Troubleshoot Address ACI Fault Code F0467

Contents

- **Introduction**
- **Background Information**
  - Intersight Connected ACI Fabrics
- **ACI Fault F0467 Scenarios**
  - Invalid VLAN Configuration invalid-vlan
    - Scenario
    - Potential Cause: Associated VLAN Pool Does Not Contain the Required VLAN
    - Potential Cause: VLAN Pool with required VLAN Not Associated to Domain
  - Invalid Path Configuration invalid-path
    - Scenario
    - Quick Start Isolation
    - Potential Cause: Missing Domain to AAEP Association
    - Potential Cause: Missing AAEP to IPG Association
    - IPG to AAEP Association
    - Potential Cause: Missing IPG to Interface Selector Association
    - Interface Selector to Interface Policy Group Association
    - Potential Cause: Missing Interface Selector to Interface Profile Association
    - Interface Profile to Interface Selector Association
    - Potential Cause: Missing Interface Profile to Switch Profile Association
    - Interface Profile to Switch Profile Association
  - Encap Already Used in Another EPG: encap-already-in-use
    - Scenario
    - Quick Start Isolation
    - Remediation Options
- **Additional Details**
  - Successful Configuration Reference
    - EPG to Static Path Association
    - EPG to AAEP Association
    - EPG to Domain Association
    - Domain to AAEP and Vlan Pool Associations
    - Vlan Pool to Encap Block and Domain Associations
    - AAEP to Domain Association
    - IPG to AAEP Association
    - Leaf Profile to Interface Selector Association
    - Interface Selector to Interface Policy Group Association
    - Leaf Interface Profile to Interface Selectors and Leaf Switch Profile Associations
  - Vlan Deployment Verification
    - Scenario
    - Check ACI Fabric VLAN Deployment via APIC
    - Check VLAN Deployment via Switch CLI
    - Check Platform Independent VLAN Deployment via Switch CLI
    - Check SVI VLAN Deployment
  - Reference Diagrams
    - High Level Programming Sequence for a Static Path Binding
    - Access Policy Relationship Block Diagram

Standalone NXOS Commands mapped to Access Policies

VLAN Verification Command Cheat Sheet

Related Information

Introduction

This document describes next steps for remediation of ACI fault F0467: **invalid-vlan**, **invalid-path**, or **encap-already-in-use**.

Background Information

ACI Fault F0467 is flagged in different scenarios, but shows a distinct cause for each.

The most common cause are values seen with ACI Fault F0467:

- **invalid-vlan**
- **invalid-path**
- **encap-already-in-use**

All causes of ACI Fault F0467 can affect the deployment of vlans on switch node interfaces.

Intersight Connected ACI Fabrics

This fault is actively monitored as part of Proactive ACI Engagements.

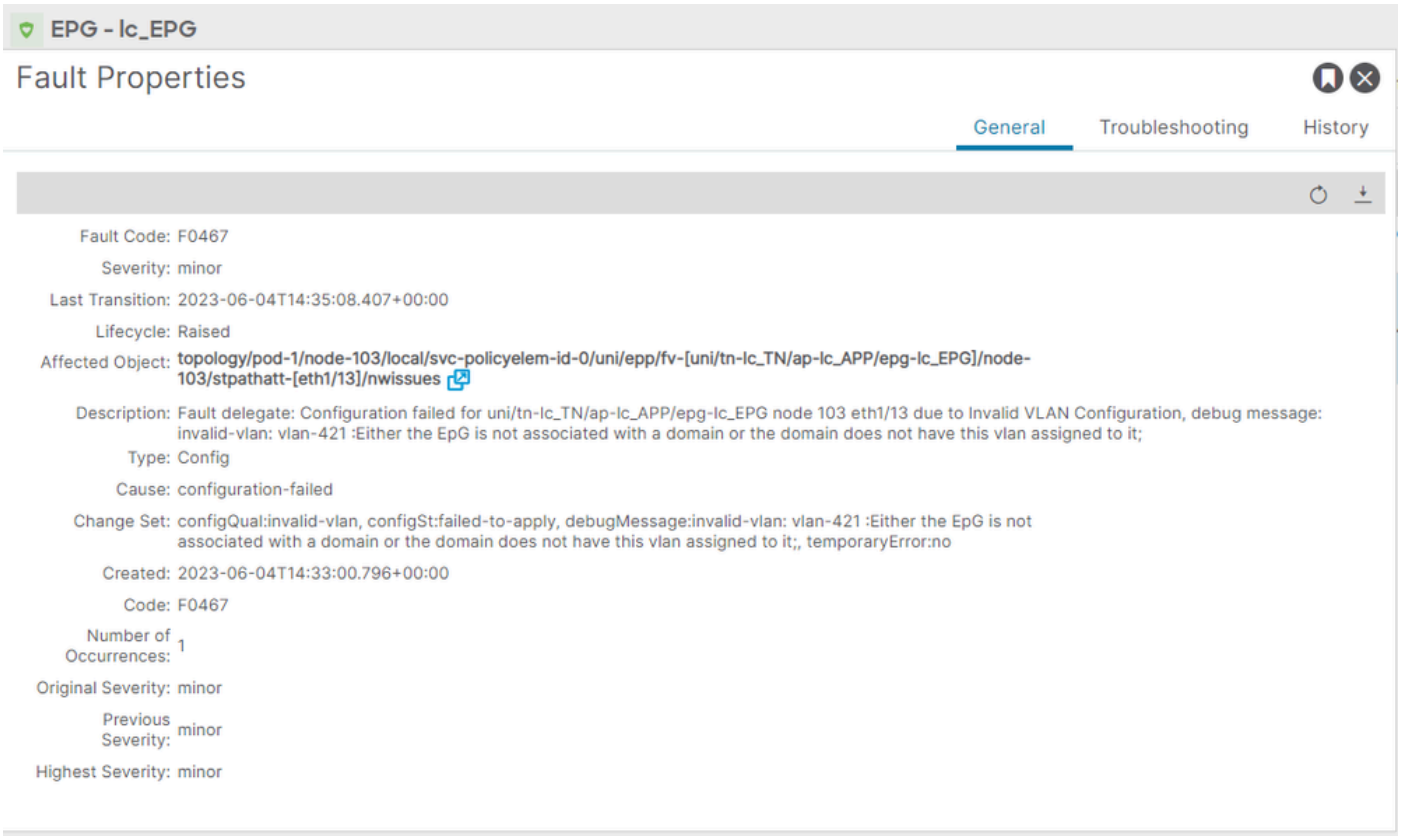
If you have an Intersight connected ACI fabric, a Service Request was generated on your behalf to indicate instances of this fault were found within your Insight Connected ACI fabric.

ACI Fault F0467 Scenarios

Invalid VLAN Configuration invalid-vlan

Scenario

- New EPG configured with encap VLAN 421
- Physical domain assigned to EPG
- Static port binding for VLAN 421 on EPG
- Fault F0467 - flagged against the switch node with a pointer to EPG
- Fault debug message contains **invalid-vlan: vlan-x** - Either the EpG is not associated with a domain or the domain does not have this vlan assigned to it.



The fault description explicitly states "**Either the EpG is not associated with a domain or the domain does not have this vlan assigned to it**".

<#root>

```
APIC# moquery -c faultInst -f 'fault.Inst.code=="F0467"' | grep lc_EPG
descr : Configuration failed for uni/tn-lc_TN/ap-lc_APP/epg-lc_EPG
```

node 103 eth1/13

due to Invalid VLAN Configuration, debug message:

invalid-vlan:

vlan-421

 :

Either the EpG is not associated with a domain or the domain does not have this vlan assigned to it

;
dn : topology/pod-1/node-103/local/svc-policyelem-id-0/uni/epp/fv-[uni/tn-lc_TN/ap-lc_APP/epg-lc_EPG]/n

---

Potential Cause: Associated VLAN Pool Does Not Contain the Required VLAN

Access Encap VLAN 421 is not deployed on the leaf node:

<#root>

Node-103#

show vlan encap-id

421

extended

<<< Empty >>>

The Static path to EPG association is not created:

<#root>

APIC#

moquery -c l2RtDomIfConn | grep lc_EPG | grep dn

<<< Empty >>>

Domain **lc_phys_dom** is associated it to the lc_EPG EPG:

<#root>

APIC#

```
moquery -c fvRsDomAtt | grep -A 25 lc_EPG | grep rn


rn : rsdomAtt-[uni/

phys-lc_phys_dom

]
```

Domain to th Vlan Pool association exists:

<#root>

```
APIC# moquery -c infraRsVlanNs | grep -A 15

lc_phys_dom

 | grep tDn
tDn : uni/infra/vlanns-[

lc_vlan_pool

]-static
```

Vlan Pool lc_vlan_pool is ranged to only include VLAN 420:

<#root>

```
APIC# moquery -c fvnsEncapBlk | grep

lc_vlan_pool


dn : uni/infra/vlanns-[lc_vlan_pool]-static/from-[

vlan-420

]-to-[

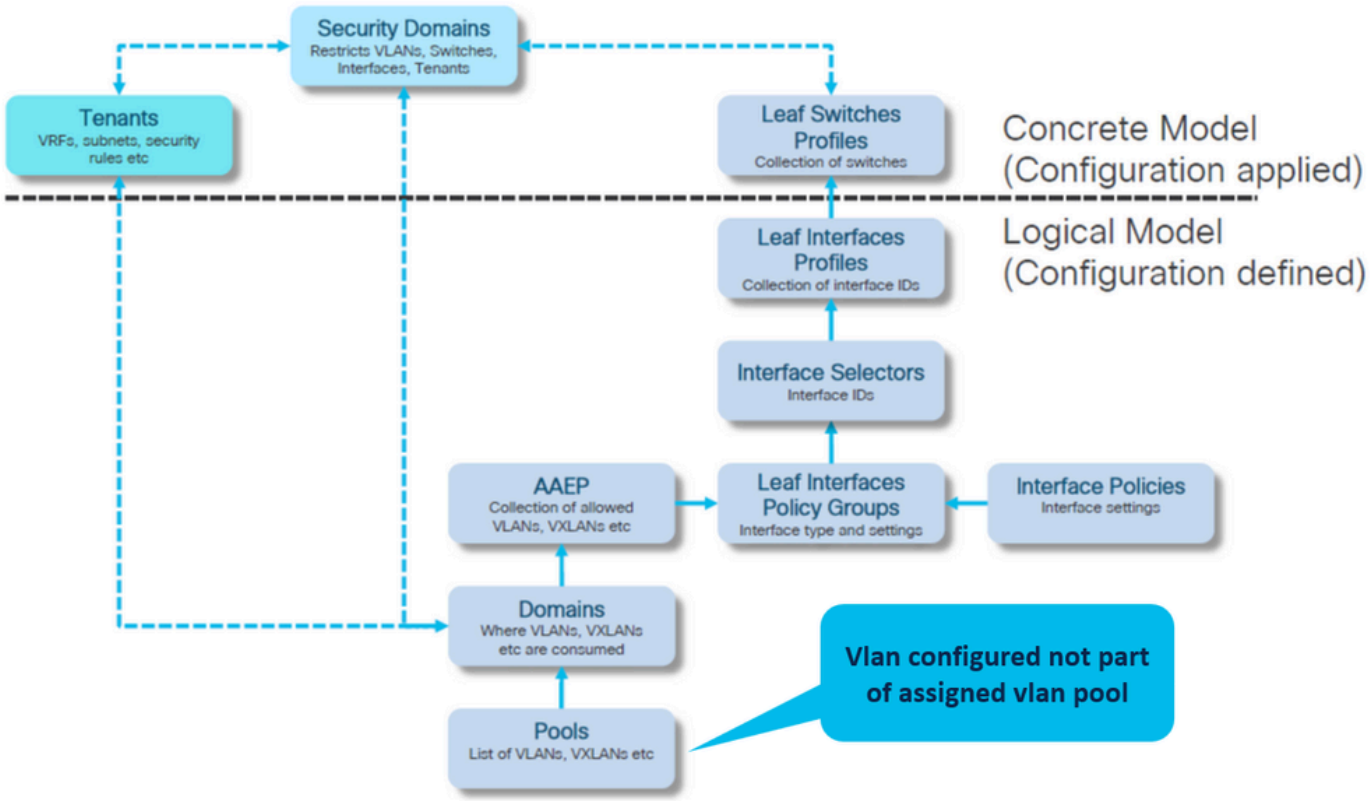
vlan-420

]
```

Vlan 421 is not in the previous pool, hence the error "**invalid-vlan: vlan-421** :**Either the EpG is not**

associated with a domain or the domain does not have this vlan assigned to it."

In the block diagram referenced earlier, this specific vlan pool reference is highlighted:

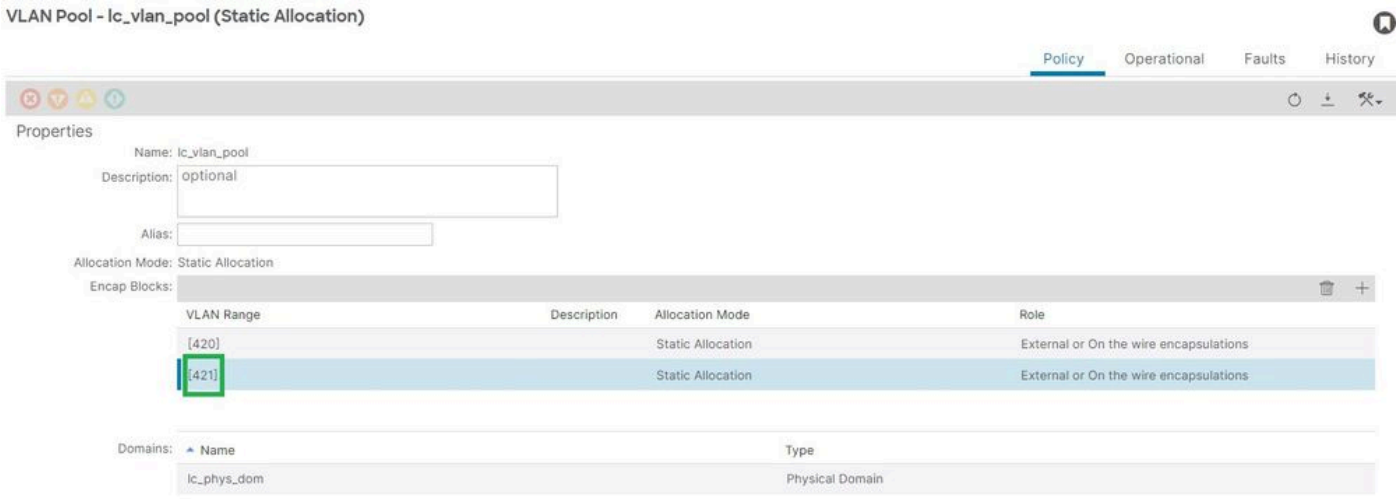


---

1. Add the missing vlan 421 to the specific vlan range.

---

2. Vlan Pool to Encap and Domain associations (**Fabric > Access Policies > Pool > VLAN > lc_vlan_pool**):



Vlan pool range verification after adding vlan 421:

<#root>

APIC#

moquery -c fvnsEncapBlk | grep lc_vlan_pool

dn : uni/infra/vlanns-[lc_vlan_pool]-static/from-[

vlan-420

]-to-[

vlan-420

]
dn : uni/infra/vlanns-[lc_vlan_pool]-static/from-[

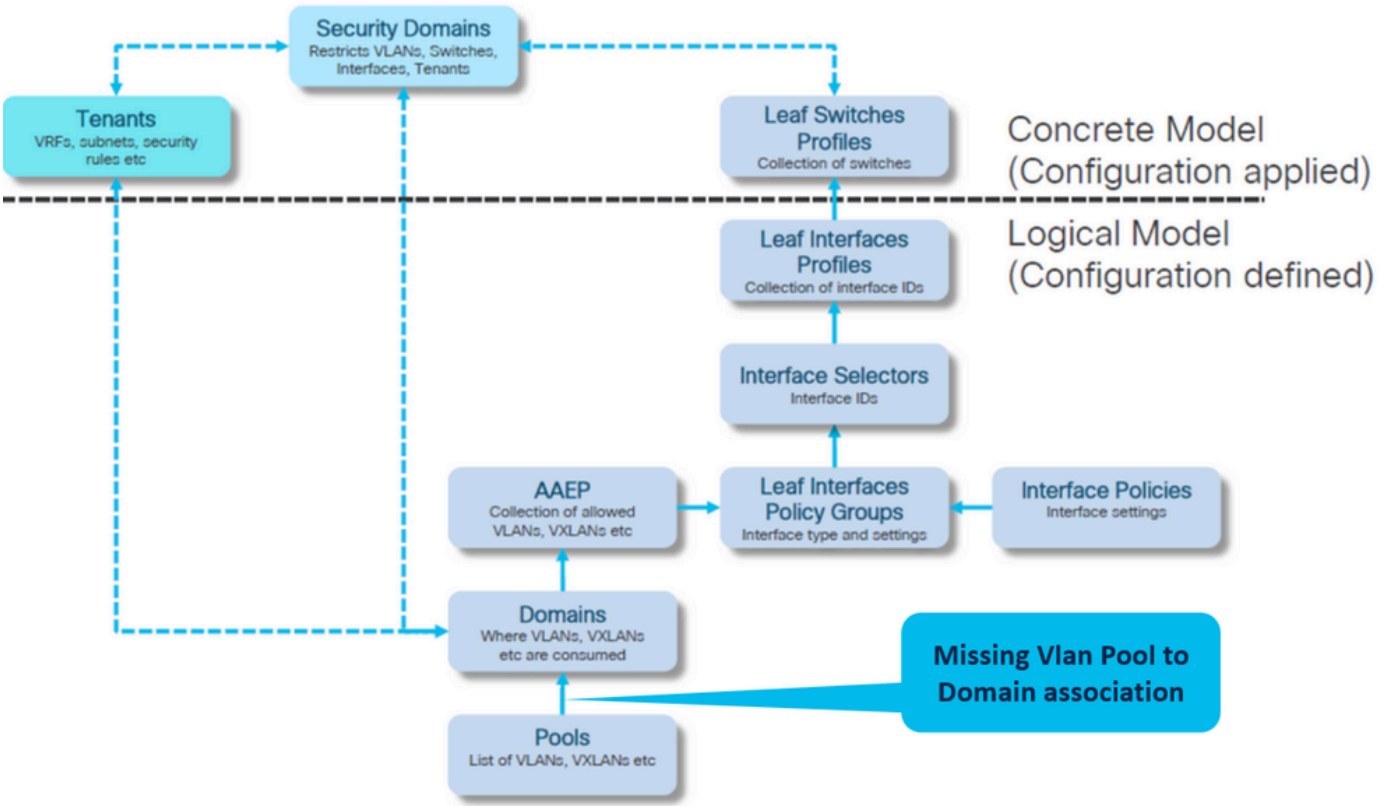
vlan-421

]-to-[

vlan-421

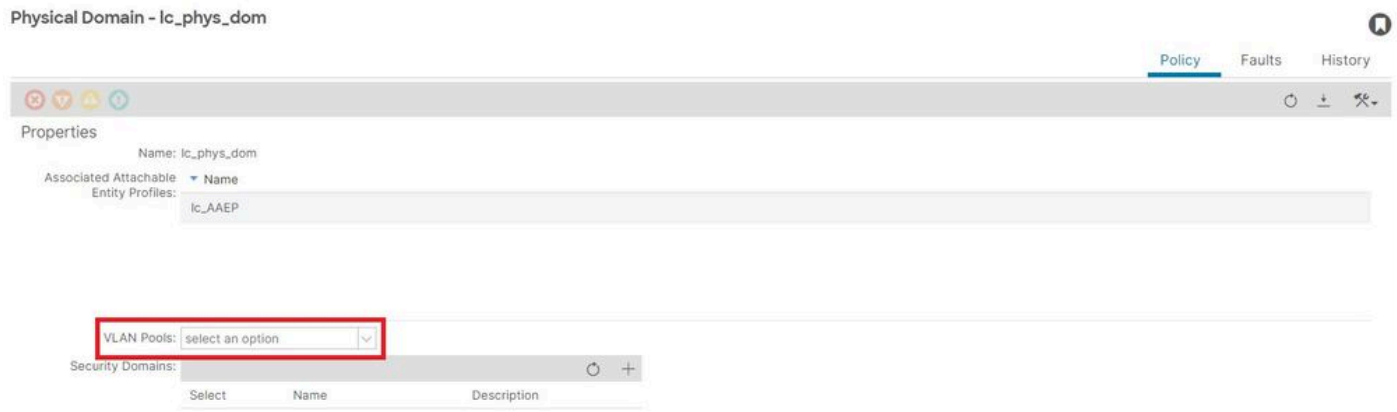
]

Potential Cause: VLAN Pool with required VLAN Not Associated to Domain



---

1. **Fabric > Access Policies > Physical and External Domains> Physical Domains > lc_phys_dom**:



[+] Domain to Vlan Pool association:

<#root>

```
APIC# moquery -c infraRsVlanNs | grep -A 15
```

lc_phys_dom

```
 | grep tDn
```

<< EMPTY >>

---

2. **Fix**: Include the missing vlan association:

- **Fabric > Access Policies > Physical and External Domains> Physical Domains > lc_phys_dom**:



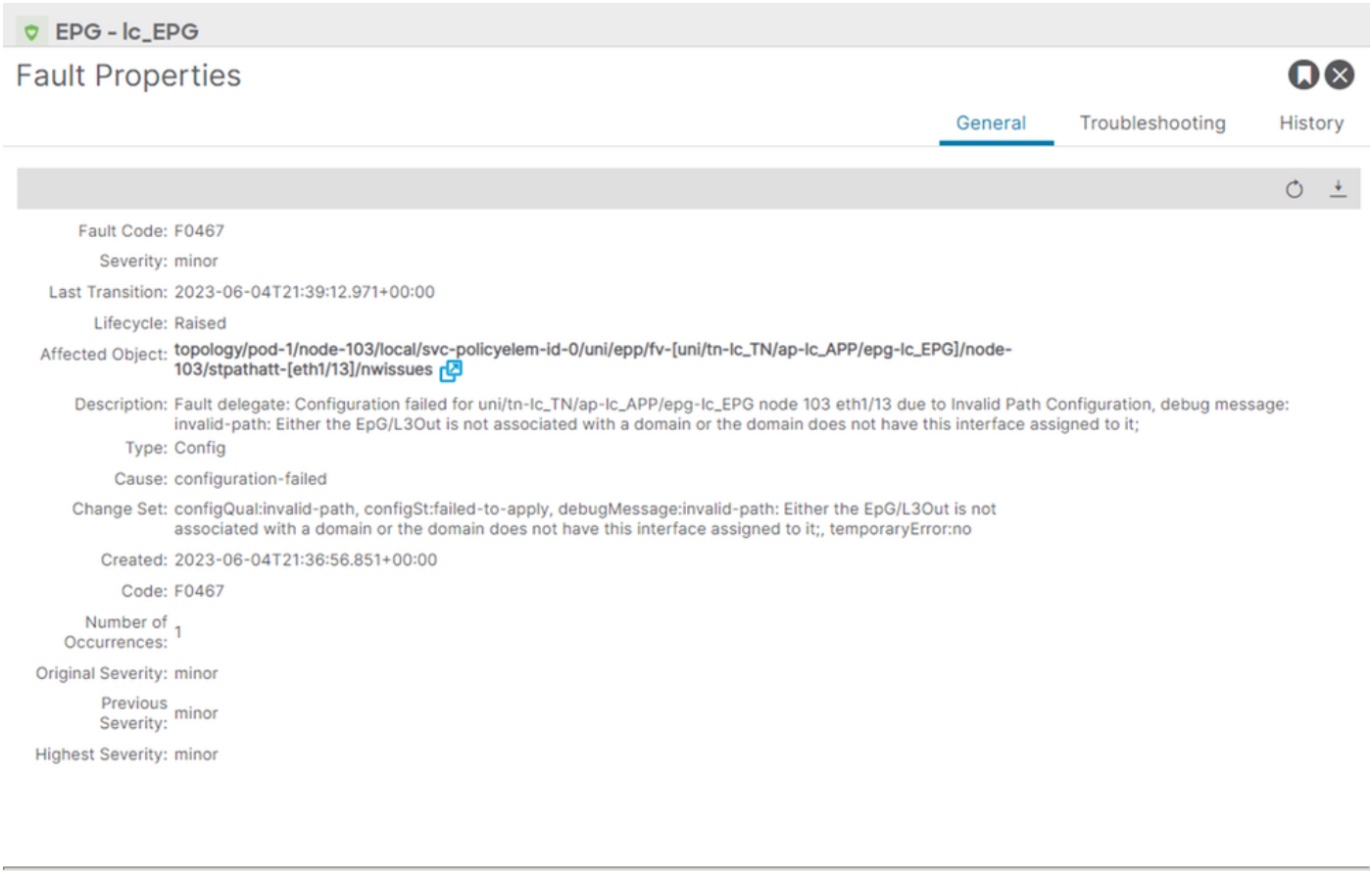
Invalid Path Configuration invalid-path

Scenario

- EPG configured
- Domain assigned to EPG
- Static port binding created on EPG for VLAN 420, node 103 eth 1/13
- Fault F0467 - flagged against the switch node with a pointer to the EPG
- Fault debug message contains **invalid-path:** Either the EpG/L3Out is not associated with a domain or the domain does not have this interface assigned to it.

This fault issue is raised when a switch/port/VLAN declaration is made without the corresponding access policies in place to allow the configuration to be applied properly. Depending on the description of this fault, a different element of the access policy relationship is possibly missing.

EPG - lc_EPG to Fault association at Tenants > lc_TN > lc_AP > lc_EPG > Faults > Fault:



The affected EPG, switch node ID, and port number are in the fault description and dn:

<#root>

```
APIC# moquery -c faultInst -f 'fault.Inst.code=="F0467"' | grep
```

lc_EPG

```
descr            : Configuration failed for
```

uni/tn-lc_TN/ap-lc_APP/epg-lc_EPG

node 103 eth1/13

```
 due to Invalid Path Configuration, debug message:
```

invalid-path:

```
 Either the EpG/L3Out is not associated with a domain or the domain does not have this interface assign
dn               : topology/pod-1/node-103/local/svc-policyelem-id-0/uni/epp/fv-[
```

uni/tn-lc_TN/ap-lc_APP/epg-lc_EPG

```
]/
```

node-

103

/stpathatt-[

eth1/

13

]/nwissues/fault-F0467

Quick Start Isolation

Confirm if the vlan is deployed. If not, these commands can be run to isolate the configuration error. In these commands, **lc_EPG** is the EPG name used for output filtering.

Encap-vlan is NOT deployed on the leaf node:

```
Node-103# show vlan encap-id 420 extended
<<< Empty >>>
```

---

[1] Static path to EPG association policy is empty:

APIC# **moquery -c l2RtDomIfConn | grep lc_EPG | grep dn**
<<< Empty >>>

[2] Domain to EPG association:

<#root>

APIC#

moquery -c fvRsDomAtt | grep -A 25 lc_EPG | grep rn

rn : rsdomAtt-[uni/

phys-lc_phys_dom

]

---

[3] Domain to Vlan Pool association:

<#root>

APIC#

moquery -c infraRsVlanNs | grep -A 15 lc_phys_dom | grep tDn

tDn : uni/infra/vlanns-[

lc_vlan_pool

]-static

---

[4] Vlan pool range verification:

<#root>

APIC#

moquery -c fvnsEncapBlk | grep lc_vlan_pool

dn : uni/infra/vlanns-[lc_vlan_pool]-static/from-[

vlan-420

]-to-[

vlan-420

]

---

[5] Domain to AAEP association:

<#root>

APIC#

moquery -c infraRtDomP | grep lc_phys_dom

```
dn : uni/phys-lc_phys_dom/rtdomP-[uni/infra/attentp-
lc_AAEP
]
```

---

[6] AAEP to Interface Policy Group association(IPG):

```
<#root>
rtp-aci08-apic1#
moquery -c infraRtAttEntP | grep lc_AAEP

dn           : uni/infra/attentp-lc_AAEP/rtattEntP-[uni/infra/funcprof/accportgrp-
lc_IPG
]
```

---

[7] IPG to Interface Selector association:

```
<#root>
APIC#
 moquery -c infraRsAccBaseGrp | grep -B 15 lc_IPG | grep dn

dn : uni/infra/accportprof-lead103_IP/hports-
lc_Interface_Selector
-typ-range/rsaccBaseGrp
```

---

[8] Interface Profile to Switch Profile association:

```
<#root>
APIC#
moquery -c infraRsAccPortP | grep leaf103_IP | grep dn
```

```
dn : uni/infra/nprof-
```

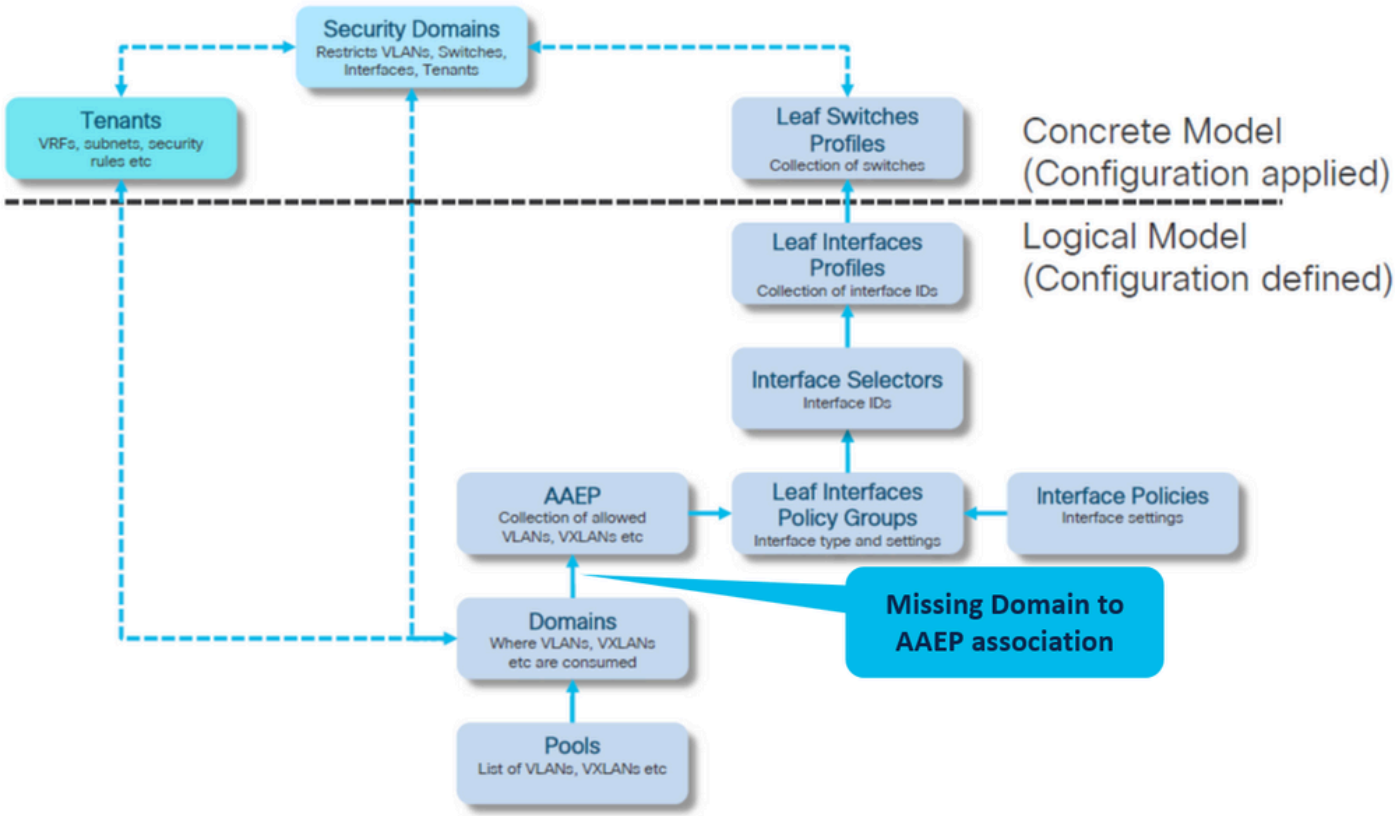
`leaf103_SP`

```
/rsaccPortP-[uni/infra/accportprof-leaf103_IP]
```

The invalid-path cause is seen if any required Access Policies associated are missing given the static path configuration. Walk through the potential causes to verify the Access Policies hop-by-hop:

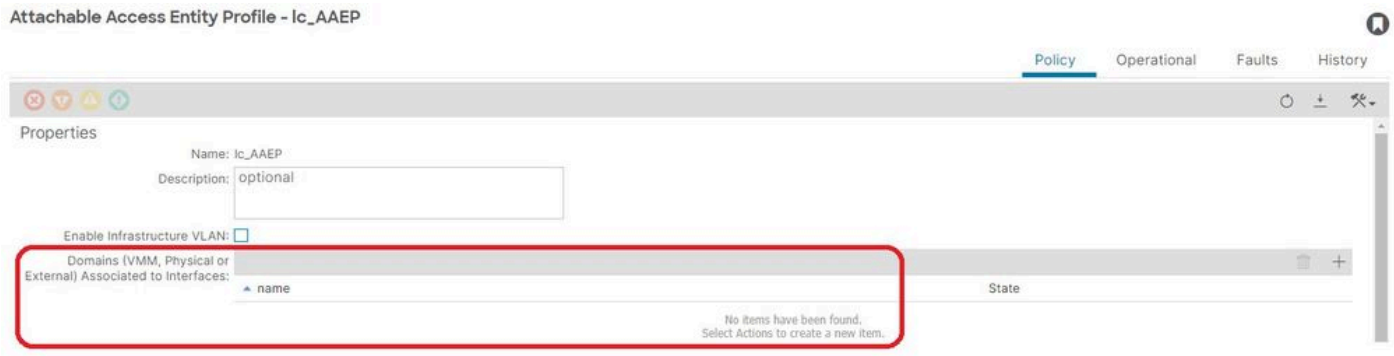
1. Missing Domain to AAEP association
2. Missing AAEP to IPG association
3. Missing IPG to Interface Selector association
4. Missing Interface Selector to Interface Profile association
5. Missing Interface Profile to Switch Profile association

Potential Cause: Missing Domain to AAEP Association



---

1. **Fabric > Access Policies > Policies > Global > AAEP > lc_AAEP**:



[+] Static path to EPG association policy is empty:

<#root>

```
APIC# moquery -c l2RtDomIfConn | grep lc_EPG | grep dn
```

<< EMPTY >>

[+] Domain to AAEP association:

<#root>

```
APIC# moquery -c infraRtDomP | grep
```

lc_phys_dom

<< EMPTY >>

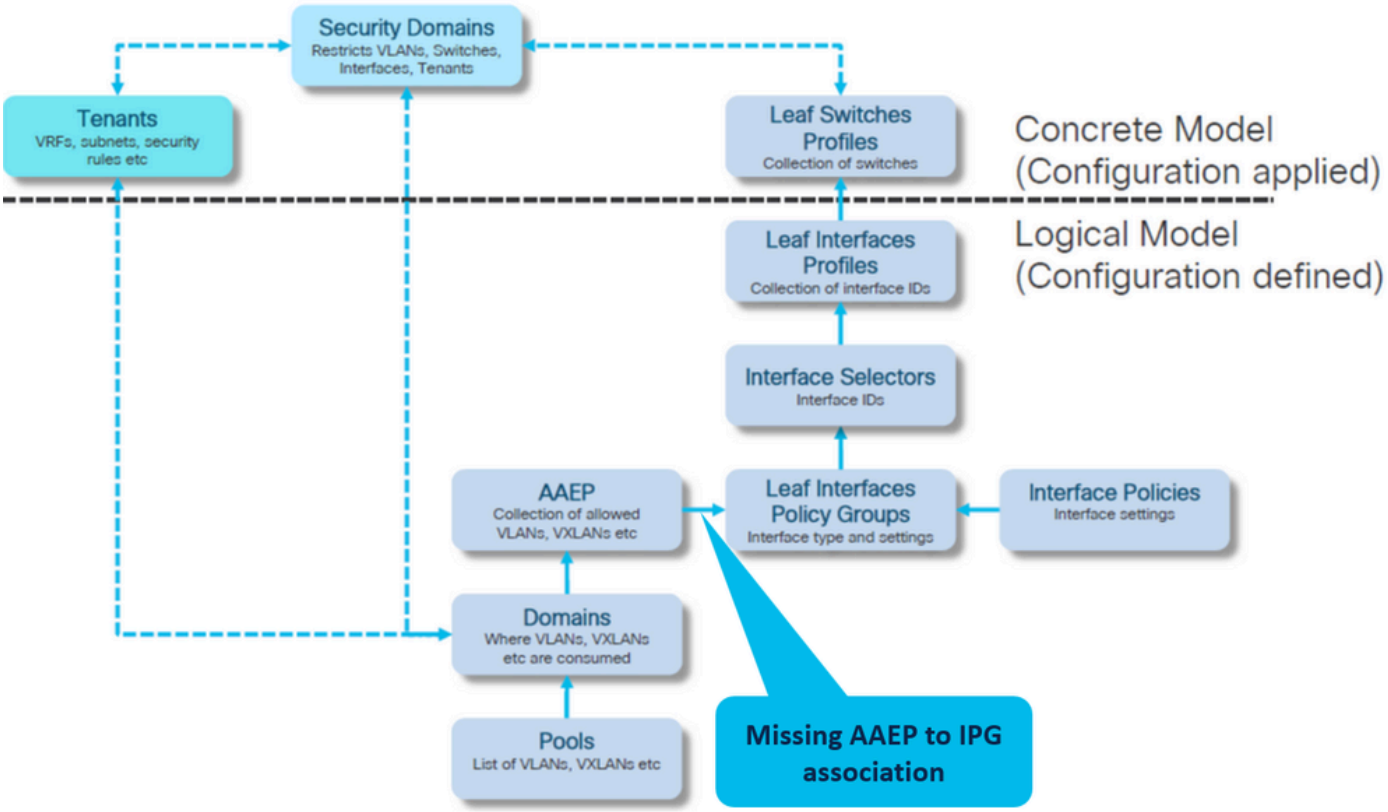
---

2. **Fix**: Vlan Pool to Encap and Domain associations (**Fabric > Access Policies > Pool > VLAN > lc_vlan_pool**)

- **Fabric > Access Policies > Physical and External Domains> Physical Domains > lc_phys_dom**:

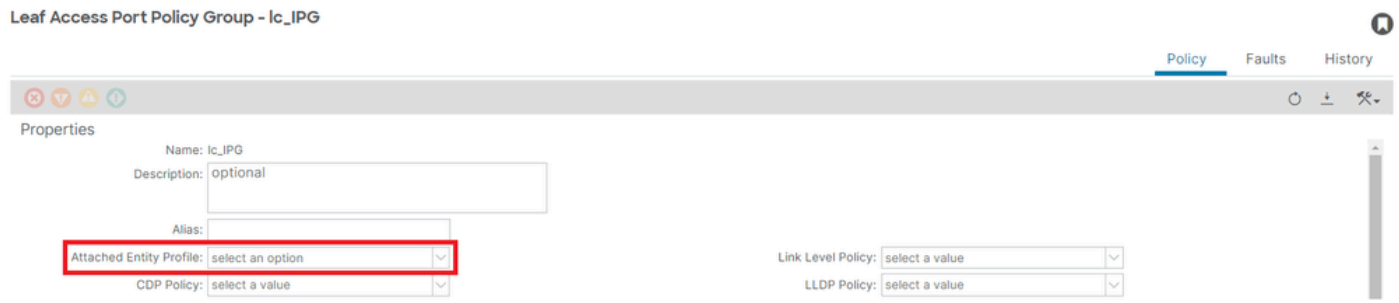


Potential Cause: Missing AAEP to IPG Association



IPG to AAEP Association

1. **Fabric > Access Policies > Interfaces > Leaf Interfaces > Policy Groups > Leaf Access Port > lc_IPG**:



[+] Static path to EPG association policy is empty:

<#root>

```
APIC# moquery -c l2RtDomIfConn | grep lc_EPG | grep dn
```

<< EMPTY >>

[+] IPG to AAEP association is empty:

<#root>

```
APIC# moquery -c infraRsAttEntP | grep -A 15
```

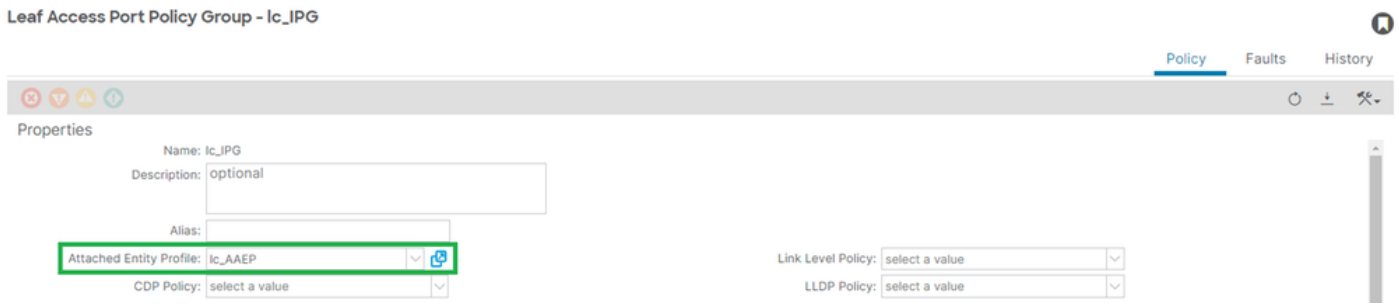
lc_IPG

```
 | grep tDn
```

<< EMPTY >>

2. **Fix:** Missing AAEP to IPG association

- **Fabric > Access Policies > Interfaces > Leaf Interfaces > Policy Groups > Leaf Access Port > lc_IPG**:



[+] IPG to AAEP association

<#root>

```
APIC# moquery -c infraRsAttEntP | grep -A 15
```

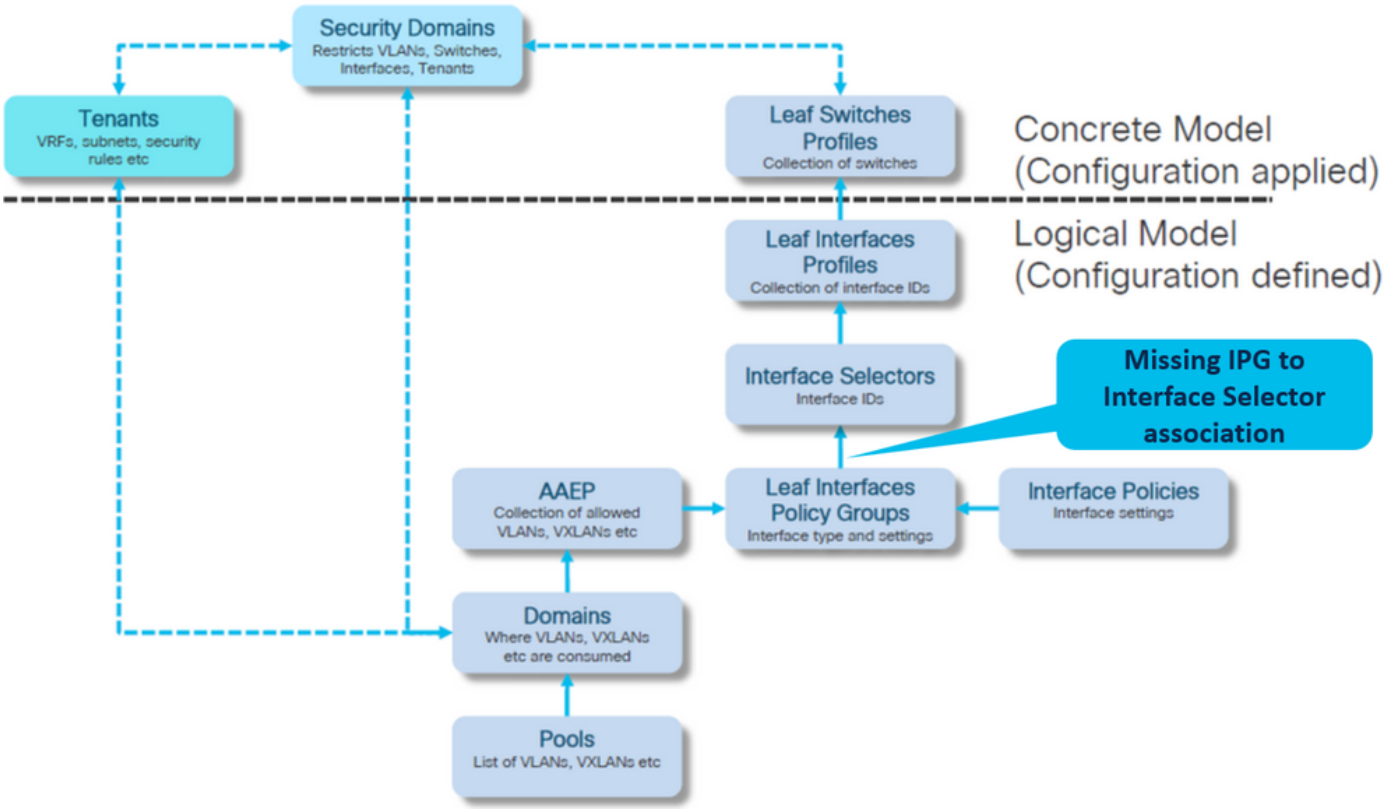
lc_IPG

```
 | grep tDn
tDn : uni/infra/attentp-
```

lc_AAEP

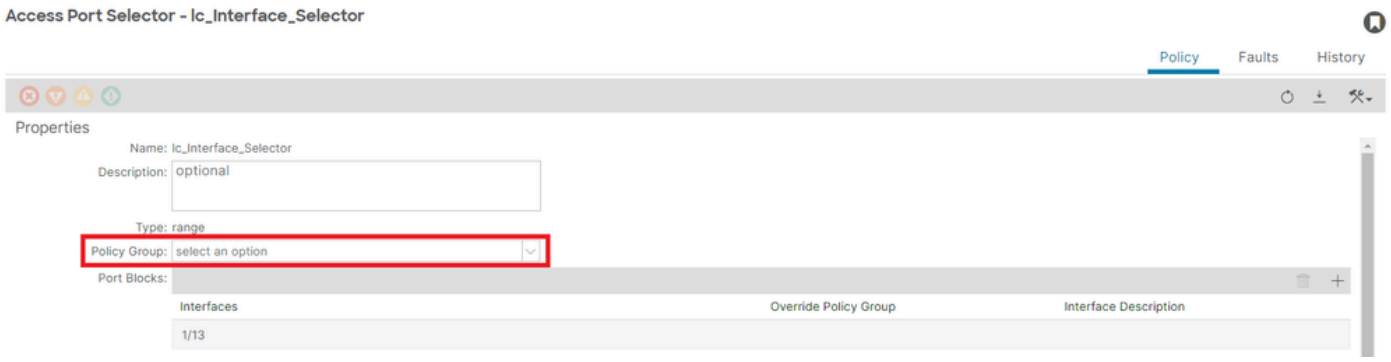
Potential Cause: Missing IPG to Interface Selector Association

---



Interface Selector to Interface Policy Group Association

1. **Fabric > Access Policies > Interfaces > Leaf Interfaces > Profiles > leaf103_IP > lc_Interface_Selector**:



[+] IPG to Interface Selector association

<#root>

```
APIC# moquery -c infraRsAccBaseGrp | grep -B 15
```

lc_IPG

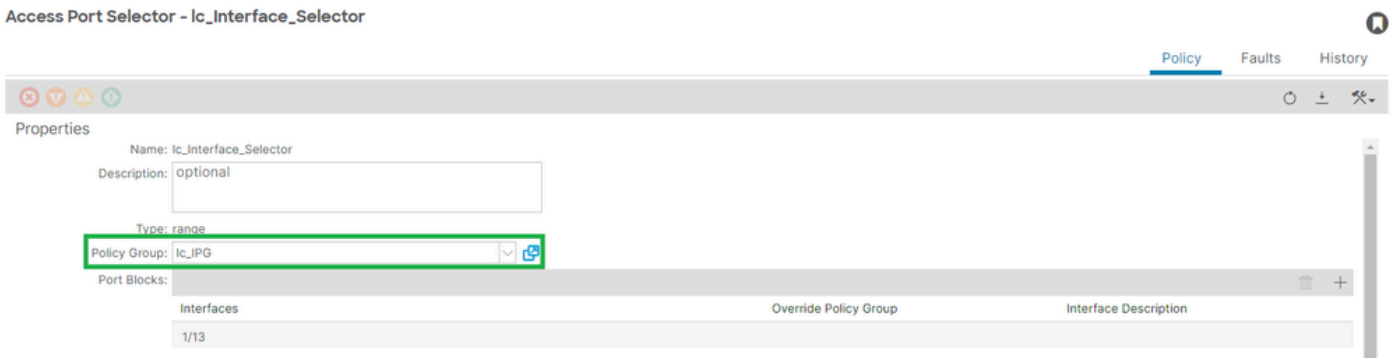
```
 | grep dn
```

<< EMPTY >>

---

2. **Fix**: Interface Selector to Interface Policy Group association

---



[+] IPG to Interface Selector association:

<#root>

```
APIC# moquery -c infraRsAccBaseGrp | grep -B 15
```

lc_IPG

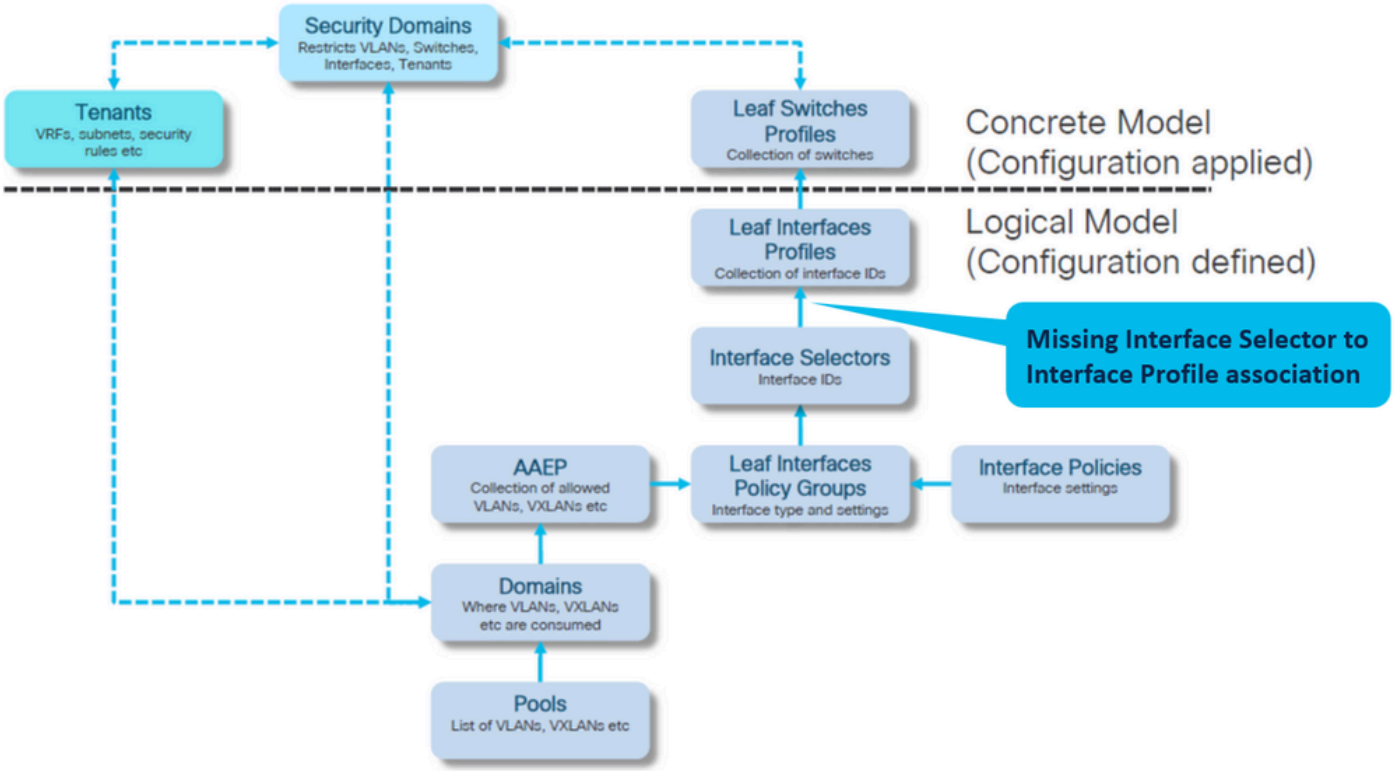
```
 | grep dn
dn : uni/infra/accportprof-lead103_IP/hports-
```

lc_Interface_Selector

```
-typ-range/rsaccBaseGrp
```

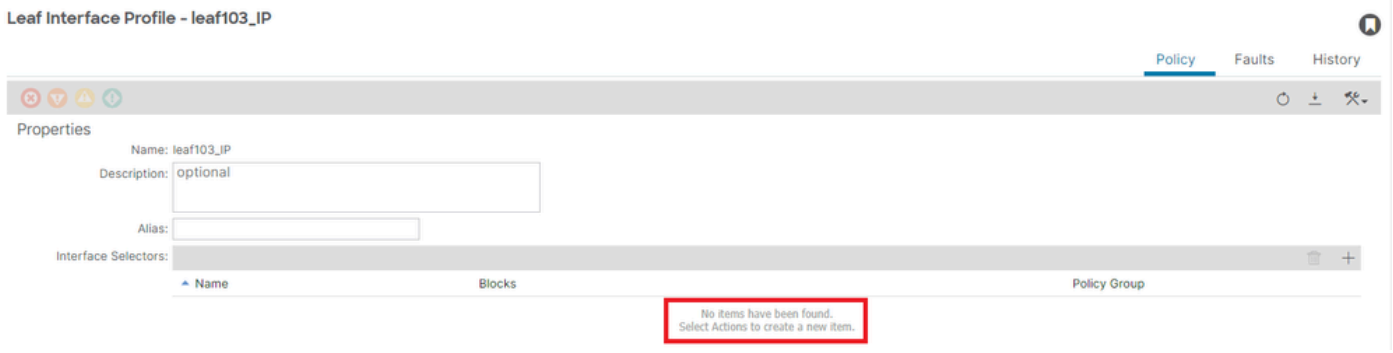
Potential Cause: Missing Interface Selector to Interface Profile Association

---



Interface Profile to Interface Selector Association

1. **Fabric > Access Policies > Interfaces > Leaf Interfaces > Profiles > leaf103_IP**:



Troubleshooting:

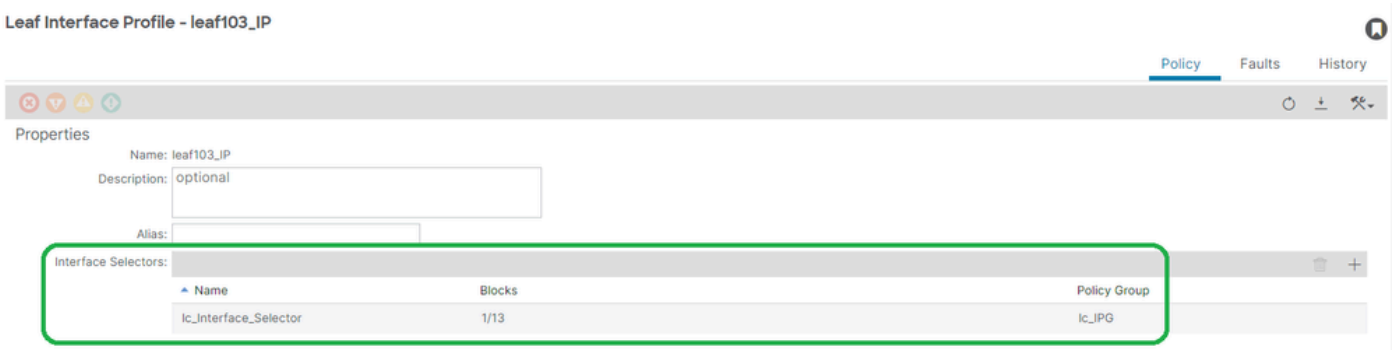
<#root>

```
APIC# moquery -c infraHPortS | grep leaf103_IP
```

<< EMPTY >>

---

2. **Fix:** Interface Profile to Interface Selector association:



<#root>

```
APIC# moquery -c infraHPortS | grep
```

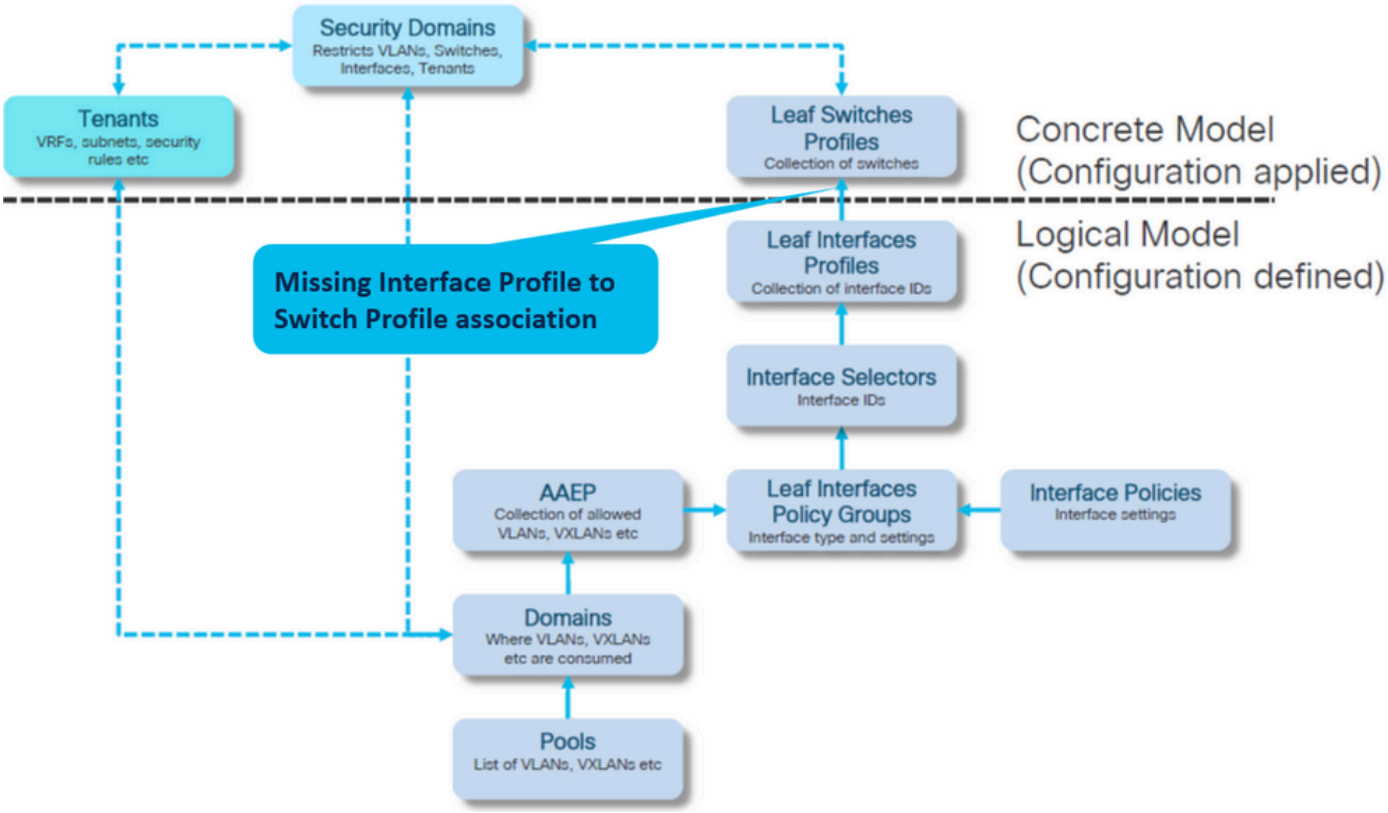
leaf103_IP

```
dn : uni/infra/accportprof-leaf103_IP/hports-
```

lc_Interface_Selector

```
-typ-range
```

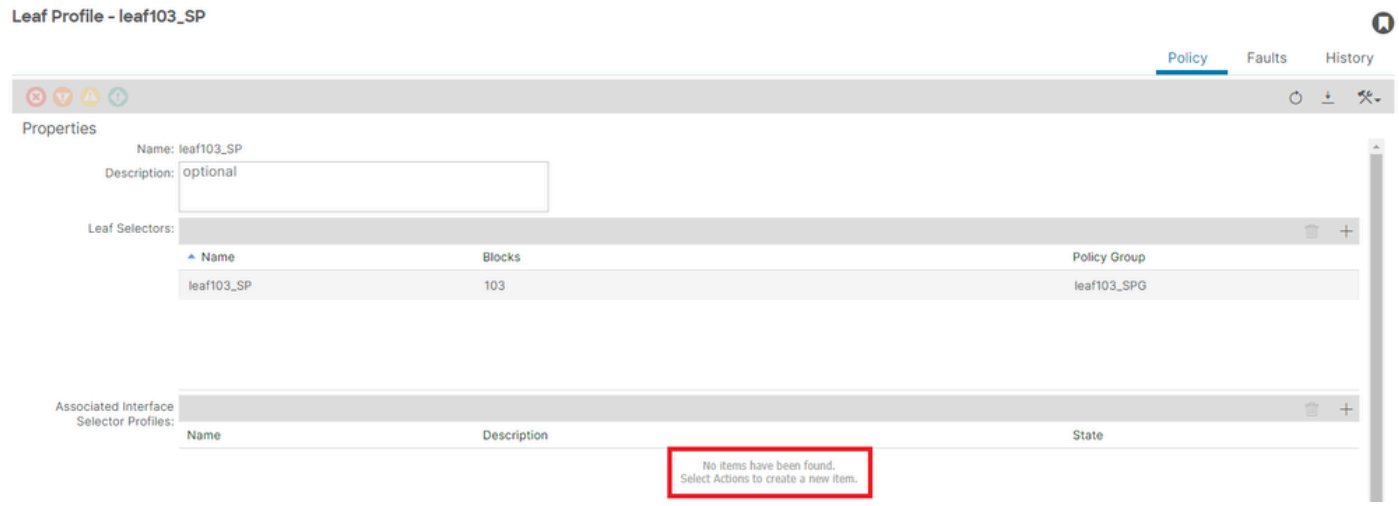
Potential Cause: Missing Interface Profile to Switch Profile Association



Interface Profile to Switch Profile Association

---

1. **Fabric > Access Policies > Switches > Leaf Switches > Profiles > leaf103_SP**



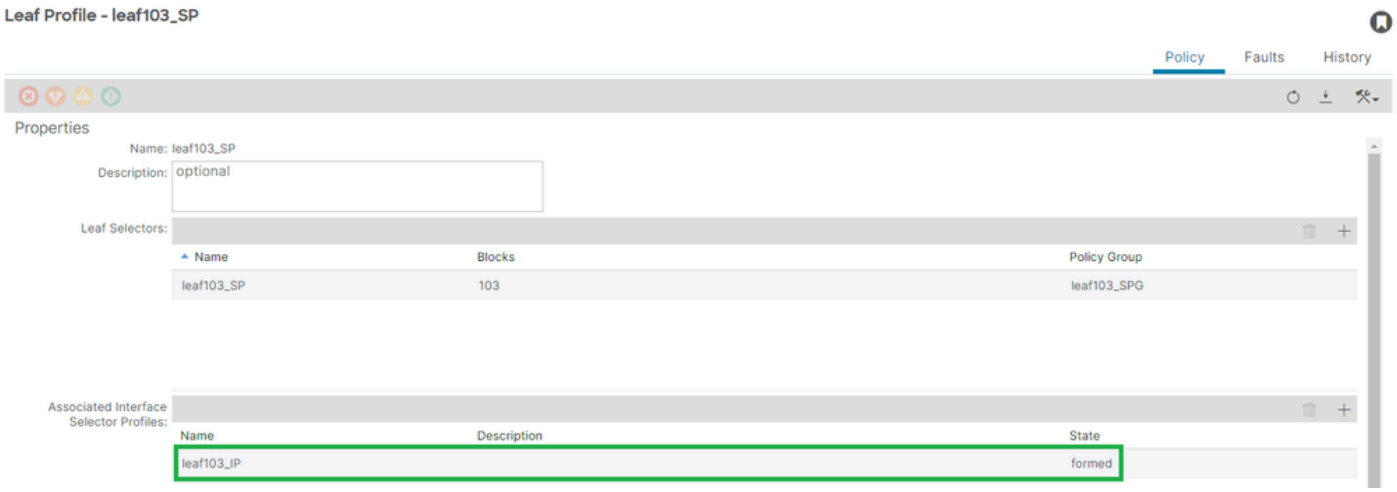
<#root>

```
APIC# moquery -c infraRsAccPortP | grep leaf103_IP | grep dn
```

<< EMPTY >>

---

2. **Fix**: Leaf Profile to Interface Selector Profiles association:



[+] Interface Profile to Switch Profile association:

<#root>

```
APIC# moquery -c infraRsAccPortP | grep
```

leaf103_IP

```
 | grep dn
dn : uni/infra/nprof-
```

leaf103_SP

```
/rsaccPortP-[uni/infra/accportprof-leaf103_IP]
```

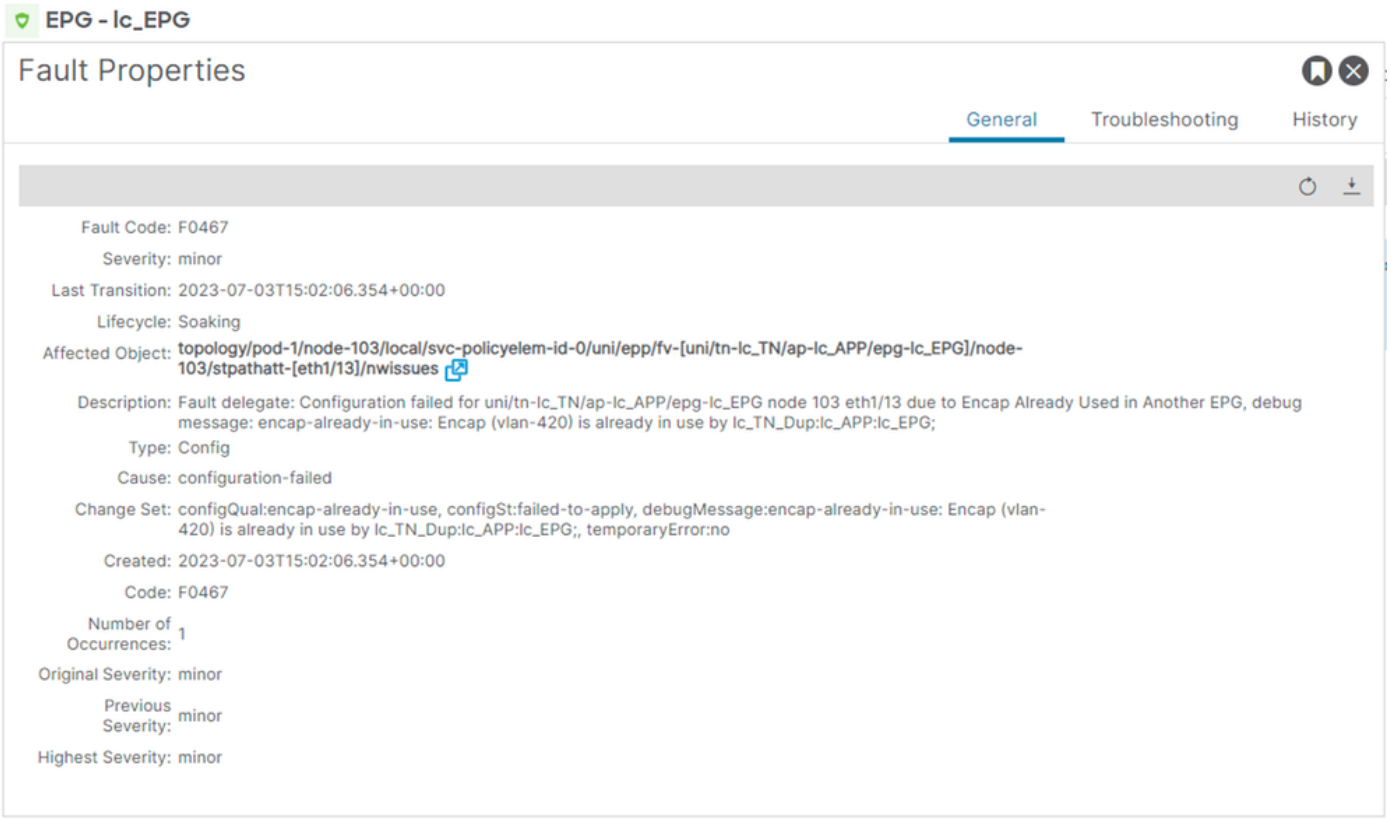
Encap Already Used in Another EPG: encap-already-in-use

Scenario

By default, VLANs have a global scope. A given VLAN ID can only be used for a single EPG on a leaf switch. Any attempt to re-use the same VLAN on multiple EPGs within a given leaf switch results in an

encap-already-in-use F0467 fault.

EPG to Fault association at **Tenants > lc_TN > lc_AP > lc_EPG > Faults > Fault**:




```
APIC# moquery -c faultInst -f 'fault.Inst.code=="F0467"' | grep lc_EPG
changeSet : configQual:encap-already-in-use, configSt:failed-to-apply, debugMessage:encap-already-in-us
descr : Configuration failed for uni/tn-lc_TN/ap-lc_APP/epg-lc_EPG node 103 eth1/13 due to Encap Alread
dn : topology/pod-1/node-103/local/svc-policyelem-id-0/uni/epp/fv-[uni/tn-lc_TN/ap-lc_APP/epg-lc_EPG]/n
```

Quick Start Isolation

[+] You can confirm the encap already in use on a different **tenant lc_TN_Dup**:

```
Node-103# show vlan extended | egrep "Encap|----|vlan-420"
 VLAN Name                             Encap            Ports
 ---- -------------------------------- ---------------- ------------------------
 3    lc_TN_Dup:lc_APP:lc_EPG          vlan-420         Eth1/13
```

Remediation Options

- Option 1: Use a different vlan number not in use on the leaf or VPC pair.
- Option 2: Use the same vlan on a different leaf or VPC pair that does not have a Vlan attempting to be deployed.
- Option 3: Remove the static port association on the duplicated EPG, this allows for new deployment.
- Option 4: In ACI versions prior to the v1.1 release, a given VLAN encapsulation maps to only a single EPG on a leaf switch. If there is a second EPG that has the same VLAN encapsulation on the same leaf switch, the ACI raises this fault.

Starting with the v1.1 release, you can deploy multiple EPGs with the same VLAN encapsulation on a given leaf switch (or FEX), in the Per Port VLAN Configuration Guide:

Additional Details

Successful Configuration Reference

This section can be used as a reference guide for what a complete configuration with a functional setup looks like.

EPG to Static Path Association

Tenants > lc_TN > lc_AP > lc_EPG > Static Ports:



[+] Static port to EPG association policy:

<#root>

```
APIC# moquery -c l2RtDomIfConn | grep lc_EPG | grep dn
```

dn : topology/pod-1/node-103/sys/ctx-[vxlan-2195458]/bd-[vxlan-16416666]/vlan-[

vlan-420

]/rtfvDomIfConn-[uni/epp/fv-[uni/tn-lc_TN/ap-lc_APP/epg-

lc_EPG

]/

node-103

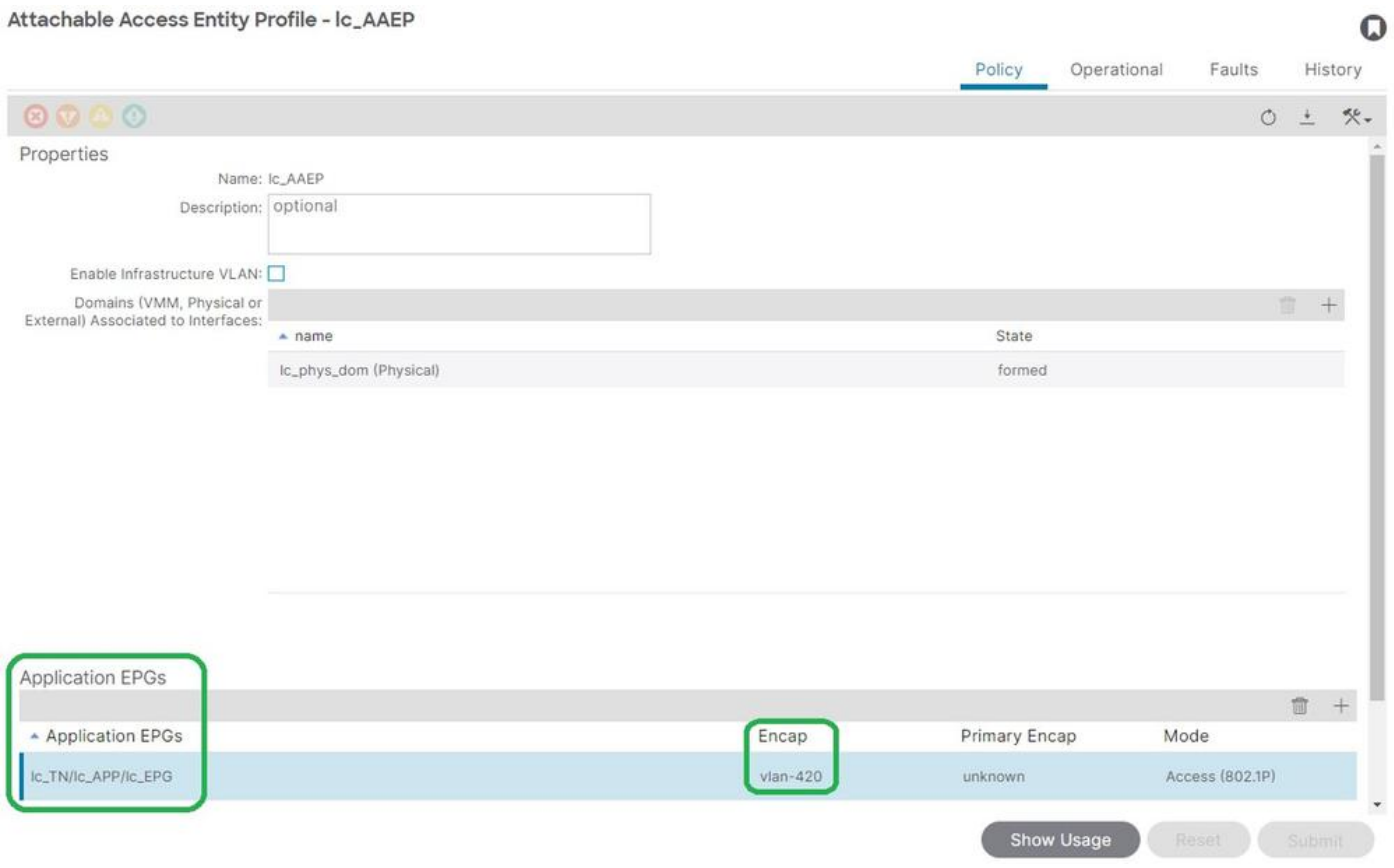
/stpathatt-[

eth1/13

]/conndef/conn-[vlan-420]-[0.0.0.0]]

EPG to AAEP Association

1. **Fabric > Access Policies > Policies > Global > AAEP > lc_AAEP**:



<#root>

```
APIC# moquery -c fvIfConn -f 'fv.IfConn.encap=="
```

vlan-420

```
"' | grep dn
dn : uni/epp/fv-[uni/tn-lc_TN/ap-lc_APP/epg-lc_EPG]/node-103/attEntitypathatt-[lc_AAEP]/conndef/conn-[
```

vlan-420

```
]-[0.0.0.0]
```

EPG to Domain Association

Tenants > lc_TN > lc_AP > lc_EPG > Domains:



[+] Domain lc_phys_dom has been associated it to EPG.

<#root>

```
APIC# moquery -c fvRsDomAtt | grep -A 25
```

lc_EPG

```
 | grep rn
rn : rsdomAtt-[uni/
```

phys-lc_phys_dom

```
]
```

Domain to AAEP and Vlan Pool Associations

1. **Fabric > Access Policies > Physical and External Domains> Physical Domains > lc_phys_dom**:



[+] Domain to AAEP association:

<#root>

```
APIC# moquery -c infraRtDomP | grep
```

lc_phys_dom

```
dn : uni/phys-lc_phys_dom/rtdomP-[uni/infra/attentp-
```

lc_AAEP

```
]
```

[+] Domain to Vlan Pool association

<#root>

```
APIC# moquery -c infraRsVlanNs | grep -A 15
```

lc_phys_dom

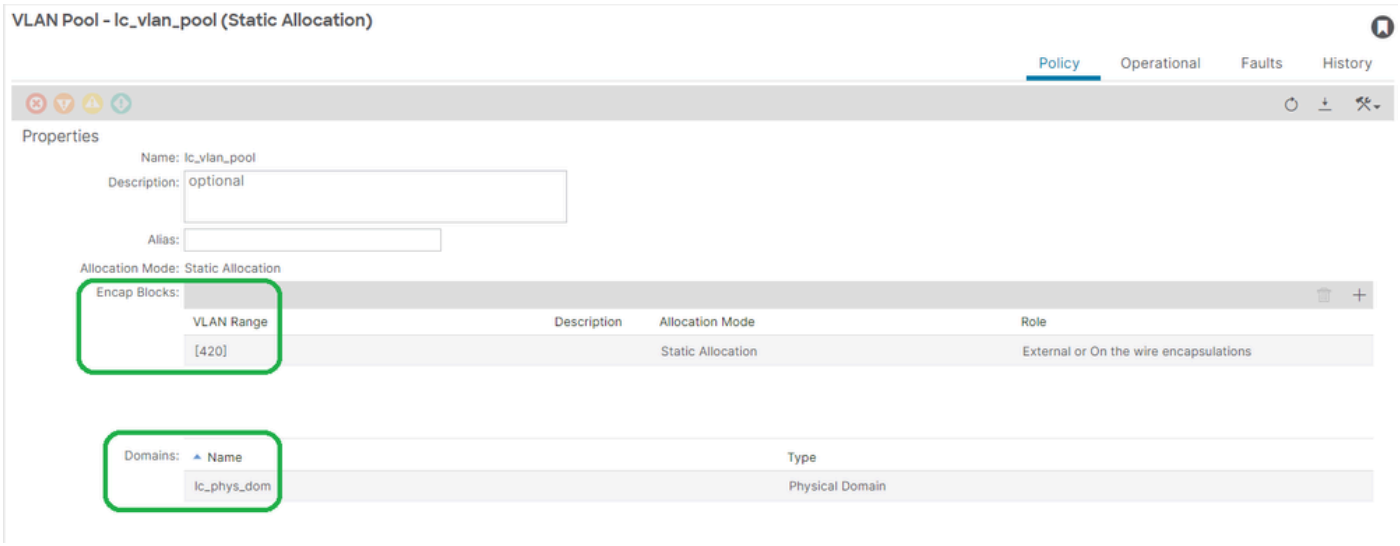
```
 | grep tDn
tDn : uni/infra/vlanns-[
```

lc_vlan_pool

```
]-static
```

Vlan Pool to Encap Block and Domain Associations

1. **Fabric > Access Policies > Pool > VLAN > lc_vlan_pool**:



[+] Vlan pool range verification:

<#root>

```
APIC# moquery -c fvnsEncapBlk | grep
```

`lc_vlan_pool`

```
dn : uni/infra/vlanns-[lc_vlan_pool]-static/from-[
```

`vlan-420`

```
]-to-[
```

`vlan-420`

```
]
```

[+] Domains where the lc_vlan_pool is been used:

<#root>

```
APIC# moquery -c fvnsRtVlanNs | grep
```

`lc_vlan_pool`

```
dn            : uni/infra/vlanns-[lc_pool]-dynamic/rtinfraVlanNs-[uni/
phys-lc_phys_dom
]
```

AAEP to Domain Association

1. **Fabric > Access Policies > Policies > Global > AAEP > lc_AAEP**:



<#root>

```
APIC# moquery -c infraRsDomP | grep
lc_AAEP
dn : uni/infra/attentp-lc_AAEP/rsdomP-[uni/phys-
lc_phys_dom
]
```

IPG to AAEP Association

1. **Fabric > Access Policies > Interfaces > Leaf Interfaces > Policy Groups > Leaf Access Port > lc_IPG**:



[+] IPG to AAEP association:

<#root>

```
APIC# moquery -c infraRsAttEntP | grep -A 15
```

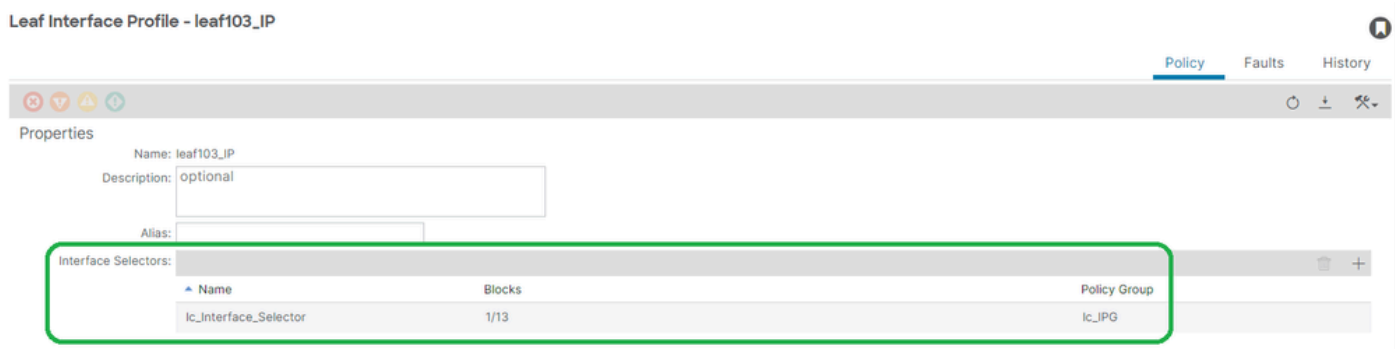
lc_IPG

```
 | grep tDn
tDn : uni/infra/attentp-
```

lc_AAEP

Leaf Profile to Interface Selector Association

1. **Fabric > Access Policies > Interfaces > Leaf Interfaces > Profiles > leaf103_IP**:



<#root>

```
APIC# moquery -c infraHPortS | grep
```

leaf103_IP

```
dn : uni/infra/accportprof-leaf103_IP/hports-
```

lc_Interface_Selector

```
-typ-range
```

Interface Selector to Interface Policy Group Association

1. **Fabric > Access Policies > Interfaces > Leaf Interfaces > Profiles > leaf103_IP > lc_Interface_Selector**:



[+] IPG to Interface Selector association:

<#root>

```
APIC# moquery -c infraRsAccBaseGrp | grep -B 15
```

lc_IPG

```
 | grep dn
dn : uni/infra/accportprof-
```

lead103_IP

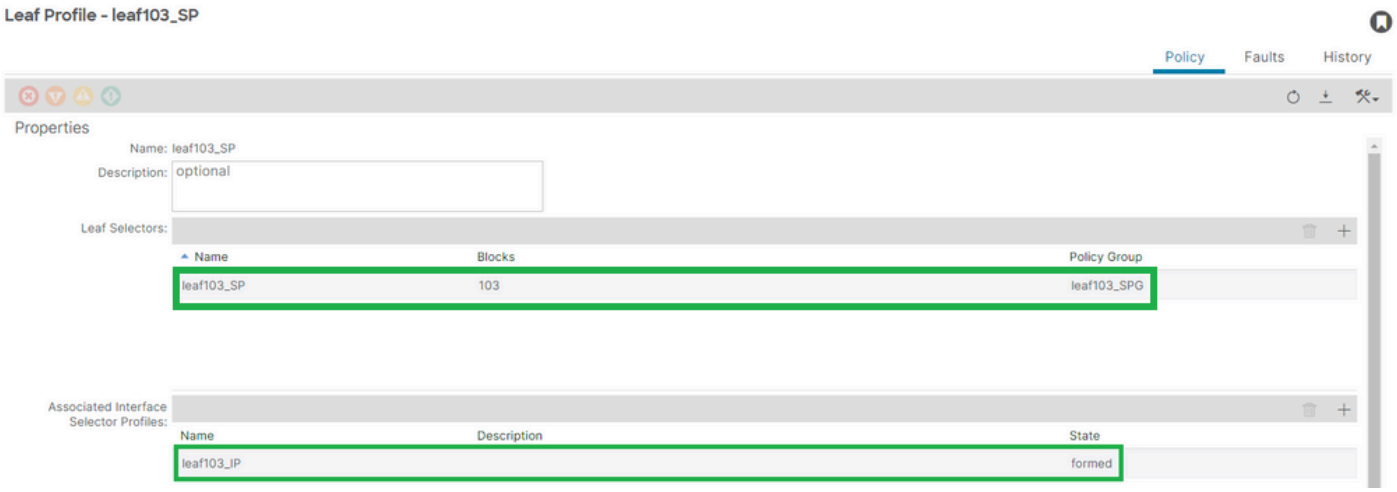
```
/hports-
```

lc_Interface_Selector

```
-typ-range/rsaccBaseGrp
```

Leaf Interface Profile to Interface Selectors and Leaf Switch Profile Associations

1. **Fabric > Access Policies > Switches > Leaf Switches > Profiles > leaf103_SP**:



[+] Leaf Interface Profile to Switch Profile association:

<#root>

```
APIC# moquery -c infraRsAccPortP | grep
```

leaf103_IP

```
 | grep dn
dn : uni/infra/nprof-
```

leaf103_SP

```
/rsaccPortP-[uni/infra/accportprof-
```

leaf103_IP

```
]
```

[+] Switch Profile to Switch Policy Group Association:

<#root>

```
APIC# moquery -c infraRsAccNodePGrp | grep -A 8
```

leaf103_SP

```
 | grep tDn
tDn : uni/infra/funcprof/accnodepgrp-
```

leaf103_SPG

Vlan Deployment Verification

Scenario

- Access Encap VLAN 420 is deployed on node 103 - E1/13
- All relevant Access Policy and EPG configuration deployed

Check ACI Fabric VLAN Deployment via APIC

A moquery against class fvIcConn can be filtered on VLAN encaps of interest to show every EPG/Switch/Interface combination where the VLAN has been deployed:

<#root>

APIC#

moquery -c fvIfConn -f

'fv.IfConn.encap=="vlan-420"' | grep dn

dn : uni/epp/fv-[uni/tn-lc_TN/ap-lc_APP/epg-lc_EPG]/node

-

103

/stpathatt-[

eth1/

13

]/conndef/conn-[

vlan-

420

```
]-[0.0.0.0]
```

Check VLAN Deployment via Switch CLI

Run **show vlan extended** command on any switch to check which VLANs are currently deployed on a switch, along with which EPG and Interface the VLAN is tied to.

The **encap-id xx** filter is available on ACI Release 4.2 and later:

<#root>

```
Node-103#
```

show vlan encap-id

420

extended

```
VLAN Name                             Encap            Ports
---- -------------------------------- ---------------- ------------------------
2    lc_TN:lc_APP:lc_EPG              vlan-420         Eth1/13
```

Check Platform Independent VLAN Deployment via Switch CLI

Every VLAN in an ACI Switch Node is mapped to some Platform Independent (PI) VLAN which is a value local to each Switch Node.

Access Encaps are mapped to a PI VLAN called an 'FD VLAN', whereas Bridge Domains are mapped to a PI Vlan called a "BD VLAN." Run **show system internal epm vlan all** command on a switch to display the list of vlans deployed on the leaf.

<#root>

```
Node-103#
```

show vlan extended | egrep

"Encap|----|1/13"

```
 VLAN Name                              Encap            Ports
 ---- --------------------------------- ---------------- ------------------------
```

2

```
    lc_TN:lc_APP:lc_EPG
```

vlan-

420

```
         Eth1/13                   --> FD vlan 2
```

18

```
   lc_TN:lc_BD                        vxlan-16416666   Eth1/13                    --> BD vlan 18
```

The FD vlan and BD vlan to interface programming can be validated with a **show interface** command:

<#root>

```
Node-103#
```

show interface eth

1/13 trunk | grep -A 2

Allowed

```
 Port           Vlans Allowed on Trunk
--------------------------------------------------------------------------------
 Eth1/13
```

2,18

Check SVI VLAN Deployment

If validating a layer-3 vlan with a BD SVI, moquery class fvSubnet to get the IP address of the subnet:

```
<#root>

APIC#

moquery -c fvSubnet | grep lc_BD


dn : uni/tn-lc_TN/BD-lc_BD/subnet-[10.10.10.254/24]
```

Then check **show ip interface brief** again and check for the matching IP address to validate the vlan and expected VRF. In this example, validation is for "BD VLan 18" from the previous CLI output example:

```
<#root>

Node-103#

show ip interface brief


...

IP Interface Status for VRF "

lc_TN:lc_VR

F"(16)
Interface            Address              Interface Status


vlan18

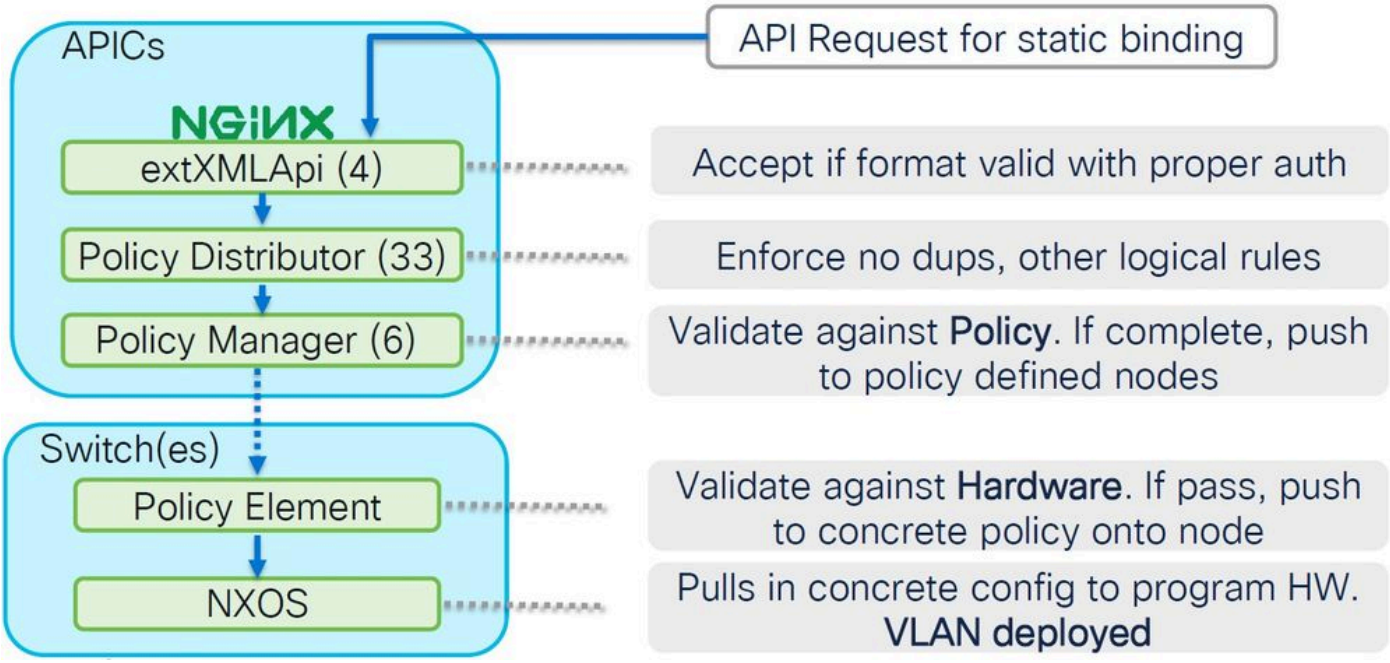
 10.10.10.254/24

protocol-up/link-up/admin-up
```

Reference Diagrams

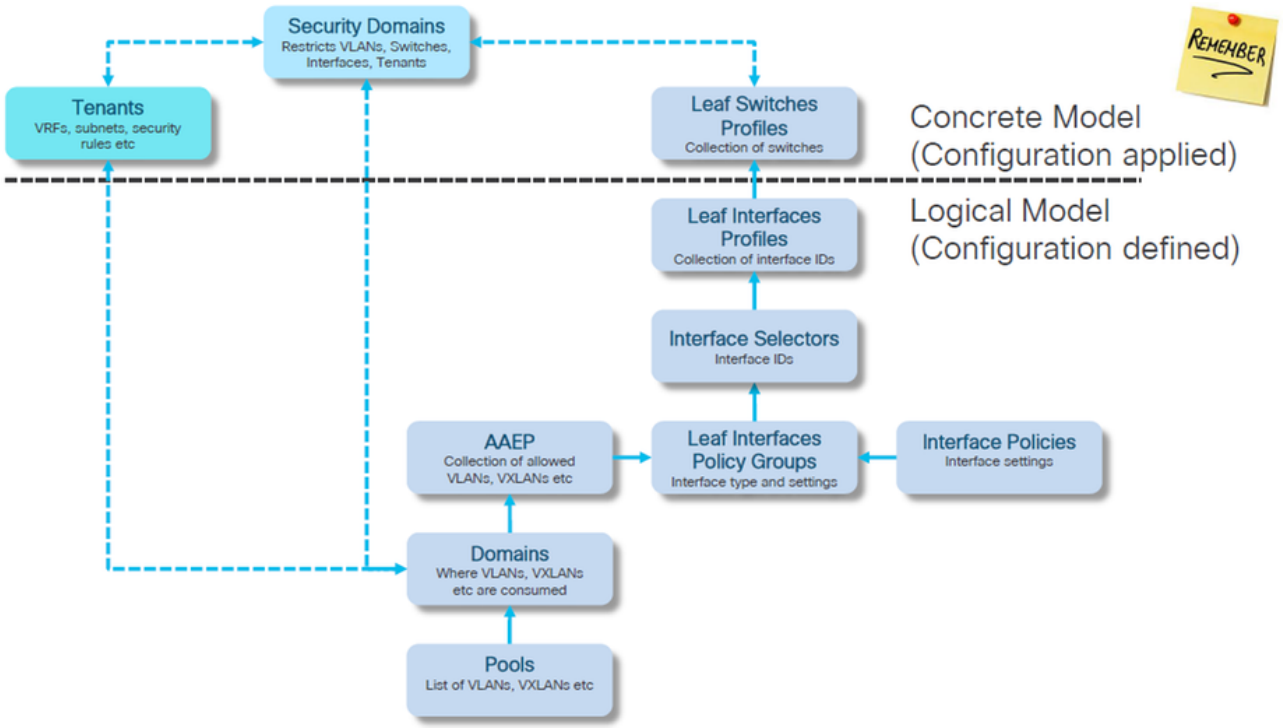
High Level Programming Sequence for a Static Path Binding

This high level sequence summarizes the steps involved from VLAN Static Path API call, to Switch Node VLAN Deployment.



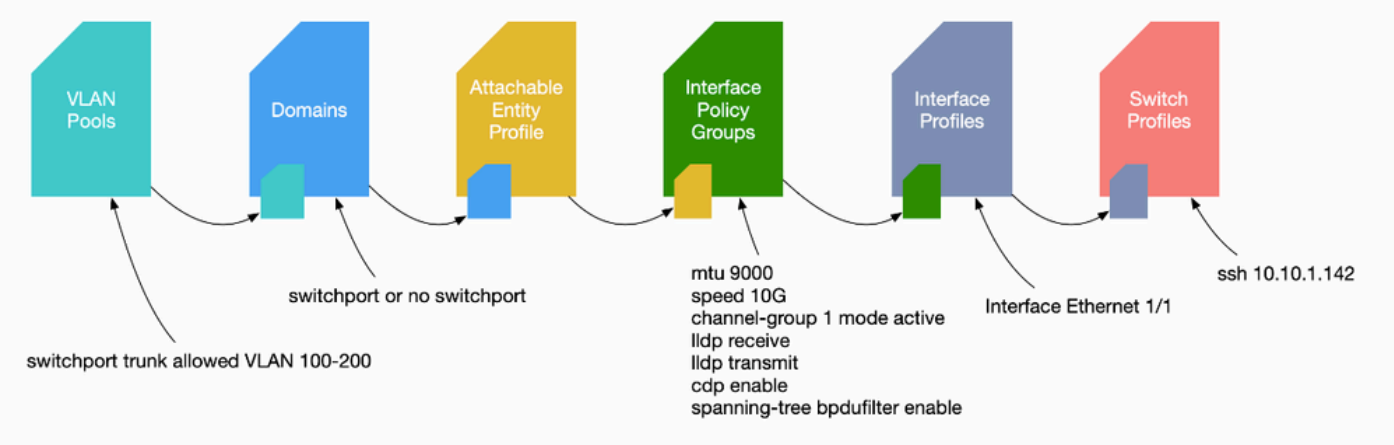
Access Policy Relationship Block Diagram

This block diagram shows the relationship between Access Policies to ensure a successful Switch Node VLAN deployment.



Standalone NXOS Commands mapped to Access Policies

Every network engineer has actually been working with the idea of access policies; only they have been defined as text in a file via a CLI interface of a standalone device.



When a fault F0467 is seen, it is important to first understand the access policies and ensure they are configured correctly.

VLAN Verification Command Cheat Sheet

Each command output provides a variable that is used for the next command in the list. These commands were referenced throughout this document to troubleshoot the different scenarios.

Node	Commands	Purpose
APIC	moquery -c faultInst -f 'fault.Inst.code=="F0467"'	Lists out all the F0467 faults currently active in the fabric
	moquery -c l2RtDomIfConn | grep <epg_name> | grep dn	Shows the static/dynamic paths associated with the specfic epg.
	moquery -c fvRsDomAtt | grep -A 25<epg_name> | grep rn	Shows the domains associated to the EPG
	moquery -c infraRsVlanNs | grep -A 15 <dom_name> | grep tDn	Shows the vlan pool name associated with the domain. The domain name is extracted from the previous command
	moquery -c fvnsEncapBlk | grep	Shows the vlan numbers associated with the specfic

	<vlan_pool_name>	vlan pool
	moquery -c infraRtDomP | grep <dom_name>	Shows the AEP associated with the domain
	moquery -c infraRtAttEntP | grep <AEP_name>	Shows the interface profile group (IPG) associated with the domain
	moquery -c infraRsAccBaseGrp | grep -B 15 <IPG_name> | grep dn	Shows the interface profile group (IPG) to Interface Selector association
	moquery -c infraRsAccPortP | grep <Interface_Sector> | grep dn	Shows the Interface Profile to Switch Profile association
	moquery -c fvIfConn -f 'fv.IfConn.encap=="<encap_vlan>"' | grep dn	Shows all the interfaces where the specfic encap vlan is deployed on the fabric
	moquery -c fvnsRtVlanNs | grep <vlan_pool_name> | | grep dn	Shows the domain associated with the vlan pool
	moquery -c fvSubnet | grep <BD_name>	Shows the svi IP associated with the domain
Switch	show vlan encap-id <encap_vlan> extended	Shows details of the PI vlans and Tenant, App Profile and EPG name
	show vlan extended | egrep "Encap|----|<port:example 1/13>"	Shows details of the vlan on the specfic port.
	show int eth <port> trunk | grep -A 2 Allowed	Shows the vlans being forwarded on specfic port. Note that the vlan numbers are internal vlan numbers.
	show ip int bri vrf <vrf>	Show the Layer 3 interfaces deployed for the specific vrf
	show vpc brief	Shows the vpc related information if this switch is part of a VPC pair.

Related Information

- On-Demand Session Library: BRKDCN-3900
- On-Demand Session Library: BRKACI-2770
- Cisco Troubleshooting Application Centric Infrastructure, Second Edition