

Configure Configuration Zone Feature in ACI

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Introduction

This document describes how you can configure "Configuration Zone" feature in **Cisco Application Centric Infrastructure (ACI)**.

Concept

Configuration Zone feature is used in ACI to lock configuration changes for an portion of Fabric Switches. It means if you group up Fabric switches into different Zones A and B then we can push configuration changes to switches which are in Zone A and hold changes for switches which are in Zone B.

This Feature can minimize the risk of deploying configuration changes to the switches where the configuration is going to be pushed to group of switches instead of every switch in the fabric.

Deployment modes when using configuration zone can be configured as;

1. **Open** — Updates are be sent immediately
2. **Locked** — New updates are postponed

Prerequisites

Basic understanding of ACI configuration features are interface policy group, interface selector, switch profiles , all of these fall under access policies section on the **Cisco Application Policy Infrastructure Controller (APIC) GUI**.

Configuration zone feature is only available for policies which are defined in section **Configuration Zone Supported Policies (Refer to this document)**

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/aci/apic/sw/kb/b_APIC_Config_Zones.html

Setup and Topology

This lab has been built with two leaf switches with Node IDs 101 and 104 respectively.

Model: N9K-C93180YC-FX

APIC Version 5.2(5c)

1. IPG Policy: config_zone_ipg

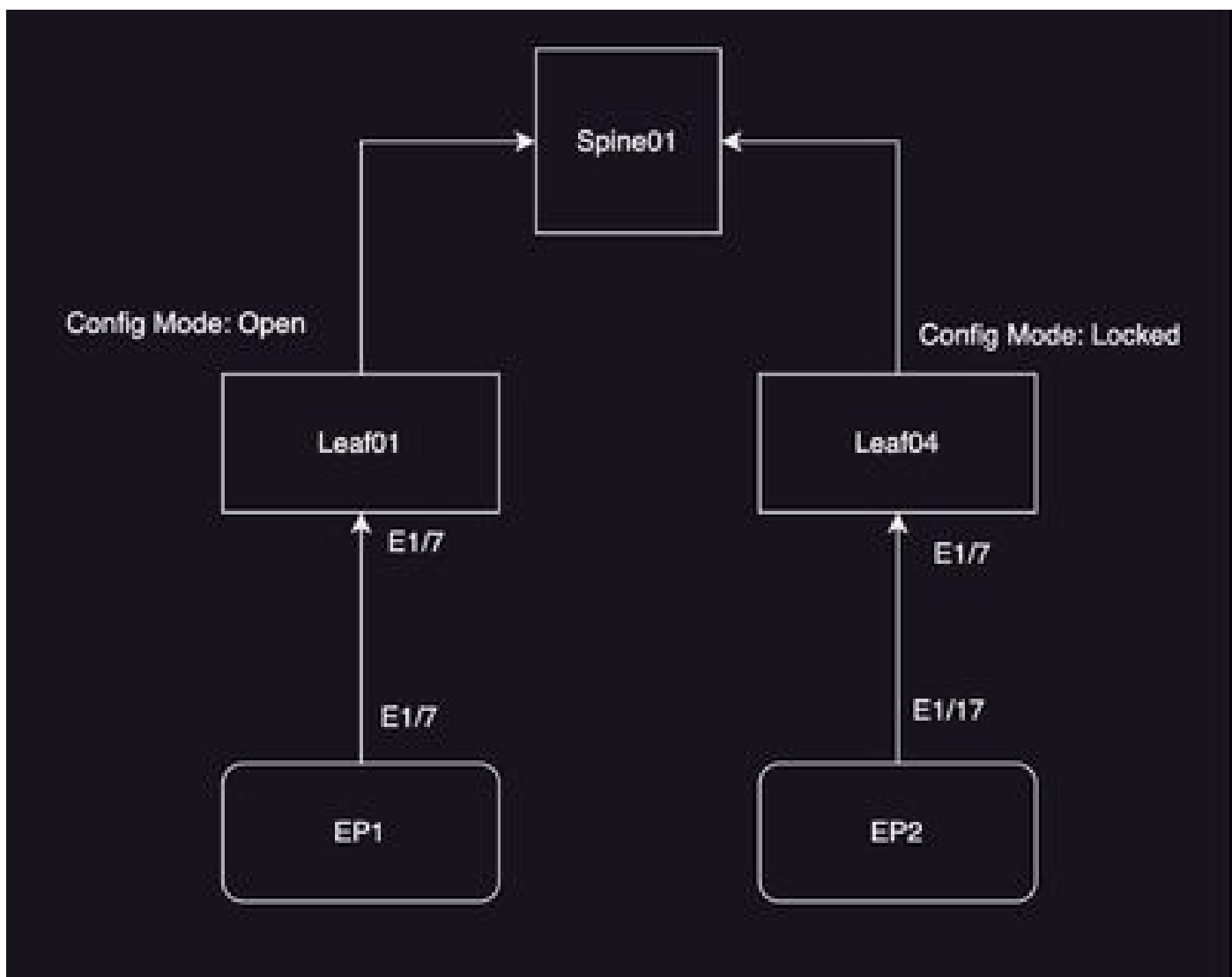
- config_zone_aaep
- system-cdp-enabled
- system-lldp-enabled

2. Leaf Interface Selector: config_zone_leaf_interface_profile

- Port7
- config_zone_ipg

3. Switch Profile: Leaf_101_104_Port7

- Leaf101
- Leaf104
- config_zone_leaf_interface_profile



Configuration Example

In this lab you are going to use configuration zone feature in ACI to postpone IPG Interface Policy Group

(MO infraAccPortGrp) changes to Leaf 104 whereas changes are immediately pushed to Node 101 once deployed.

Config Zone Configuration

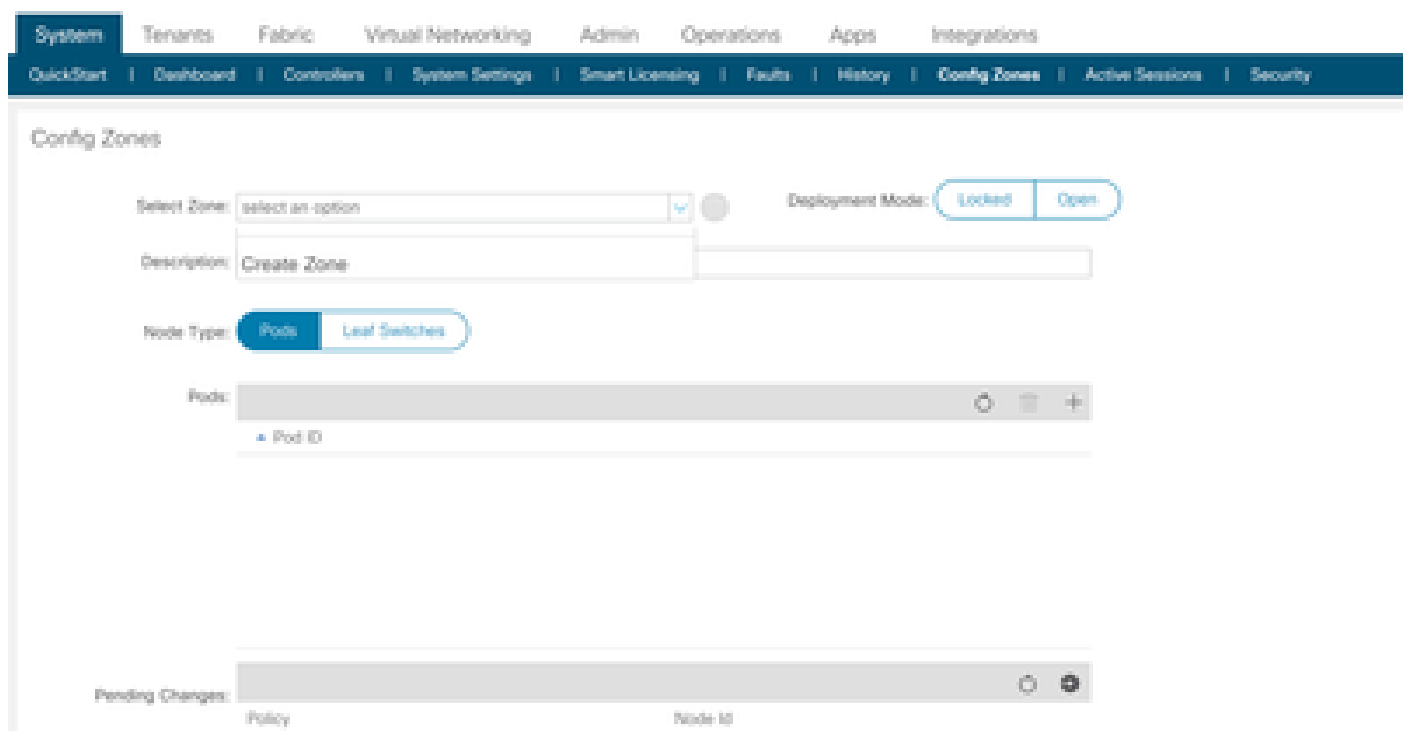
You are going to start with creation of config zone on APIC for Leaf 101 and Leaf 104

A) Leaf101 is the config zone name for leaf 101

B) Leaf104 is the config zone name for leaf 104

Step1. Create config Zone for “Leaf101”. In order to configure,

Navigate to **System**—> **Configuration Zone** —> **Create Zone**



The screenshot shows the APIC configuration interface for creating a Config Zone. The top navigation bar includes 'System', 'Tenants', 'Fabric', 'Virtual Networking', 'Admin', 'Operations', 'Apps', and 'Integrations'. Below this, a secondary navigation bar lists 'QuickStart', 'Dashboard', 'Controllers', 'System Settings', 'Smart Licensing', 'Faults', 'History', 'Config Zones', 'Active Sessions', and 'Security'. The main content area is titled 'Config Zones' and contains the following elements:

- Select Zone:** A dropdown menu with 'select an option' and a blue circular indicator.
- Deployment Mode:** Two buttons, 'Locked' and 'Open', with 'Open' being the active mode.
- Description:** A text input field containing 'Create Zone'.
- Node Type:** Two buttons, 'Pods' (active) and 'Leaf Switches'.
- Pods:** A table with a header 'Pod ID' and a single row containing a plus sign icon.
- Pending Changes:** A table with a header 'Policy' and a single row containing a plus sign icon.

Step 2. You set the mode “**Open**” for Leaf 101.

Create Zone

Name:

Description:

Deployment Mode: Locked Open

Step 3. Config Zone is created but no Leaf's are mapped. Map switch node Leaf 101 with Config Zone "Leaf101"

1. Select **Node Types** —> **Leaf Switches**
2. Use **+** sign to add the switch node 101

Config Zones

Select Zone: Deployment Mode: Locked Open

Description:

Node Type: Probe LeafSwitches

Leaf Switches		
Switch ID	Name	Role

Pending Changes: Policy Node ID


Create Node Block

Leaf Switches:

Validation:




Make sure Leaf switch node 101 is added to config zone "Leaf101".

Config Zones



Select Zone: Leaf101  Deployment Mode: **Locked** Open

Description:

Node Type: **Pods** Leaf Switches

Leaf Switches:   


Switch ID	Name	Role
101	bgl-ec107-leaf01	leaf


Pending Changes:  

Policy	Node Id
--------	---------

Step 4. Create config zone for “Leaf104”. You set the mode “**Locked**” for config zone Leaf104.




Config Zones

 This Zone's Deployment Mode is currently set to "Locked". This prevents policy and configuration updates to participating nodes and pods while in this state.



Select Zone: Leaf104  Deployment Mode: **Locked** Open

Description:

Node Type: **Pods** Leaf Switches

Leaf Switches:   

Switch ID	Name	Role
-----------	------	------

Pending Changes:  

Policy	Node Id
--------	---------

Step 5. Add switch node Leaf 104 to config zone “Leaf104”.

This Zone's Deployment Mode is currently set to 'Locked'. This prevents policy and configuration updates to participating nodes and pods while in this state.

Select Zone: Leaf104 Deployment Mode: Locked Open

Description:

Node Type: Pods Leaf Switches

Leaf Switches:

Switch ID	Name	Role
104	lgh-aci07-leaf04	leaf

Pending Changes:

Policy	Node ID
--------	---------

Access Policies Configuration

In the previous section you have created an IPG Policy: config_zone_ipg and this is mapped to Leaf Interface Selector "config_zone_leaf_interface_profile" which you are going to map to Switch Profile: Leaf_101_104_Port7.

After doing the stated steps you can observe that changes are postponed to "Switches" which have config zone with deployment mode "Locked"(Leaf 104) whereas the changes are pushed immediately to the Nodes for which have config zone deployment mode is set to "Open"(Leaf 101).

Refer to the Interface Policy Group, Interface Selector and Switch profile configuration across two leaf's for Port E1/7 in the snippet,

IPG Policy

Leaf Access Port Policy Group - config_zone_ipg

Policy Faults History

Properties

Name: config_zone_ipg

Description: optional

Alias:

Attached Policy Profile: config_zone_ipg

CDP Policy: system-only-enabled

Link Layer Policy: default

LLDP Policy: system-llp-enabled

IPG Policy is attached to interface E1/7

Leaf Interface Profile - config_zone_leaf_interface_profile

Policy Faults History

Properties

Name: config_zone_leaf_interface_profile

Description: optional

Alias:

Interface Selections

Name	Block	Policy Group
port7	E1/7	config_zone_ipg

IPG is attached to Leaf's 101 and 104 port E1/7 respectively

Leaf Profile - Leaf_101_104_Port7

Policy Faults History

Properties

Name: Leaf_101_104_Port7

Description: optional

Leaf Selections

Name	Block	Policy Group
leaf101	101	
leaf104	104	

Associated Interface Selection Profiles

Name	Description	State
config_zone_leaf_interface_profile		formed

Associated Module Selection Profiles

Name	Description	State
No items have been found. Select Actions to create a new item.		


Configuration Zone feature testing with Interface configuration across two leaf's

1. IPG changes are pushed to Leaf 101

Validation:




Check Pending Changes: Nothing (All changes are pushed)

Config Zones



Select Zone: Leaf101  Deployment Mode: Locked Open

Description:

Node Type: Pods Leaf Switches

Leaf Switches:   

Switch ID	Name	Role
101	bgl-ac07-leaf01	leaf

Pending Changes:  

Policy	Node Id
--------	---------

CDP got enabled by the IPG policy and pushed to the Leaf 101 as config was "OPEN",

Validation:

```
<#root>
```

```
apic1#
```

```
fabric 101 show cdp neighbors int e1/7
```

```
-----  
Node 101 (leaf01)  
-----
```

```
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
```

```
S - Switch, H - Host, I - IGMP, r - Repeater,
```

```
V - VoIP-Phone, D - Remotely-Managed-Device,
```

```
s - Supports-STP-Dispute
```

```
Device-ID          Local Intrfce  Hldtme  Capability  Platform      Port ID
```

```
switch1(FD023331683)
```


- IPG policy changes are postponed for Leaf 104. Check Pending Changes; changes related to IPG and Interface selectors are seen as pending.

Validation:

Config Zones

This Zone's Deployment Mode is currently set to 'Locked'. This prevents policy and configuration updates to participating nodes.

Select Zone: Leaf104 Deployment Mode: **Locked** Open

Description:

Node Type: **Leaf Switches** Pods

Leaf Switches:

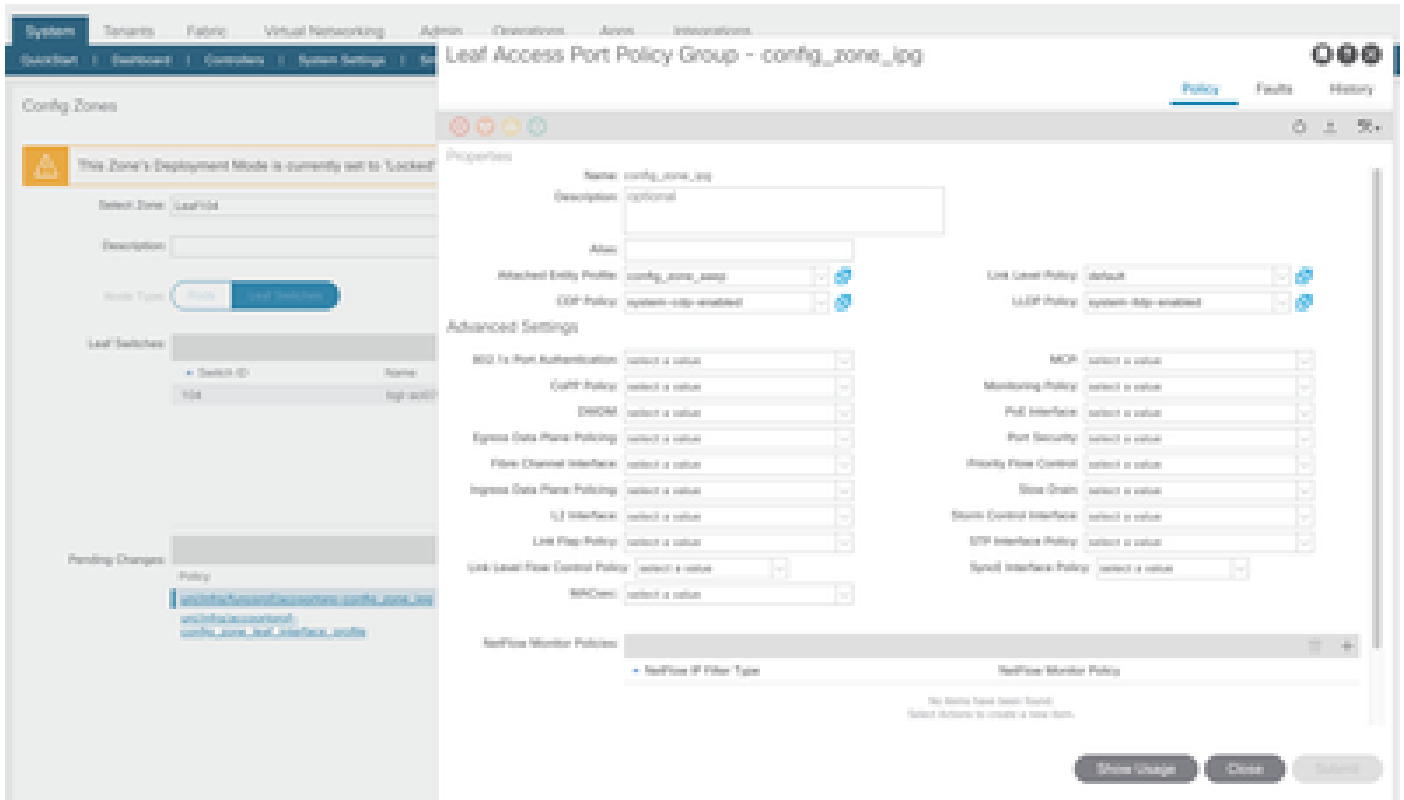
Switch ID	Name	Role
104	bgl-sci07-leaf04	leaf

Pending Changes:

Policy	Node Id
uni/infra/funcordof/accordipm-confiq_zone_log	104
uni/infra/accordof/confiq_zone_leaf_interface_profile	104

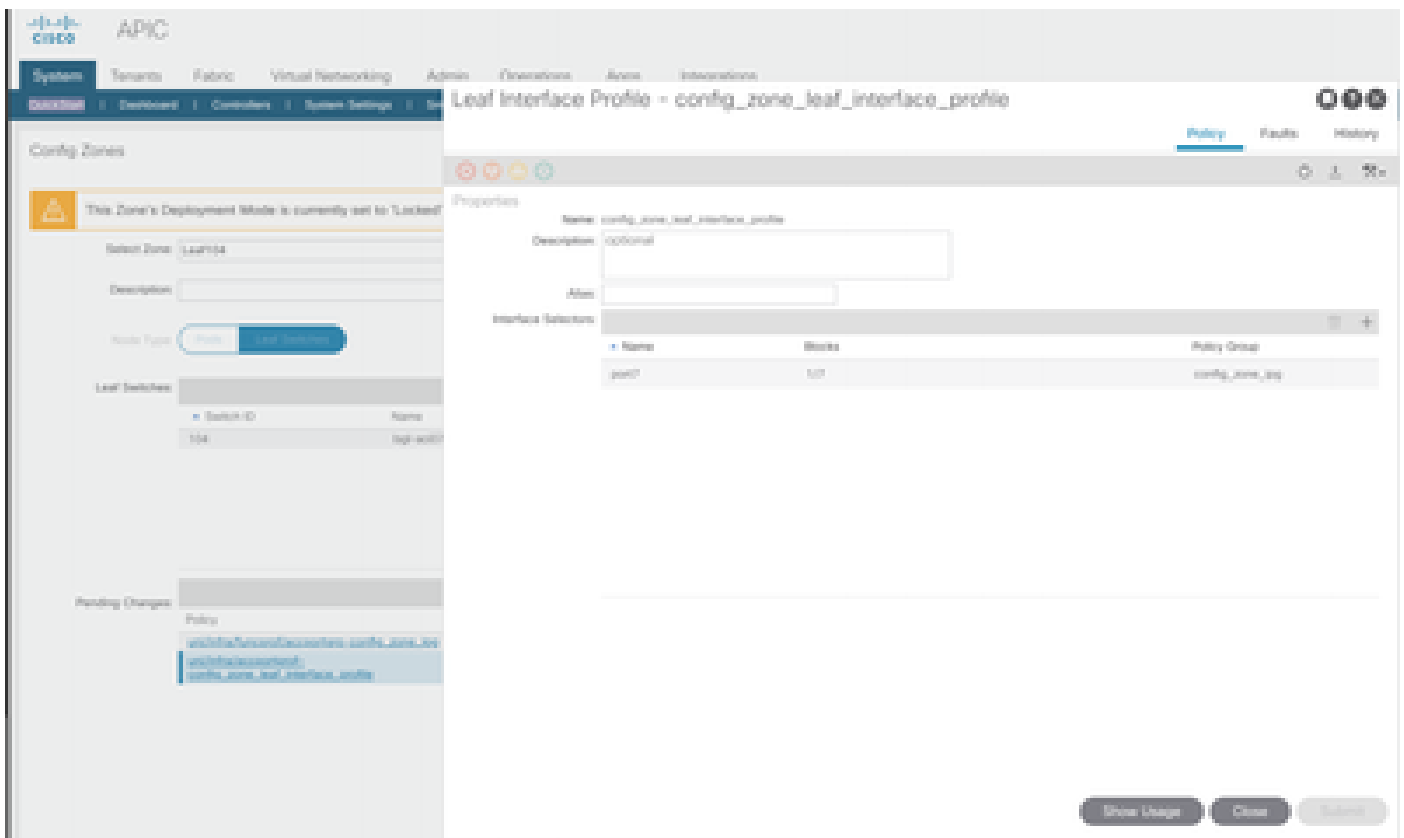
You can click on the “Pending changes” to check more details on what is being changed, IPG configuration is pending to be pushed to Leaf 104.

Validation:



Leaf Interface profile changes are pending to be pushed to Leaf 104.

Validation:



CDP changes those were part of Interface Policy Group are “Not Pushed” to the Leaf 104 as config was locked.

Validation:

```
<#root>
```

```
apic1#
```

```
fabric 104 show cdp neighbors interface ethernet 1/7
```

```
-----  
Node 104 (leaf04)  
-----
```

```
Note. CDP Neighbor entry not found
```


Pushing Pending Changes

Now you can push pending changes to leaf 104. We need to use (—>) button to push the pending changes. Click on (—>) button and select OK. Refresh Pending changes and make sure nothing is left .

Validation:

Config Zones

 This Zone's Deployment Mode is currently set to 'Locked'. This prevents policy and configuration updates to participating nodes and pods while in this state.



Select Zone: Leaf104  Deployment Mode: **Locked** Open

Description:

Node Type: Pods **Leaf Switches**

Leaf Switches:  

Switch ID	Name	Role
104	sp1-acc01-leaf04	leaf


Pending Changes:  



Policy	Node ID
uni/infra/fabricconf/acc01conf/comp_zone_leaf	104
uni/infra/acc01conf/comp_zone_leaf_interface_profile	104

Ensure changes are finally pushed to Leaf 104.

Validation:




Config Zones

 This Zone's Deployment Mode is currently set to 'Locked'. This prevents policy and configuration updates to participate



Select Zone: Leaf104   Deployment Mode: Locked Open

Description:

Node Type: Pods Leaf Switches

Leaf Switches:   

Switch ID	Name	Role
104	bgl-aci07-leaf04	leaf

Pending Changes:  

Policy	Node Id
--------	---------

CDP got enabled on port E1/7 for Leaf 104 once the changes are pushed.

Validation:

```
<#root>
```

```
apic1#
```

```
fabric 104 show cdp neighbors interface ethernet 1/7
```

```
-----  
Node 104 (leaf104)  
-----
```

Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge

S - Switch, H - Host, I - IGMP, r - Repeater,

V - VoIP-Phone, D - Remotely-Managed-Device,

s - Supports-STP-Dispute

Device-ID	Local Intrfce	Hldtme	Capability	Platform	Port ID
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```
switch1(FDO23331683)
```

```
Eth1/7          141      R S s      N9K-C93108TC- Eth1/17
```

In this configuration example, we have seen how can we use configuration zone feature in ACI.