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 oder to configure,

Navigate to System—> Configuration Zone —> Create Zone

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Config Z	ones								
	Select Zone:	select an opti	0.5			Deployment Mo	de: Locked	Open.)	
	Description:	Create Zon							
	Node Type:	Pode	Leaf Switches						
	Pods:						0 =	+	
		 Pod ID 							
Per	nding Changes:						Ô	0	
		Policy			Node Id				

Step 2. You set the mode "Open" for Leaf 101.

Create Zone		08
Name:	Leaf101	
Description:	optional	
Deployment Mode:	Locked Open	
		Cancel Submit

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 (Lastin 1		•	againgment Model 🚺	ded Open			
Description								
Node Type: (Puls Lastances							
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Paratice Character					0.0			
randa company	Policy	7eiz	01.10				Cantol	Submit

Validation:

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

Config Zones							
Select Zone:	Leaf101		0	Deployment Mode:	Locked		Open
Description:							
Node Type:	Pods Leef Switches						
Leaf Switches:							
	- Switch ID	Name		Role			
	101	bgl-aci07-leaf01		leaf			
Pending Changes:					(5	•
	Policy		Node Id				

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

Config.	Zones										
\land	This Zone's De	ployment Mode is currently set to	Cocked". This p	prevents polic	y and configuration	updates 1	o particip	sating nodes	and pods wh	die in this str	ite.
	Select Zone:	Leaf104		· •	Deployment Mode:	Locked	Open)			
	Description:										
	Node Type:	Pods Level Switches									
	Loaf Switches:										
		 Switch ID 	Name		Rote						
						0	0				
0	Yending Changes:	Polcy		Node Id							

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

Config Zones

This Zone's De	ployment Mode is cur	ently set to 'Locked'. This prevent	s policy and configurat	ion updates to p	articipating nodes and pods while in this sta
Select Zone:	Leaf104	0.0	Deployment Mod	e Locked	Quen)
Description:					
	Poin Leaf Sector				
Leaf Switches:					
	+ Switch (D	None	Role		
	104	bgi-aci07-leaf04	leaf		
Pending Changes:				0	0
	Policy	Node I	đ		

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 G	oup - config_zone_ip	2			¢	0 0
			Policy 6	ang the second	164	hory
				0	4	$\mathfrak{M}_{\mathcal{T}}$
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IPG Policy is attached to interface E1/7

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			Policy	Faults	H	wy.
				0	2.	$\mathfrak{M} \times$
Properties						
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Description	optional					
Alian						
Interface Selectors						+
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IPG is attached to Leaf's 101 and 104 port E1/7 respectively

Leaf Profile - Leaf, 10	_104_Pot7						¢	0 0
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Properties								
Description	optional							
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	harter	101						
	huftide.	104						
Associated Interface Solution Problem								
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	config.nove.jeat.interface.profile			formed				
Associated Module Selector Problem								+
	Norme	Description		Date				
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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:							
	 Smitch ID 	Name		Role			
	101	bgl-aci07-leaf01		leaf			
Pending Changes:						0	•
	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(FDO23331683)
```

2. 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 De	eployment Mode is currently set to	'Locked'. This p	revents policy	and configuration	updates to	participat	ting n
Select Zone:	Leaf104		- ®	Deployment Mode:	Locked	Open)	
Description:							
Node Type:	Pods Leaf Switches						
Leaf Switches:							
	 Switch ID 	Norrio		Role			
	104	bgl-aci07-leaf04		leaf			
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renorg changes.	Policy		Node Id				
	uni/infra/functorof/accountgra-config	zone_log	104				
	uni/infra/accoortorof- confro_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.

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					No forma have been found. Select Advances to create a new them.					
						Show Usage C	1000 C			

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

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		units and intellect and							
							Show Use		

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 .

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	Description								
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	Leaf Switches							+	
		 Seitch ID 		Name		Role			
		104		1gr-ac07-leaf0	l.	leaf			
							~	•	
P	inding-Changes	i destru			No. of Con-		Q	•	
		and finding the second		intere line	104				
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Ensure changes are finally pushed to Leaf 104.

Config Zones

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Select Zone:	Leaf104	~ 🕲	Deployment Mode:	ocked	Oper
Description:					
Node Type:	Pods Leaf Switches				
Leaf Switches:					
	 Switch ID 	Name	Role		
	104	bgl-aci07-leaf04	leaf		
				Ó	0
Pending Changes:					

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

<#root>	
apic1#	
fabric 104 show cd	p 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

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.