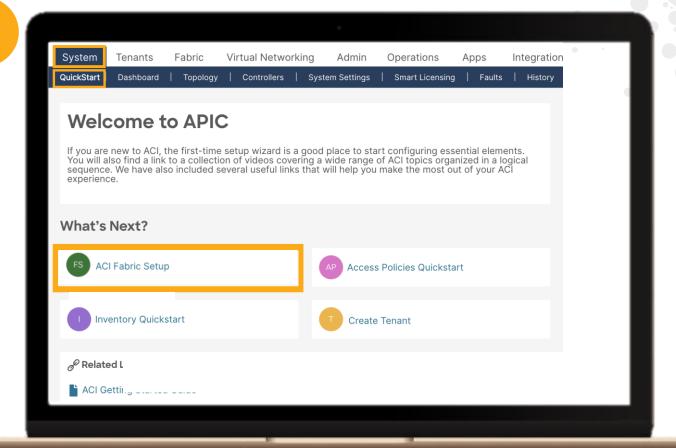


Re usable



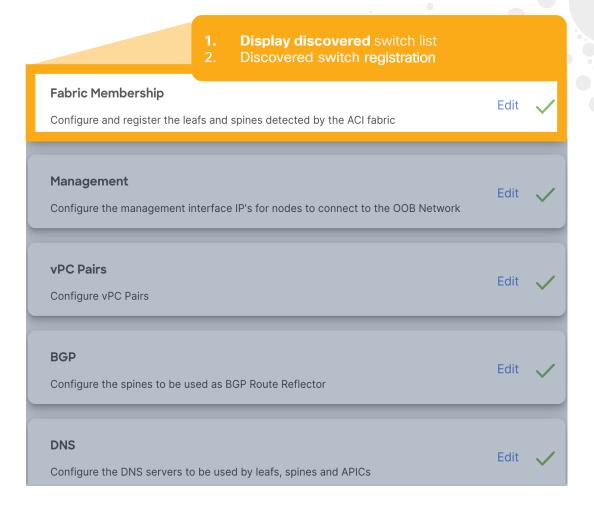
Fabric Setup

1b

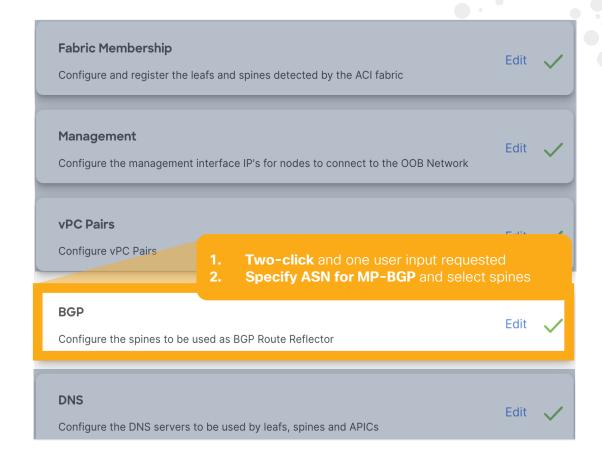




Fabric Setup 1b System QuickStart FS ACI Fabric Setup

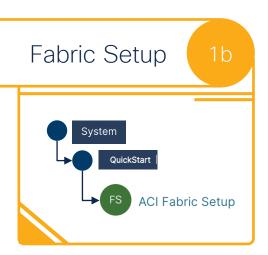


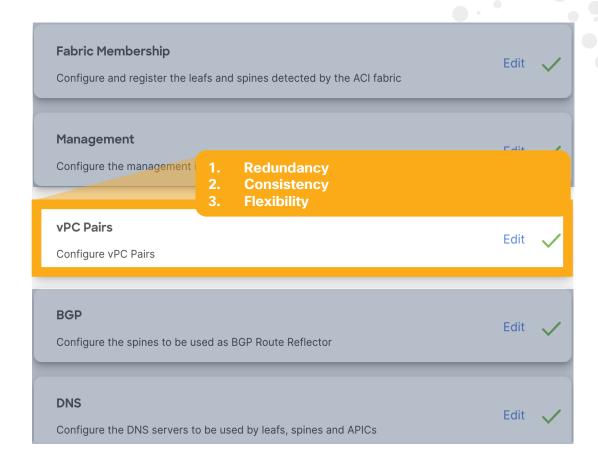
Fabric Setup 1b System **ACI Fabric Setup**



BRKDCN-2659

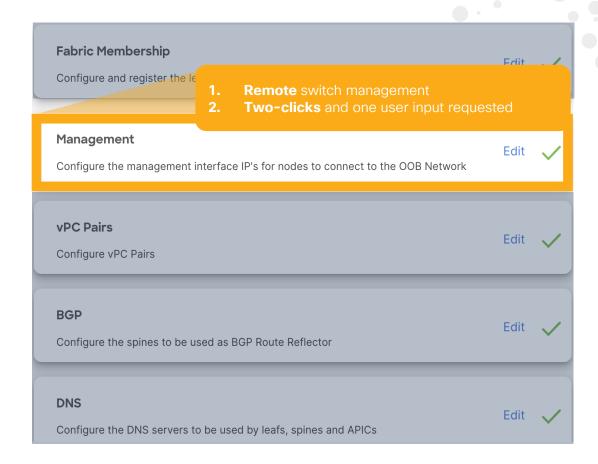






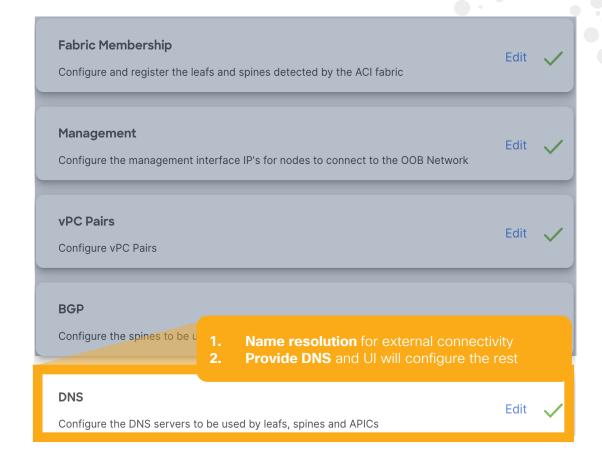


Fabric Setup System QuickStart FS ACI Fabric Setup



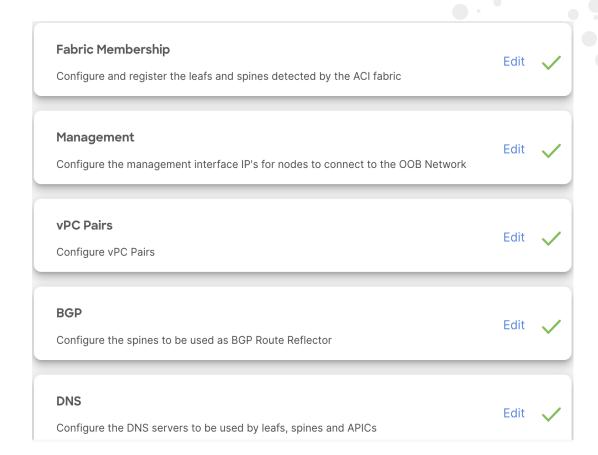


Fabric Setup 1b System QuickStart FS ACI Fabric Setup

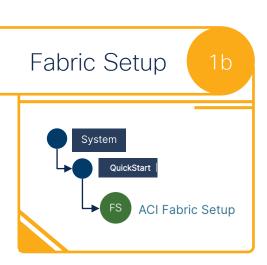


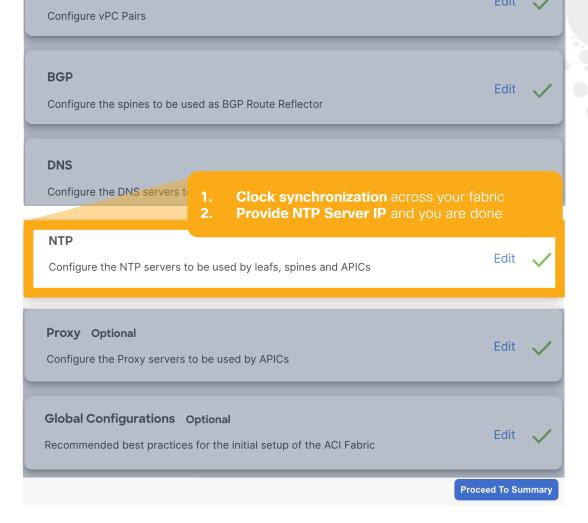


Fabric Setup 1b System QuickStart FS ACI Fabric Setup

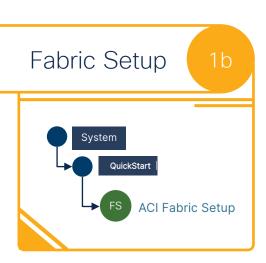


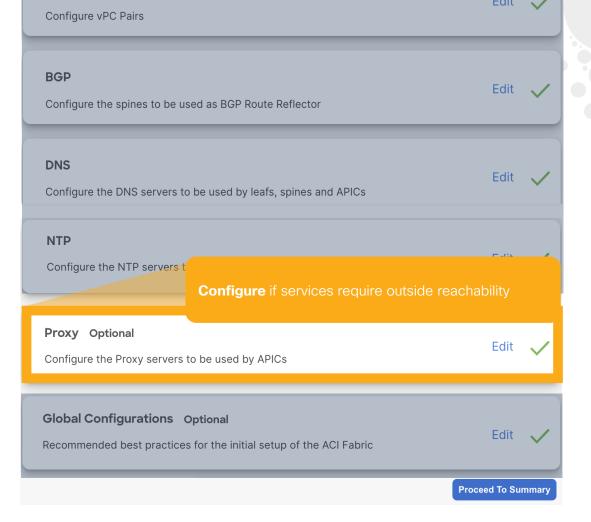
NTP



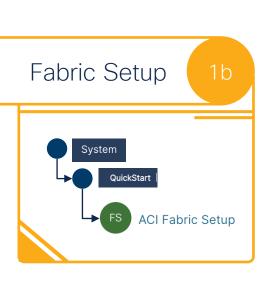


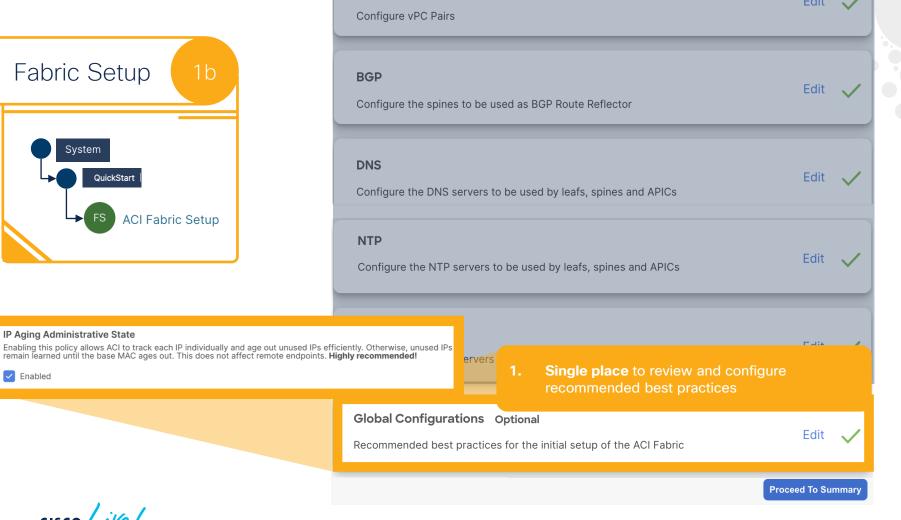














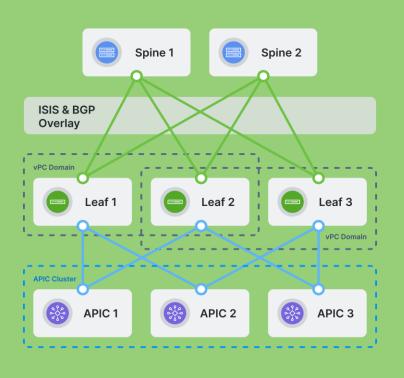
IP Aging Administrative State

Enabled

1 ONBOARDING

1a Cluster Bring-up

1b Fabric Setup

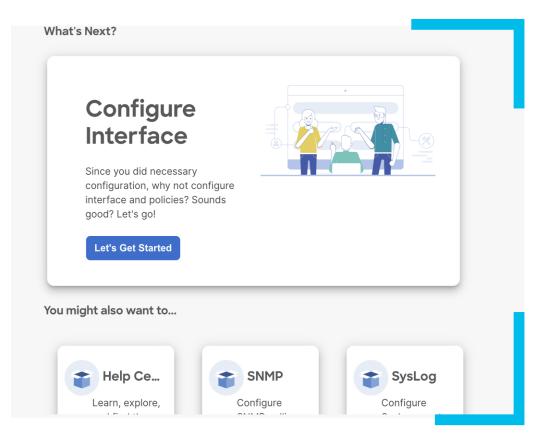


1 ONBOARDING

1a Cluster Bring-up

1b Fabric Setup

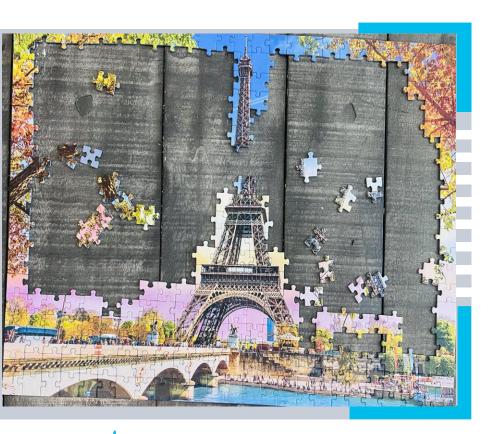




1 ONBOARDING

2 CONFIGURATION





2 CONFIGURATION

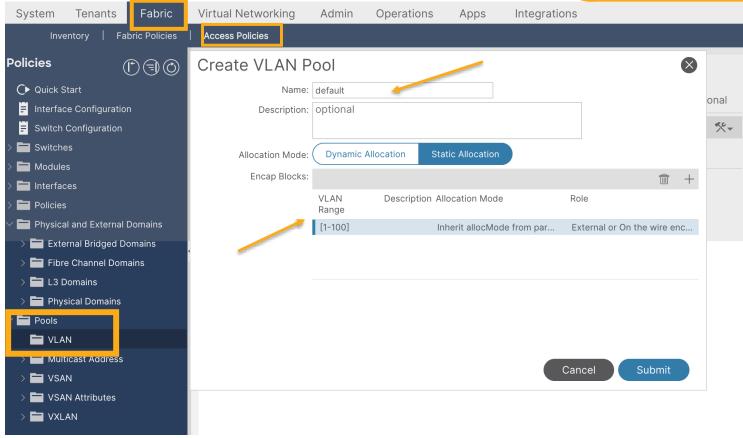
2a Setup vPC

2b Deploy Application

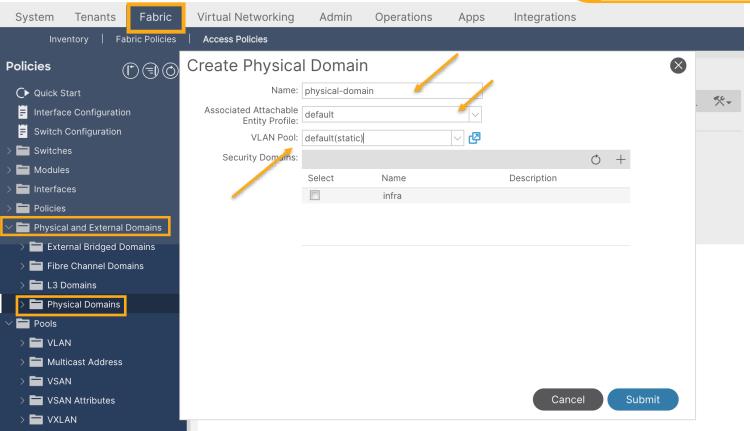
Setup external connectivity

2d Setup Security





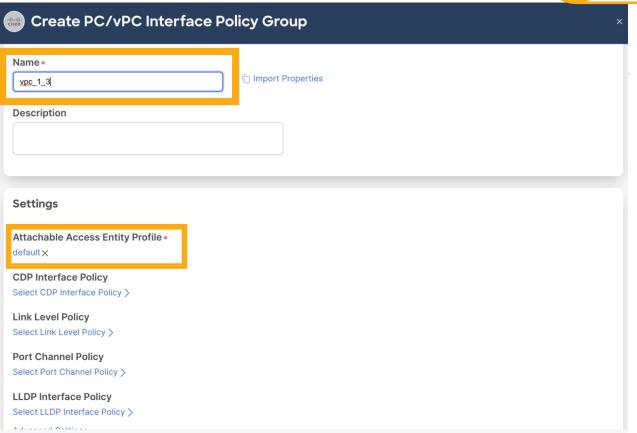






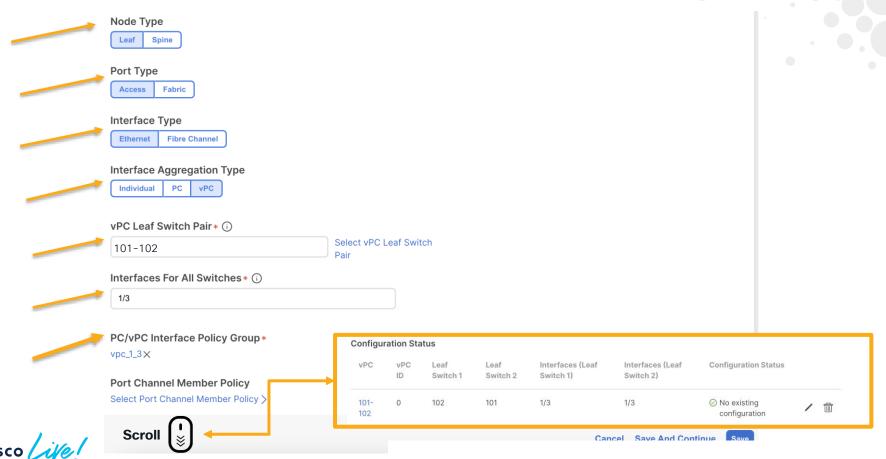


vPC Policy

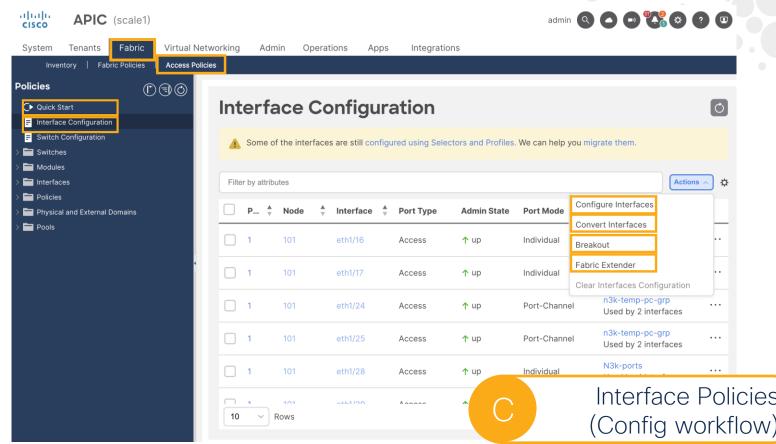




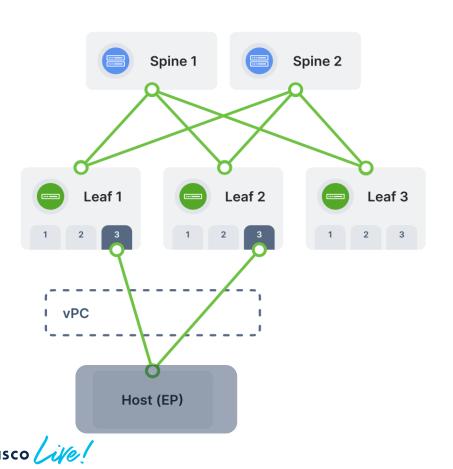
Interface & Switches

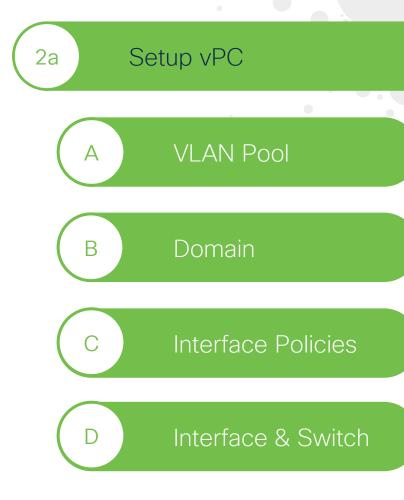


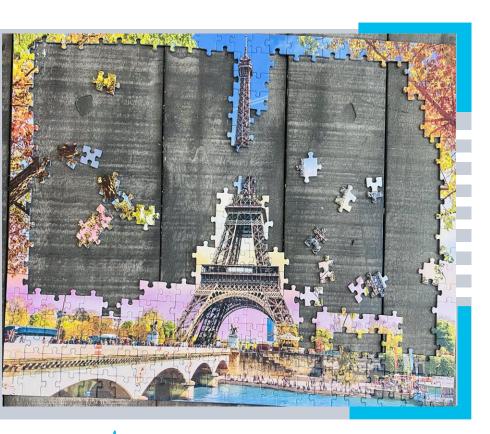












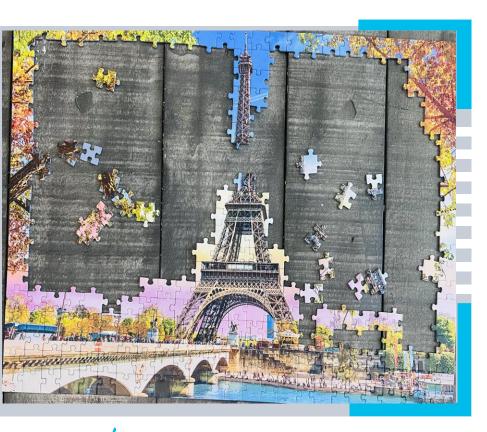


2a Setup vPC

2b Deploy Application

Setup external connectivity

2d Setup Security



Deploy Application 2b

VRF

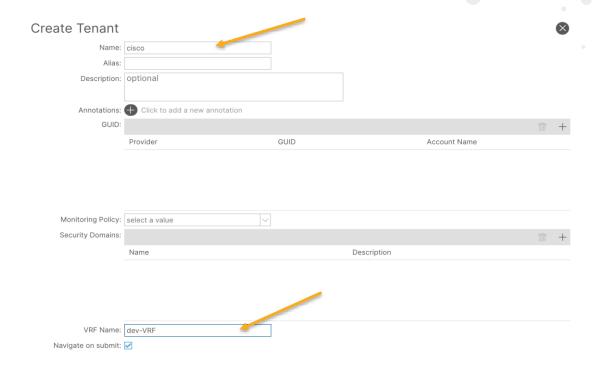
Create Bridge

Deploy Application

Create Tenant & VRF





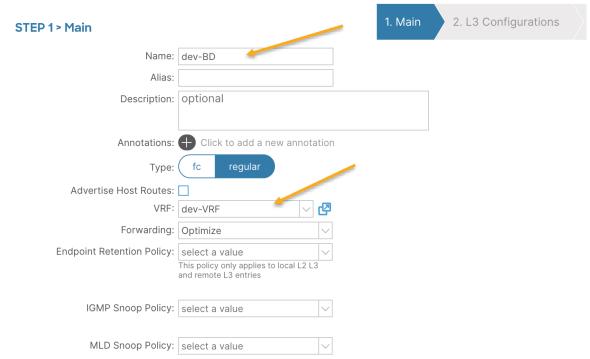






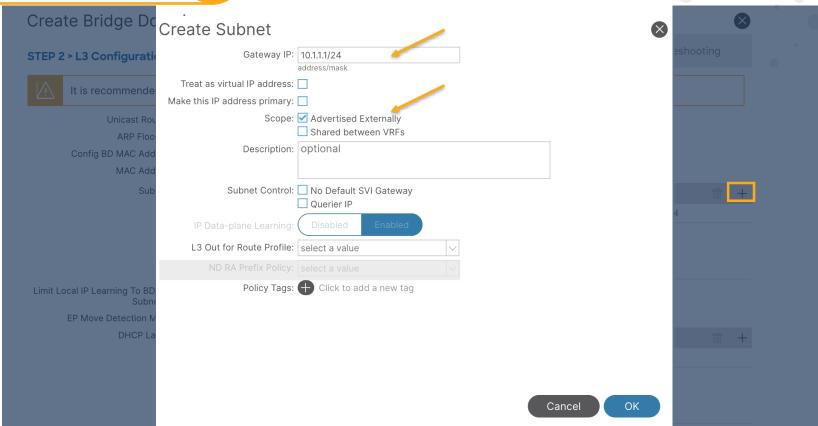
Create Bridge Domain B

Create Bridge Domain

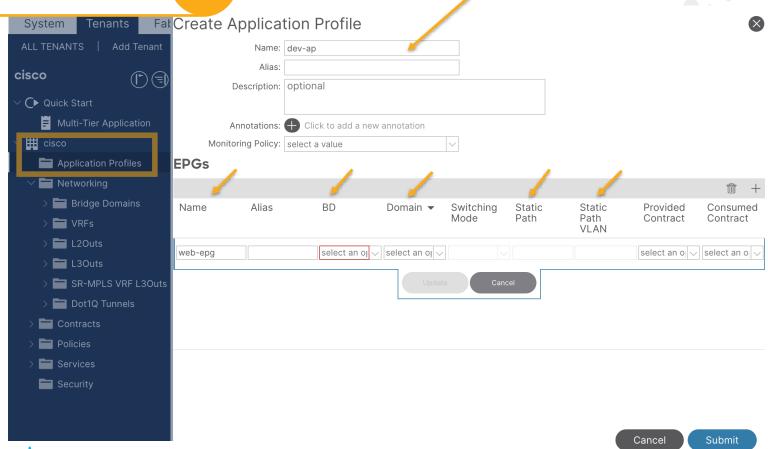


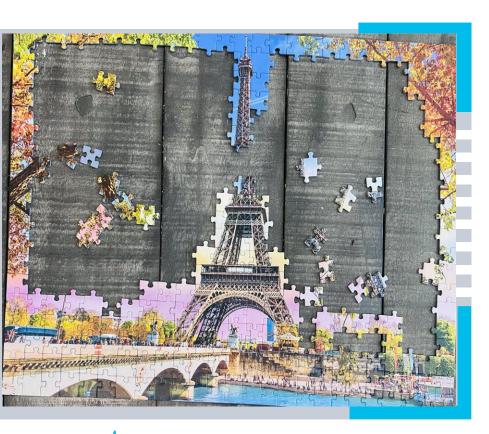


Create Bridge Domain B



Create Application

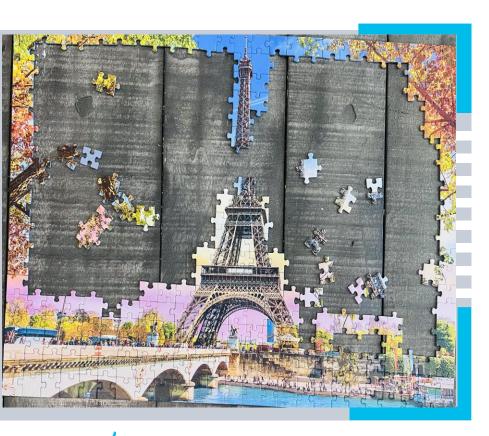




2a Setup vPC

2b Deploy Application

Setup external connectivity



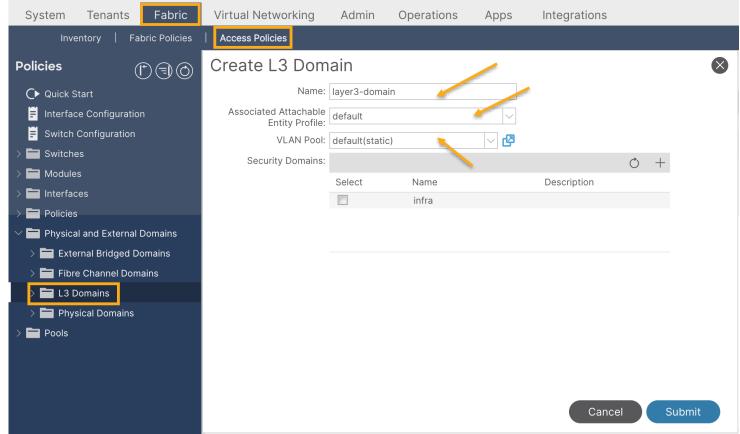
Setup external connectivity

A Create L3 Domain

B Configure Interface

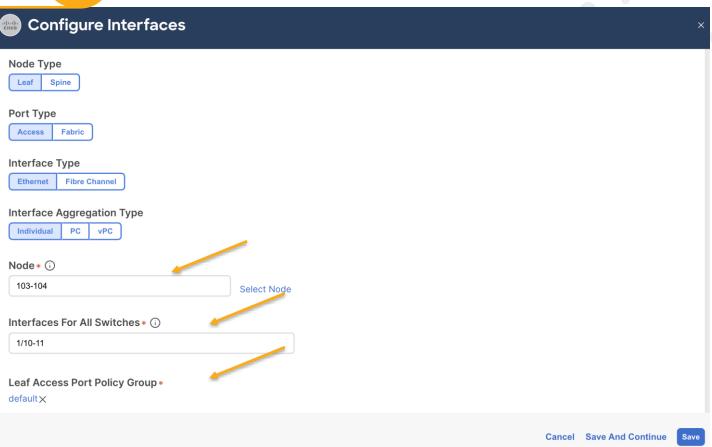
C Create L3Out

Create L3 Domain A



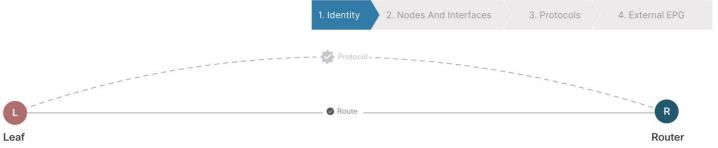
Configure Interface











Identity

A Layer 3 Outside (L3Out) network configuration defines how the ACI fabric connects to external layer 3 networks. The L3Out supports connecting to external networks using static routing and dynamic routing protocols (BGP, OSPF, and EIGRP).

Prerequisites:

- Configure an L3 Domain and Fabric Access Policies for interfaces used in the L3Out (AAEP, VLAN pool, Interface selectors).
- Configure a BGP Route Reflector Policy for the fabric infra MP-BGP.









1. Identity

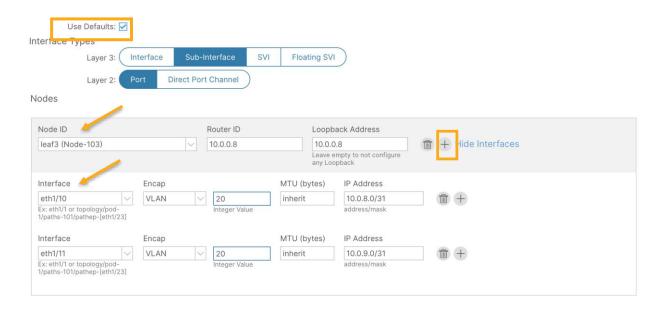
2. Nodes And Interfaces

3. Protocols

4. External EPG

Nodes and Interfaces

The L3Out configuration consists of node profiles and interface profiles. An L3Out can span across multiple nodes in the fabric. All nodes used by the L3Out can be included in a single node profile and is required for nodes that are part of a VPC pair. Interface profiles can include multiple interfaces. When configuring dual stack interfaces a separate interface profile is required for the IPv4 and IPv6 configuration, that is automatically taken care of by this wizard.





Create L3 Out C

Create L3Out



1. Identity

2. Nodes And Interfaces

3. Protocols

4. External EPG

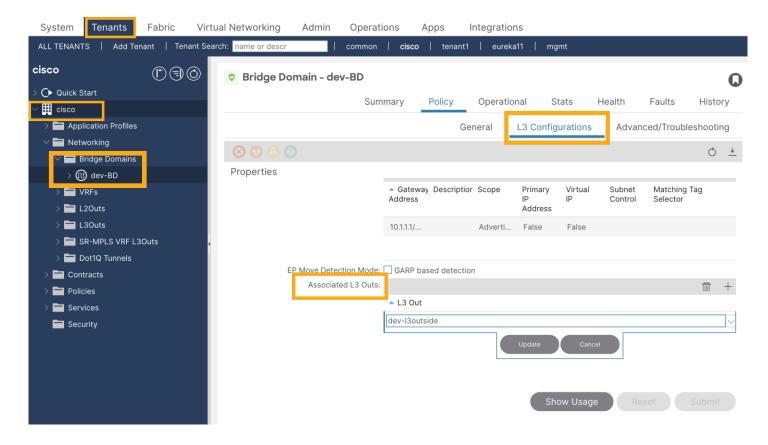
External EPG

The L3Out Network or External EPG is used for traffic classification, contract associations, and route control policies. Classification is matching external networks to this EPG for applying contracts. Route control policies are used for filtering dynamic routes exchanged between the ACI fabric and external devices, and leaked into other VRFs in the fabric.

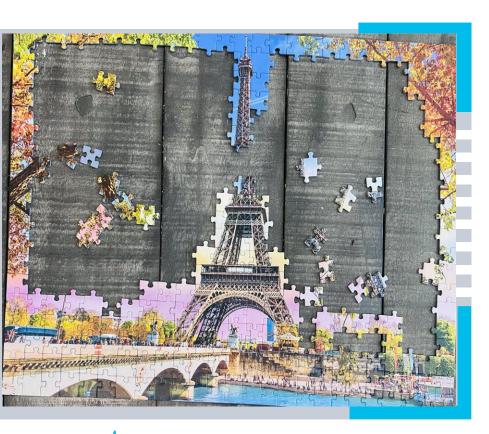




Advertise Routes





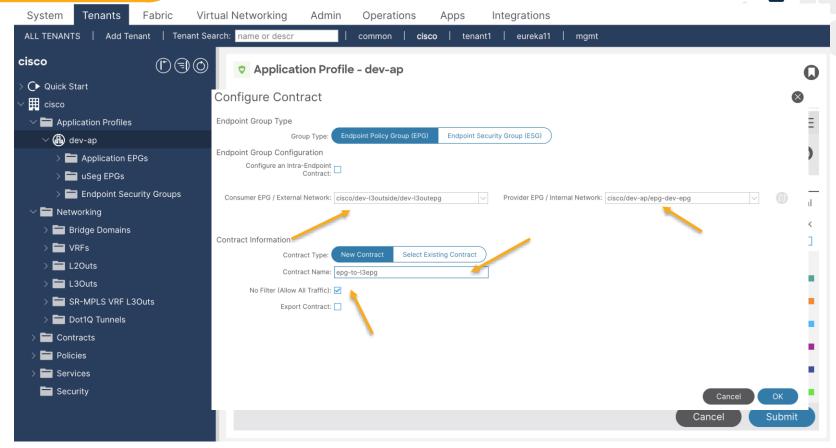


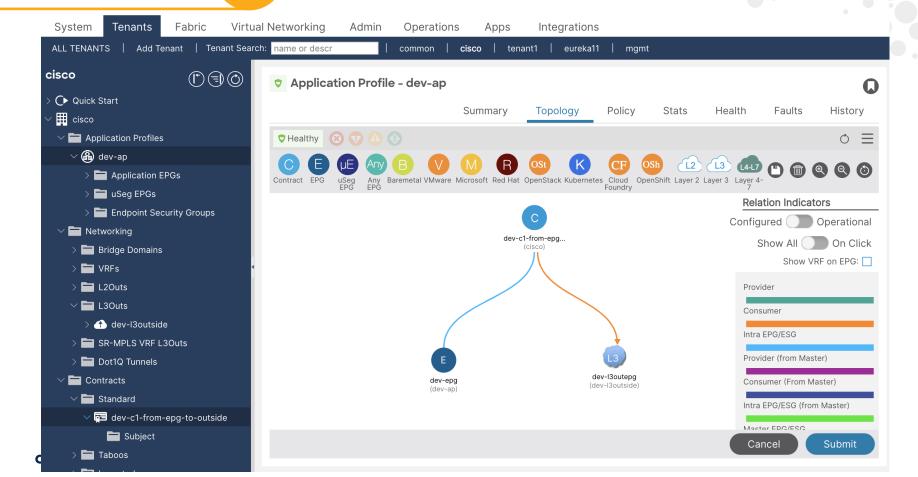
2a Setup vPC

2b Deploy Application

Setup external connectivity





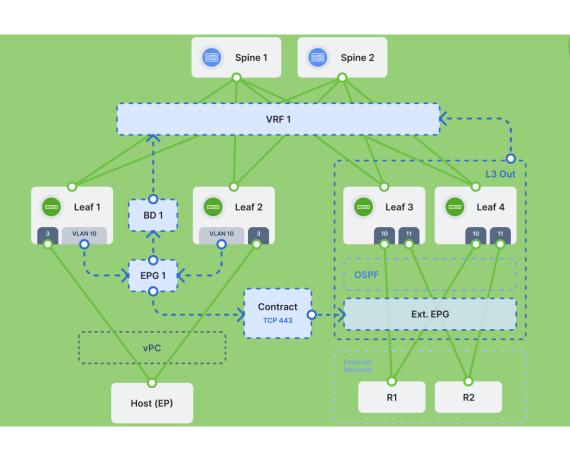


2a Setup vPC

2b Deploy Application

Setup external connectivity

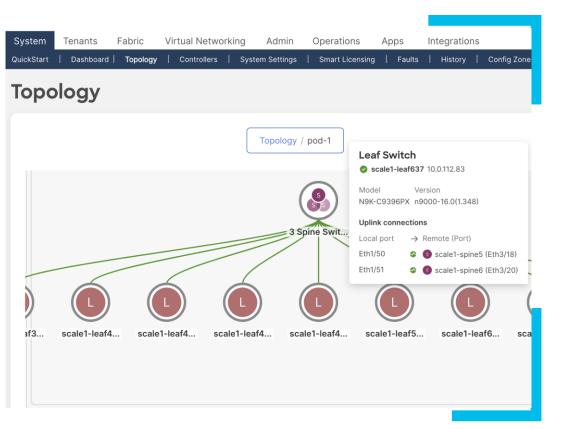




2a Setup vPC

2b Deploy Application

Setup external connectivity



1 ONBOARDING

- 2 CONFIGURATION
- VISIBILITY/MONITORING





Fabric Monitoring

Capacity Dashboard

Security

Smart Topology

Fabric Monitoring | Health & Alerts





















View All

All Notifications

F1543

This fault occurs when a node is not reachable

Intersight

Configure Intersight Device Connector to share usage statistics and Tech Support with the Intersight portal. Looks like we are unable to establish connection with the server. Please check DNS, proxy and OOB settings or try again later.

+ 1 More

+ 9 More

F2972

This Fault usually occurs if some feature requested the switch repoot.

BRKDCN-2659

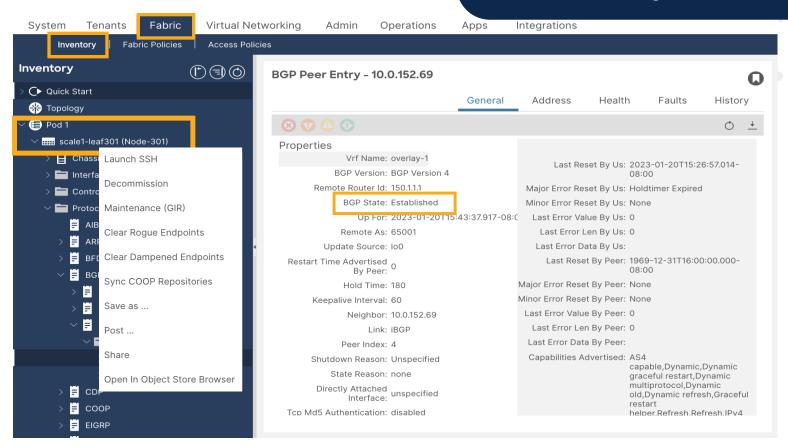
+ 1 More

Process Restarted



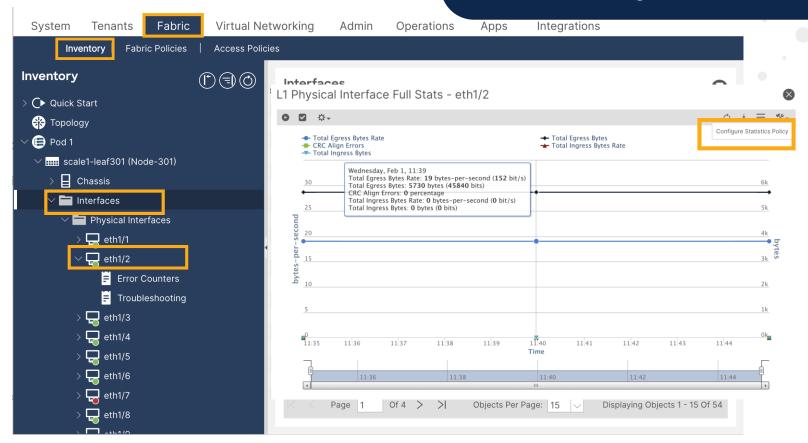


Fabric Monitoring | show ip bgp neighbors





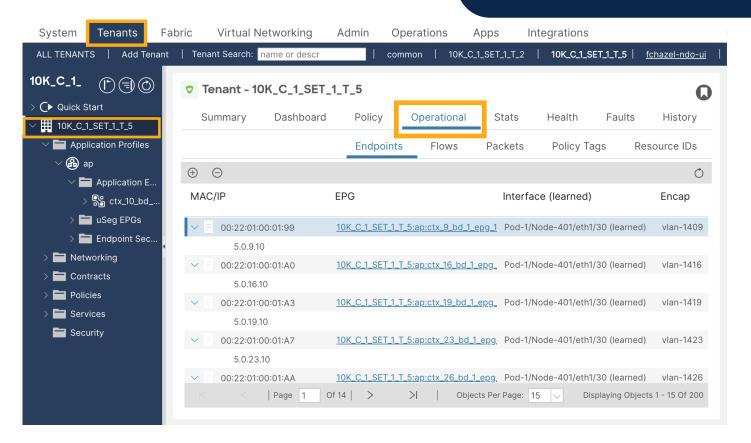
Fabric Monitoring | show ip interface brief





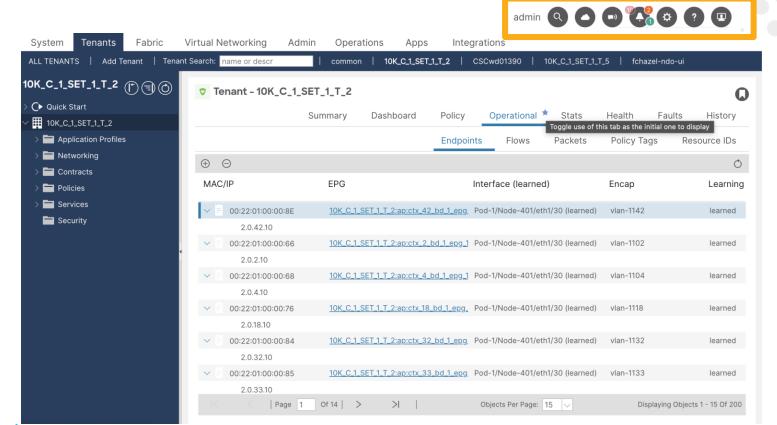


Fabric Monitoring | Operational Tab



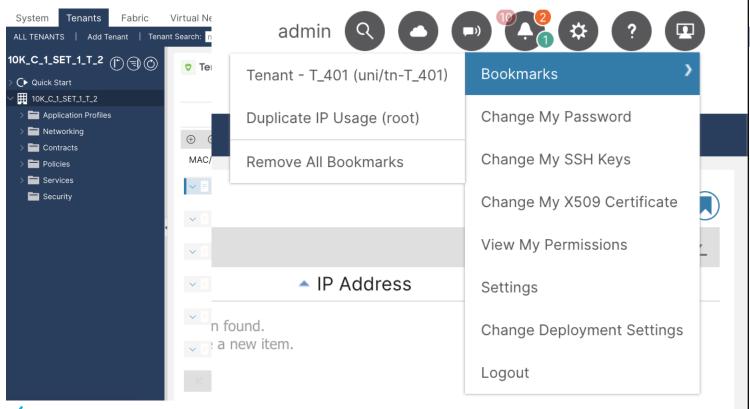


Fabric Monitoring | Initial Tab & Bookmarks



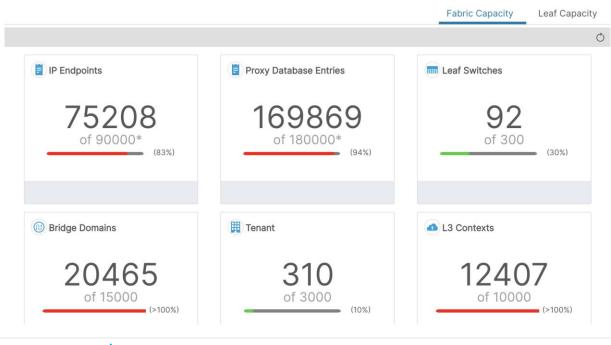


Fabric Monitoring | Initial Tab & Bookmarks





Capacity Dashboard





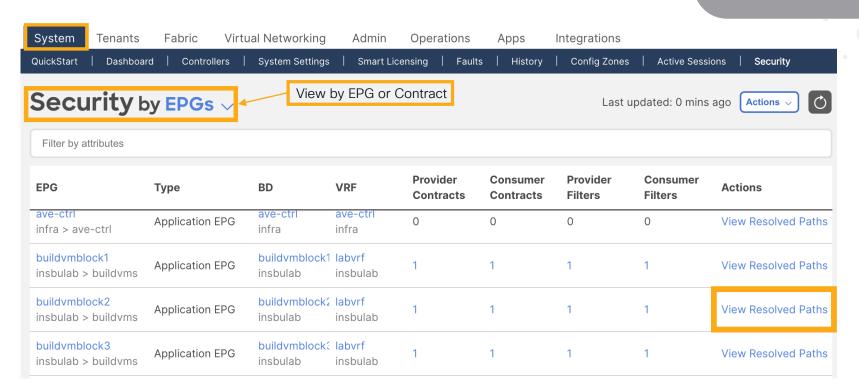


Capacity Dashboard

Fabric Capacity Leaf Capacity node-306 (N9K-C93180YC-EX) Detailed Usage Virtualization Ratio 0% Switch ^ ast Policy CAM Bridge Domain Absolute: 5 Rules Percentage: <1% 8% 5654 of 65536 pod-1/node-304 **EPG** Absolute: 24 N9K-C93180YC-EX Percentage: <1% 100% 1192 Labels Configure Profile IPv4 Local: 6 0% Remote: 11 Percentage: <1% Local: 0 IPv6 Rules Remote: 0 3% 2054 of 65536 pod-1/node-306 Percentage: 0% N9K-C93180YC-EX 192 MAC Local: 5 Labels Configure Profile Remote: 6 0% Percentage: <1% Multicast Absolute: 0 Percentage: 0% Rules Policy CAM Rules: 2054 8% 5851 of 65536 pod-1/node-311 Rules Percentage: 3% N9K-C93180YC-EX 100% 1192 Labels: 0 Labels Configure Profile Labels Percentage: 0% 0% **VRF** Absolute: 406 Percentage: 50%

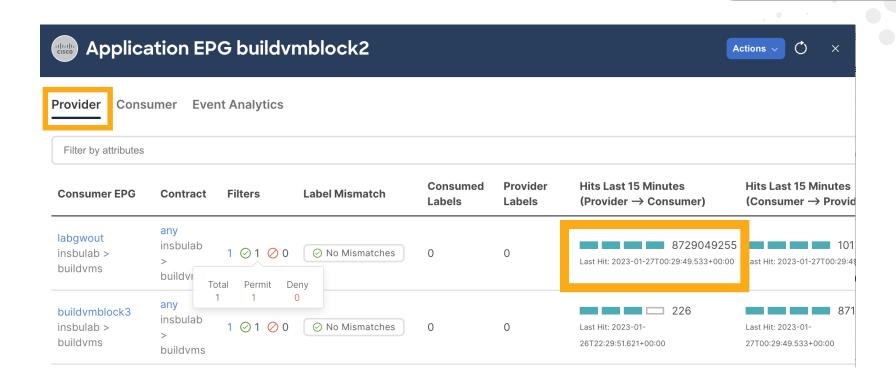


Security





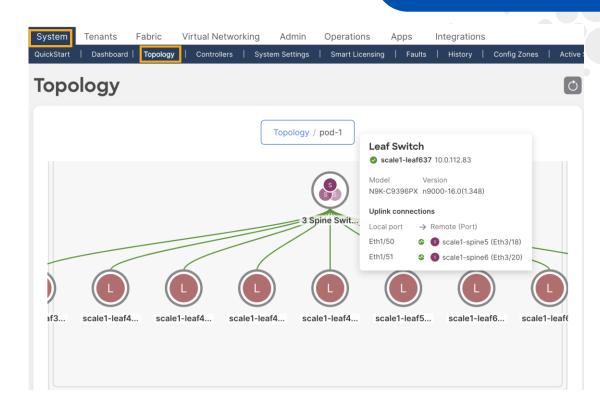
Security



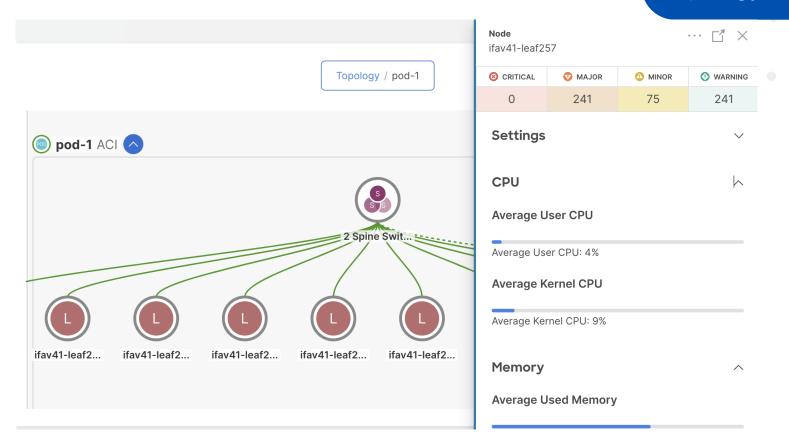


Topology

- Interactive
- Faster load time
- Scalability
- Near real time
- Easy to read and understand
- Dazzling and delightful



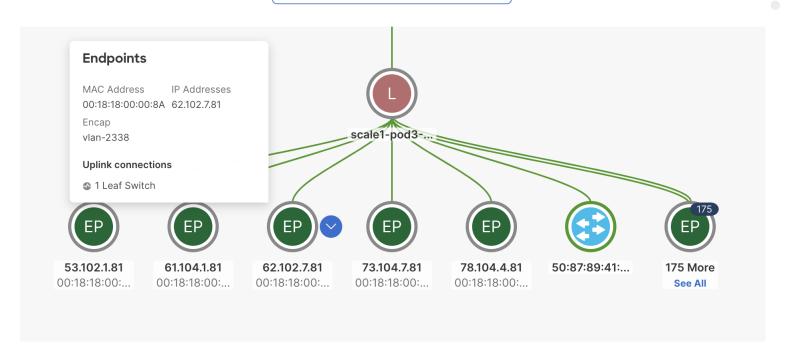
Topology





Topology

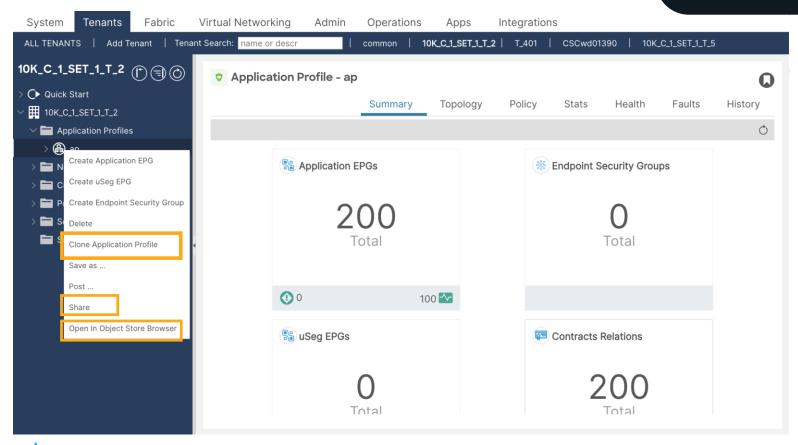
Topology / pod-3 / scale1-pod3-leaf3





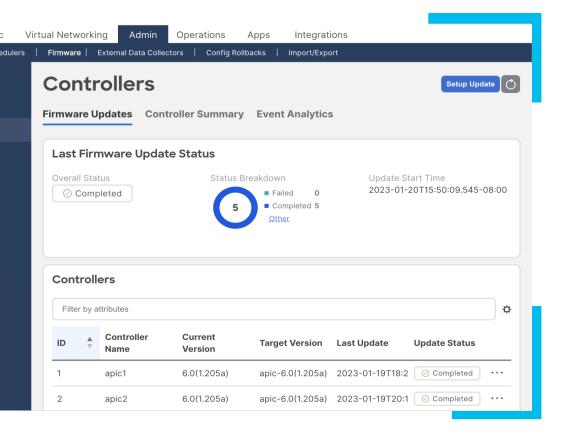












1 ONBOARDING

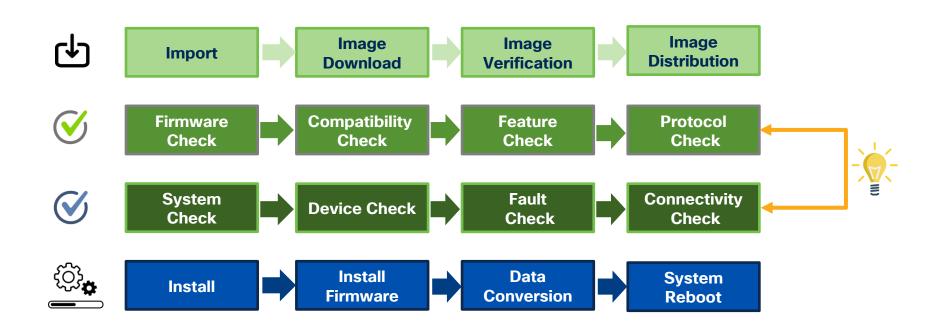
- 2 CONFIGURATION
- VISIBILITY/MONITORING





APIC Upgrade Install Workflow



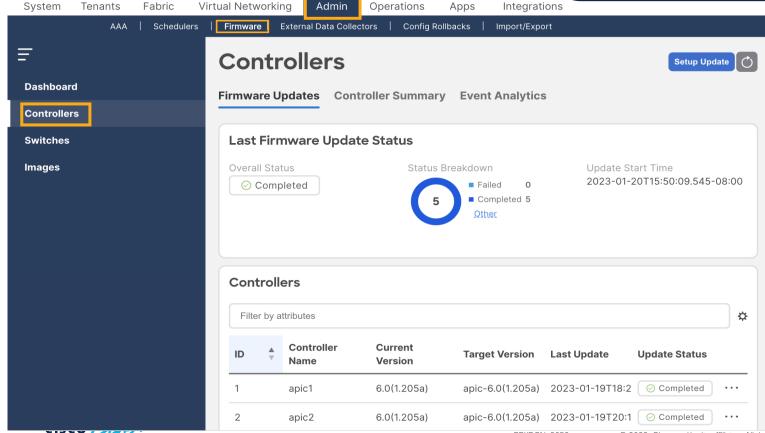




APIC Upgrade



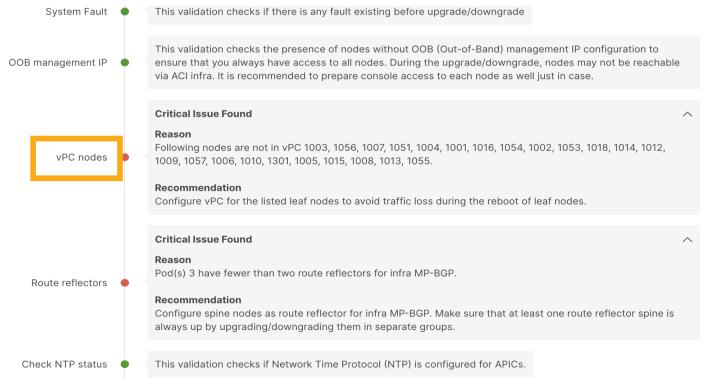
SOFTWARE UPGRADES



Pre-upgrade Check



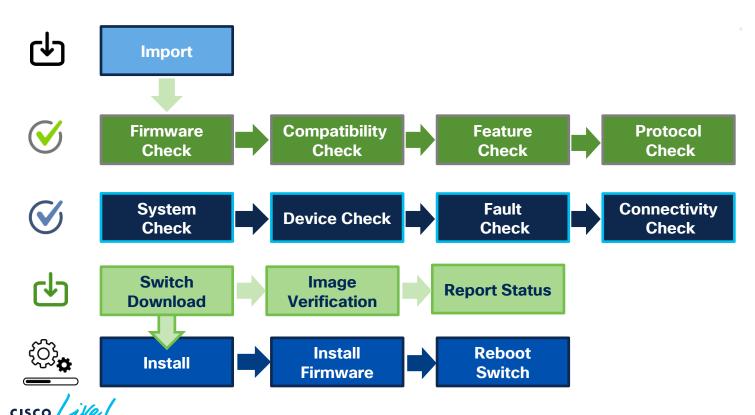
SOFTWARE UPGRADES



Fabric (Switches) Upgrade Install Workflow



SOFTWARE UPGRADES



Fabric (Switches) Upgrade Image download



SOFTWARE UPGRADES

Update Settings

Name firmware-group-1

Target Version n9000-16.0(1.356)

Selected Switches To Update



Configured Advanced Setting

- No compatibility check
- Pause upon upgrade failure

Selected Switches To Update

Filter by attributes

Pod	ID	Name Role	Model Version Last Update
1	306	scale1-leaf306 Leaf	N9K-C93180Y(n9000-16.0(1.3 2023-01-20T1′
1	415	scale1-leaf415 Leaf	N9K-C93180Y(n9000-16.0(1.3 2023-01-20T1'
1	402	scale1-leaf402 Leaf	N9K-C93180Y(n9000-16.0(1.3 2023-01-20T1'
1	401	scale1-leaf401 Leaf	N9K-C93180Y(n9000-16.0(1.3 2023-01-20T1'
1	400	000101 100f402 1 00f	NOV-002100V/ 50000-16 0/12 2022-01-20T1/

Cancel

Previous

Begin Download





1 ONBOARDING

- 2 CONFIGURATION
- VISIBILITY/MONITORING









Send us Feedback!!







How do you feel about ACI?

1 2 3 4 5

Make a suggestion

ACI UI is awesome!!



☑ Cisco may contact me about my feedback

Name

Meena

Email

mrajvaid@cisco.com

Cancel

Submit



Summary



Summary





Complete your Session Survey

- Please complete your session survey after each session. Your feedback is important.
- Complete a minimum of 4 session surveys and the Overall Conference survey (open from 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 Session Catalog and clicking the "Attendee Dashboard" at

https://www.ciscolive.com/emea/learn/sessions/session-catalog.html



Continue Your Education



Visit the Cisco Showcase for related demos.



Book your one-on-one Meet the Engineer meeting.



Attend any of the related sessions at the DevNet, Capture the Flag, and Walk-in Labs zones.



Visit the On-Demand Library for more sessions at <u>ciscolive.com/on-demand</u>.





Thank you



cisco live!

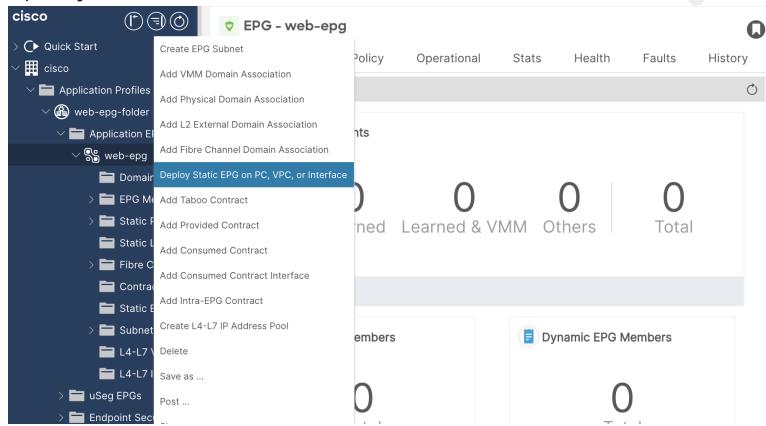




Appendix



Deploy EPG



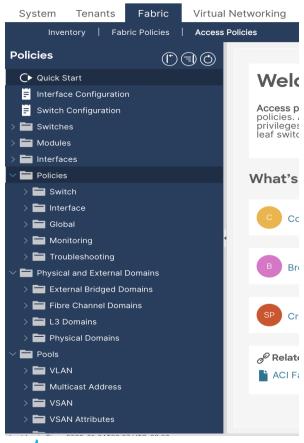


Deploy EPG

Deploy Static EPG on PC, VPC, or Interface 1. Static Link 2. Configure PTP STEP 1 > Static Link Path Type: **Direct Port Channel** Path: select an option Port Encap (or Secondary VLAN for Micro-Seg): VLAN Immediate Deployment Immediacy: Primary VLAN for Micro-Seg: VLAN V Integer Value Access (802.1P) Access (Untagged) IGMP Snoop Static Group: Group Address Source Address MLD Snoop Static Group: Group Address Source Address Cancel

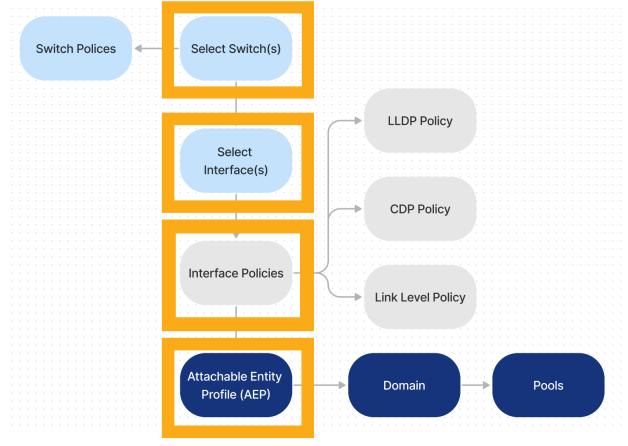


Access Policies



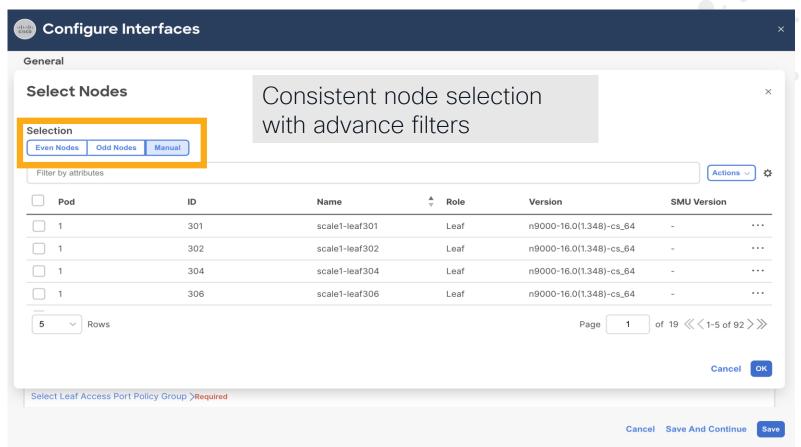
- To configure fabric access parameters
- One place to see all configured ports and switches
- Workflow to configure and convert ports and switch controls

Steps for configuring an interface





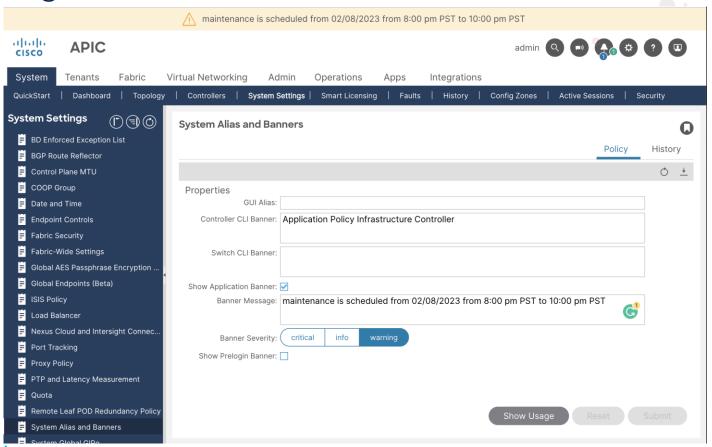
Select node(s)



BRKDCN-2659



Pre-login banner



Capacity Dashboard

Forward Scale Profile

To change the scale configuration per leaf



Proper	ties					
	Name: default					
	Description: optional					
	Type:	Dual Stack				
\triangle	Changes to the scale profile will take effect only after the impacted switches are reloaded.					

node-406 (N9K-C93180YC-EX) Scalability Options

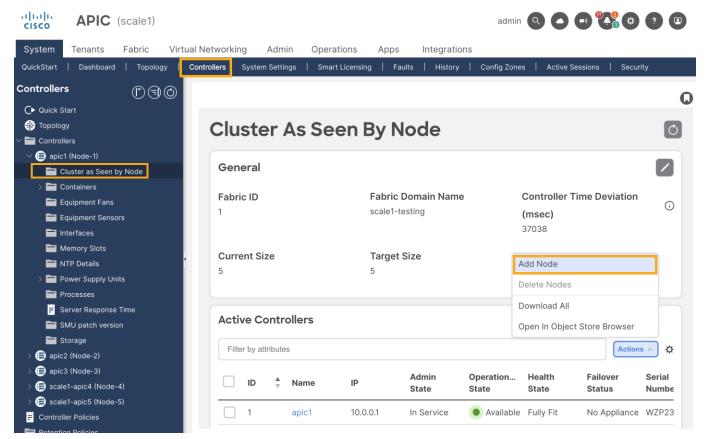
Type of Scale	VRF	BD	EPG	ESG	ESG Mac	MAC EPs	IPv4 EPs	IPv6 EPs	Multica	Policy CAM	VLAN	LPM	/32 Routes	/128 Routes
Dual Stack	800	3500	3960	4000	5000	24576	24576	12288	8192	65536	3960	20480	49152	12288
High Dual Stack	800	3500	3960	4000	5000	65536	65536	24576	512	8192	3960	38912	65536	24576
High LPM	800	3500	3960	4000	5000	24576	24576	12288	8192	8192	3960	131072	32768	12288
High Policy	800	3500	3960	4000	5000	16384	16384	8192	8192	1024	3960	8192	24576	8192
IPv4 Scale	800	3500	3960	4000	5000	49152	49152	0	8192	65536	3960	38912	57344	0



Cluster Management

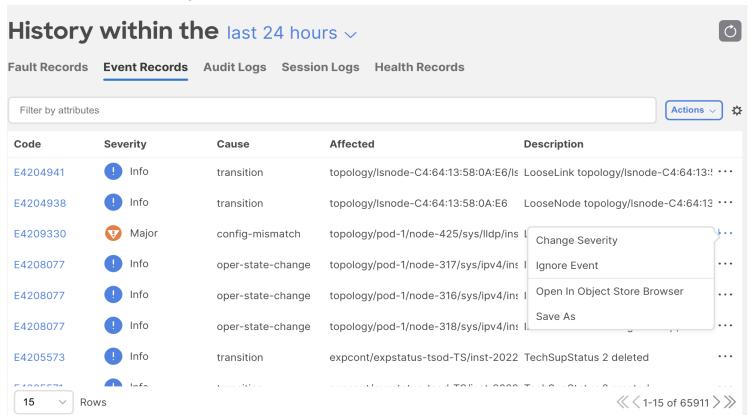
- Expanding fabric for more scale / location
- Add standby nodes for redundancy
- Migration from one generation to another
- Troubleshooting
- No more CLI inputs, configure CIMC and start adding APICs in UI

Cluster Management



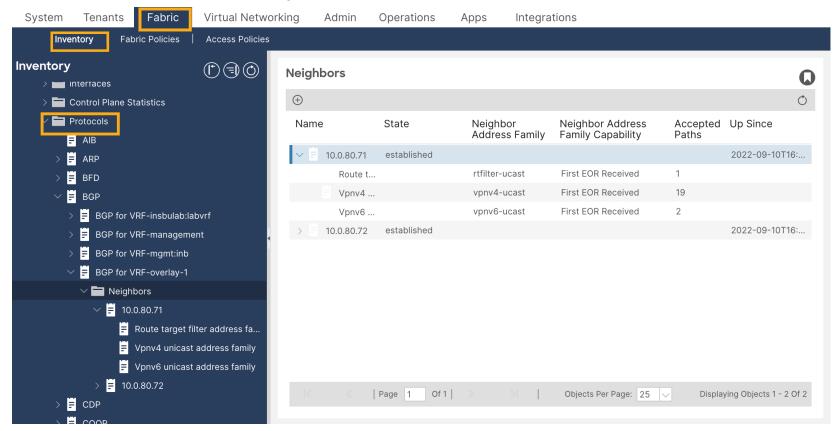


Event Analytics



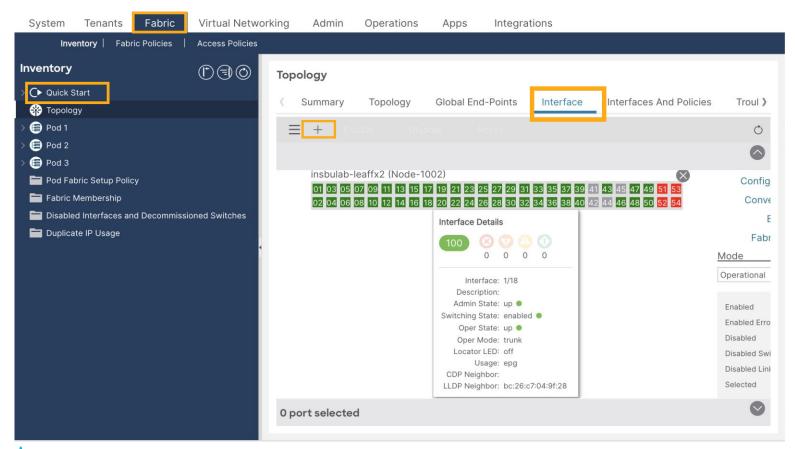


Operation visibility





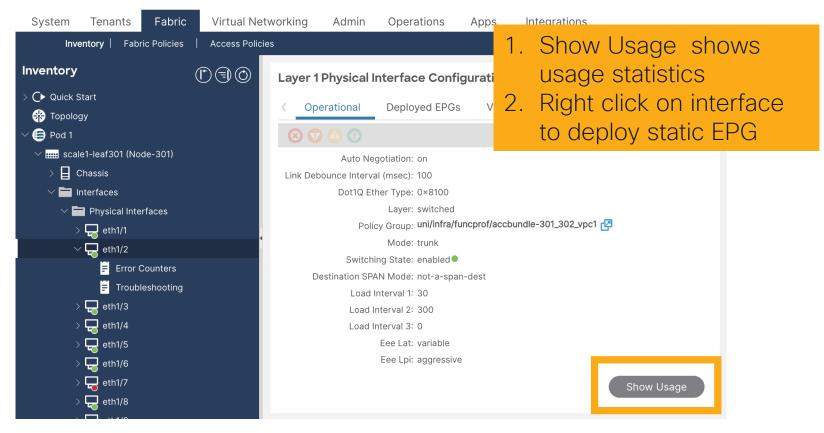
Show interface





Interface Operational data





cisco live!



