

CCIE DATA CENTER
ACI CORE

ACI VLAN Types & VLAN Scope

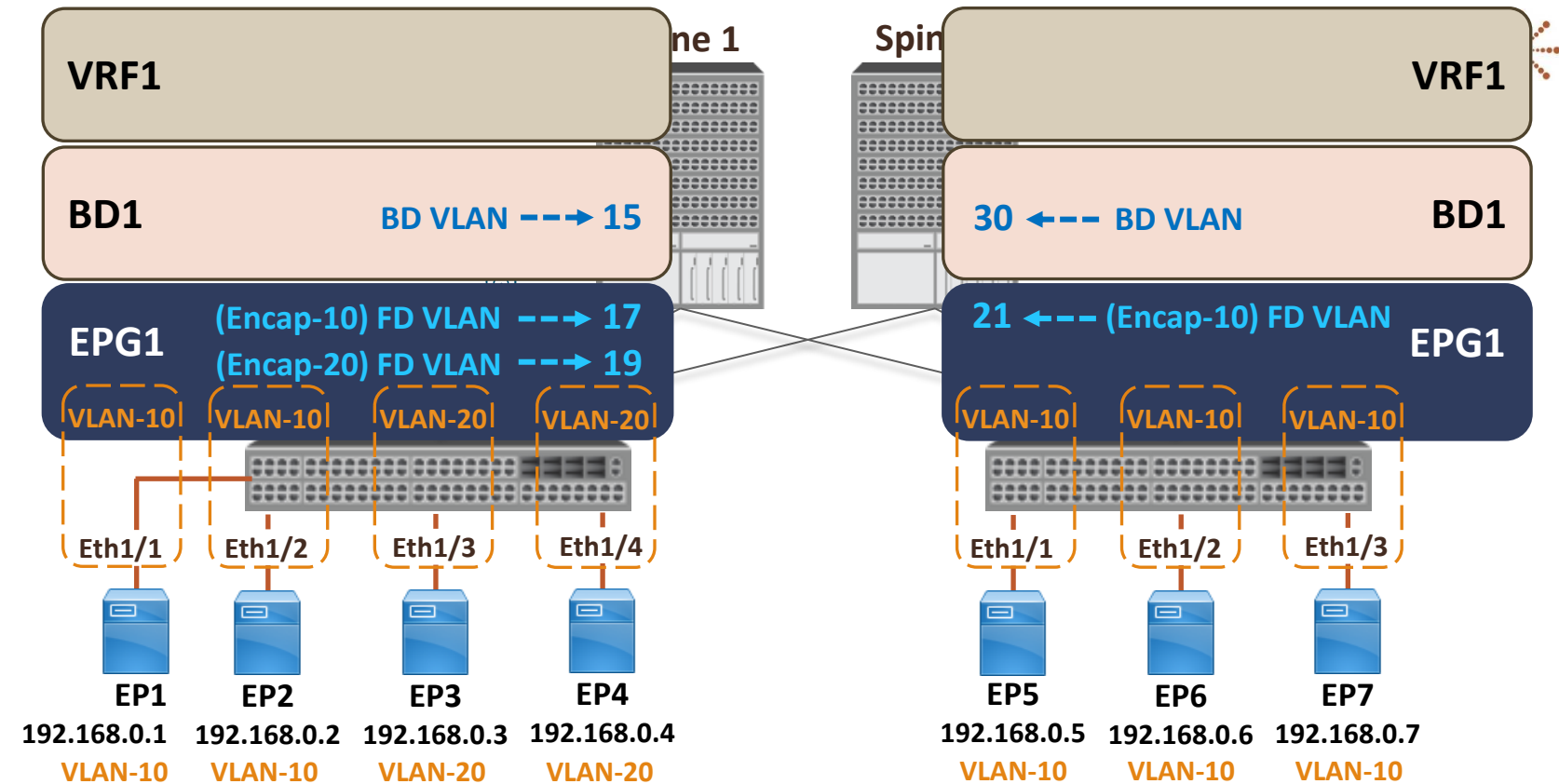
ACI VLAN Types

- **Access Encap VLAN**

- ✓ VLAN ID for external devices.
- ✓ VLAN ID is a user-configurable value (VLAN pools, static binding, L3Outs).
- ✓ Used to classify traffic from the endpoints into EPGs.
- ✓ Represented as *vlan-id* or *encap-id* in the show commands.

- **Platform Independent (PI-VLAN)**

- ✓ Internal VLANs on the leaf switches.
- ✓ VLAN IDs are automatically assigned.
- ✓ Not shared across the leaf switches.
- ✓ Used for leaf internal representation of an EPG (*FD VLAN*) & BD (*BD VLAN*).
- ✓ Represented as *vlan id* (without a hyphen) in the show commands.



```
Leaf1# show endpoint ip 192.168.0.1
17          vlan-10          0000.0000.1111    L    eth1/1
Tenant1:VRF1          vlan-10          192.168.0.1      L    eth1/1
```

```
leaf1# show vlan id 15 extended
VLAN Name          Encap          Ports
-----
15          Tenant1:BD1    vxlan-16744333  Eth1/1, Eth1/2, Eth1/3, Eth1/4
```

```
leaf1# show vlan id 17 extended
VLAN Name          Encap          Ports
-----
17          Tenant1:App-X:EPG1    vlan-10          Eth1/1, Eth1/2
```

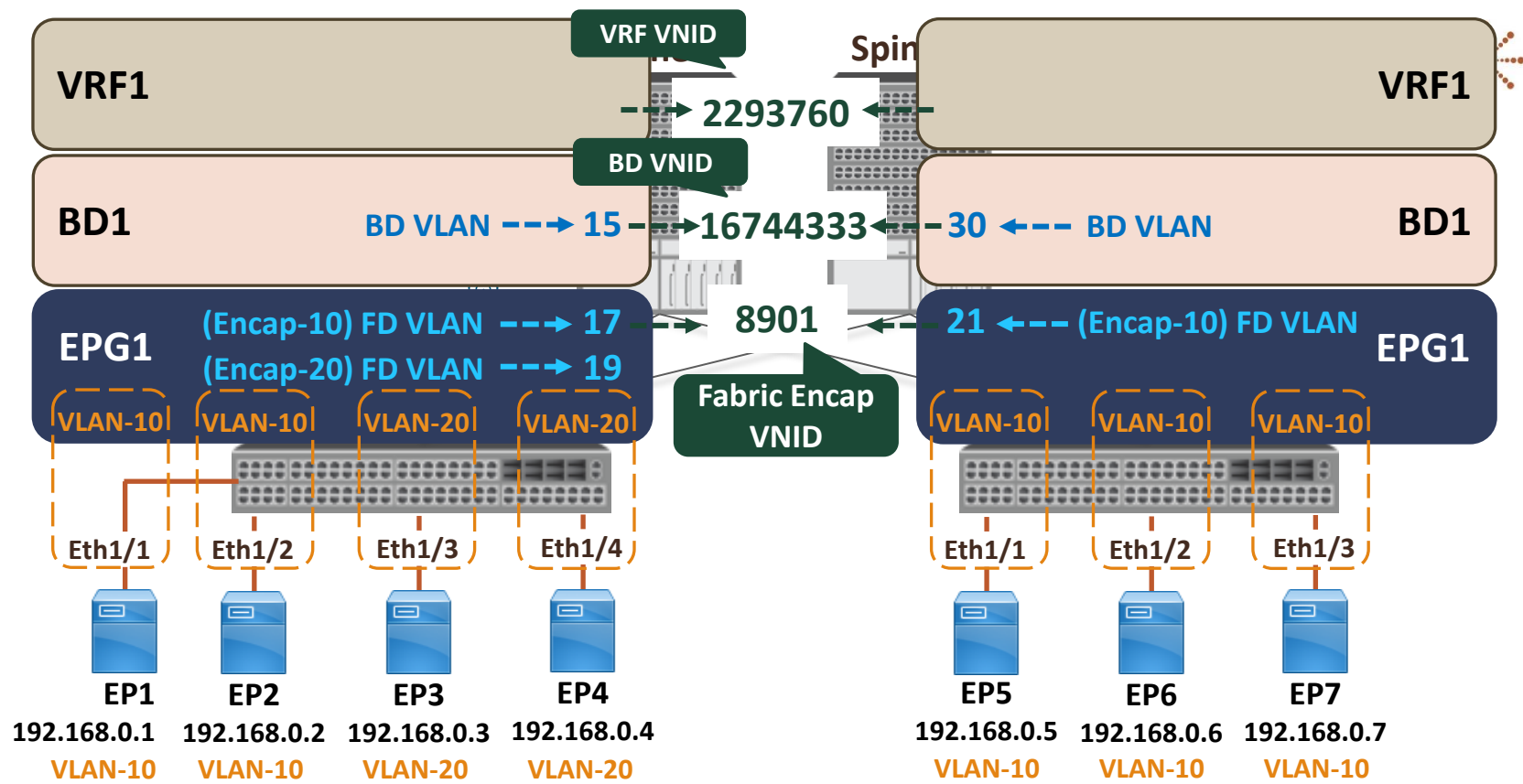
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```
Leaf1# show system internal epm endpoint ip 192.168.0.1
MAC : 0000.0000.1111 ::: Num IPs : 1
IP# 0 : 192.168.0.1 ::: IP# 0 flags : ::: l3-sw-hit: No
Vlan id : 17 :: Vlan vnid : 8901 :: VRF name : Tenant1:VRF1
BD vnid : 16744333 :: VRF vnid : 2293760
Interface : Ethernet1/1
Flags : 0x80004c04 ::: sclass : 49153 ::: Ref count : 5
```

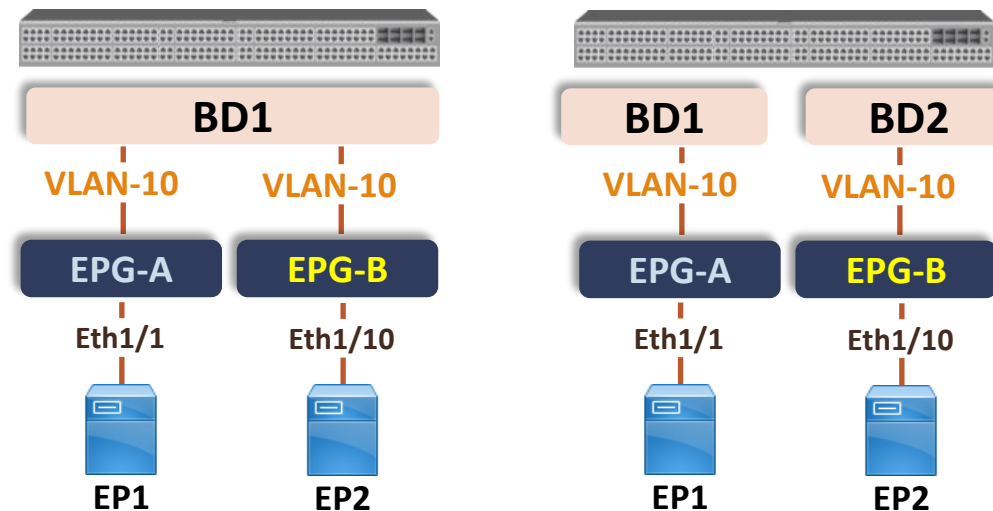
EPG pcTag for policy deployment

```
leaf1# show system internal epm vlan 17
```

VLAN ID	Type	Access Encap (Type Value)	Fabric Encap	H/W id	BD VLAN	Endpoint Count
17	FD vlan	802.1Q 10	8901	165	15	2

ACI VLAN Scope

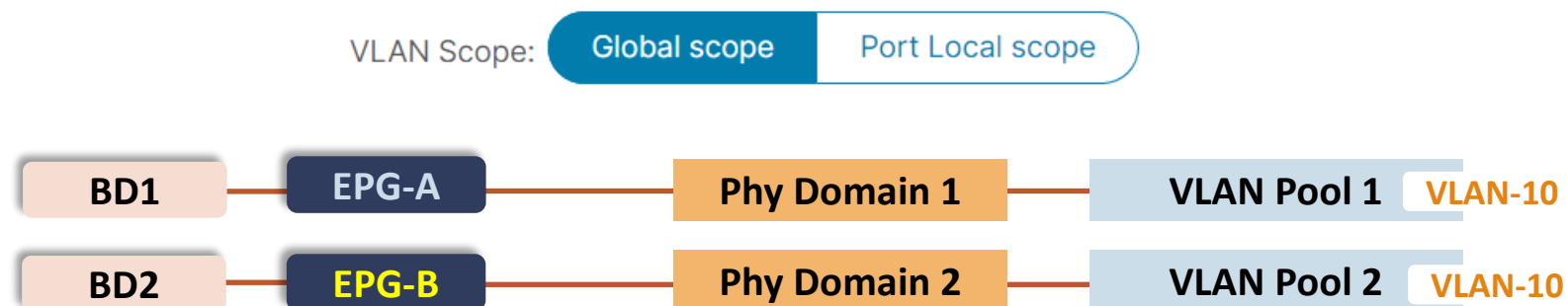
- ACI VLAN scope is considered when applying the same access encap VLAN to more than one EPG on the same Leaf.
- We have two VLAN scope options configured under the “**L2 Interface policy**”.
- Apply the port Local scope on the interfaces where the same access encap VLAN is used for different EPGs.
- Each EPG should be associated with a separate VLAN pool, domain, and bridge domain.



Fault Code: F0467

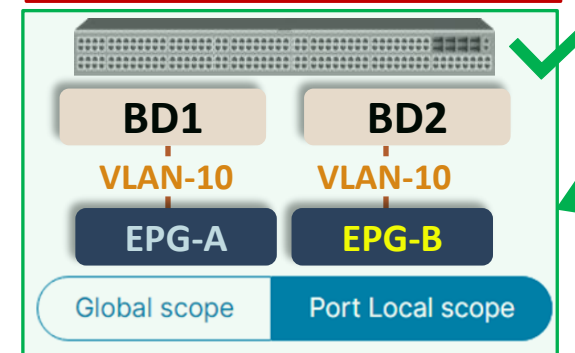
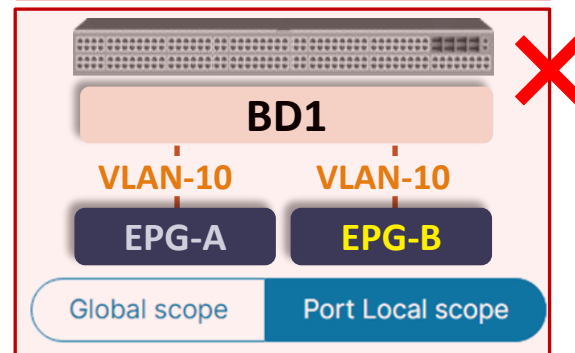
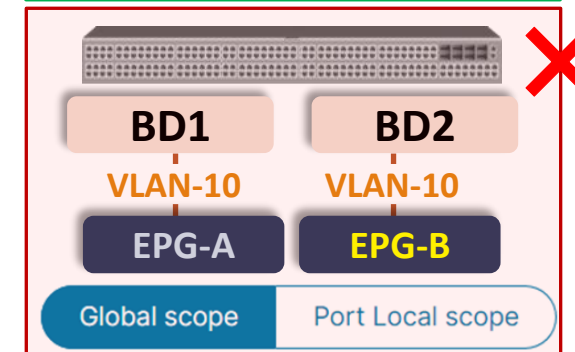
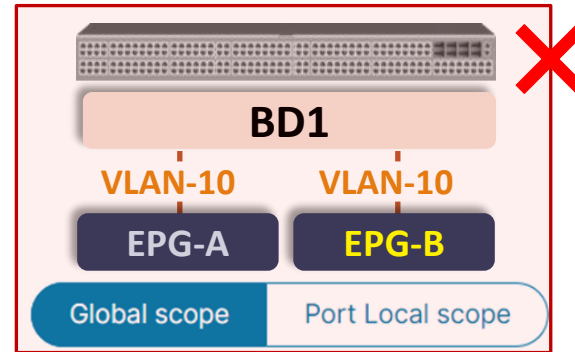
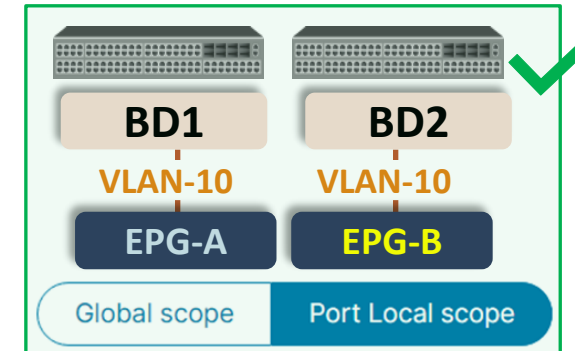
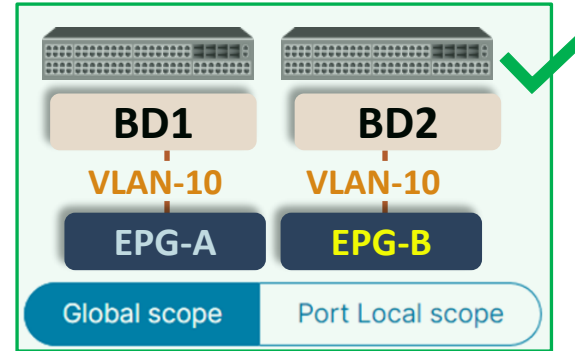
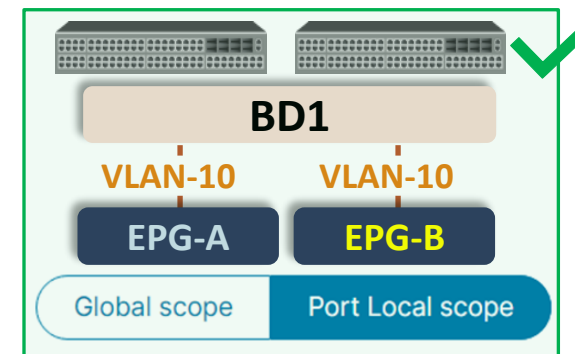
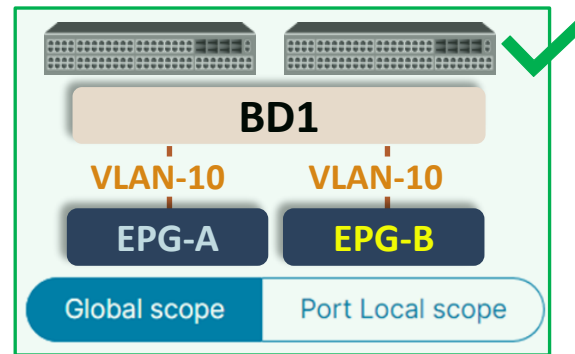
Description: Fault delegate: Configuration failed for uni/tn-Tenant1/ap-App-X/epg-EPG-B node 101 eth1/10 due to Encap Already Used in Another EPG, Invalid Path Configuration, debug message: encap-already-in-use: Encap is already in use by Tenant1:App-X:EPG-A; invalid-path: Either the EpG is not associated with a domain or the domain does not have this interface assigned to it

Fabric > Access Policies > Policies > Interface > L2 Interface



ACI VLAN Scope

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Separate VLAN Pools Domains & BDs

Thanks for watching!

