

配置APIC從6.0(2H)自動升級

目錄

[簡介](#)

[何時需要它？](#)

[必要條件](#)

[拓撲](#)

[執行APIC自動升級的步驟](#)

簡介

本檔案介紹自動升級功能如何適用於思科應用程式原則基礎架構控制器(APIC)。

何時需要它？

在現有的流程中，無論何時透過退貨授權(RMA)收到新的APIC或新採購的APIC，都必須運行與ACI交換矩陣中的APIC版本相同的APIC版本才能加入集群。這要求先升級新的APIC以匹配現有集群的版本，然後再將其增加到交換矩陣，這是非常耗時的，並且需要手動操作。

當您需要此功能時，有兩種使用案例。

1. 更換故障APIC (RMA APIC)
2. APIC集群擴展

必要條件

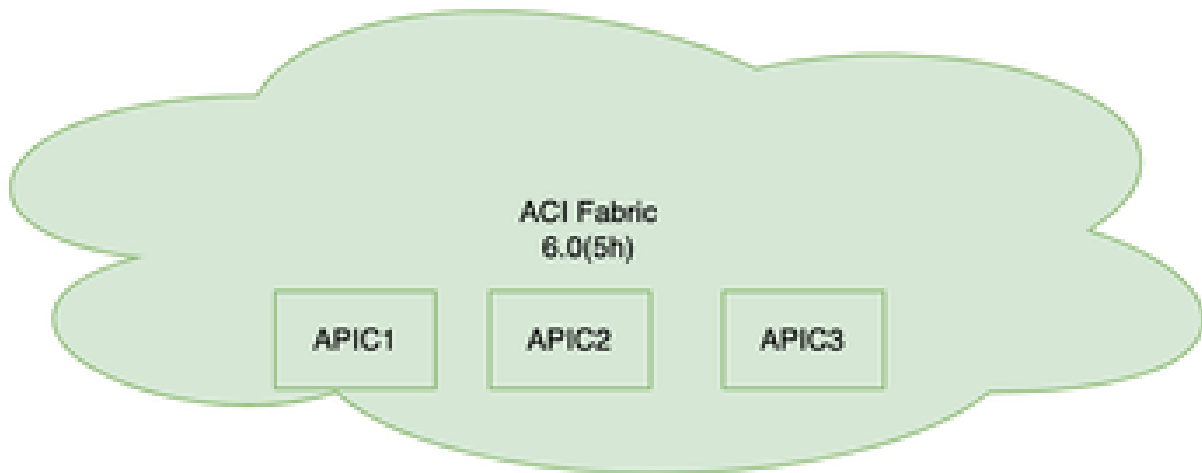
為了簡化流程並使其即插即用，從ACI版本6.0(2)及後續版本開始引入了APIC自動升級功能。

透過更換或增加將新的APIC引入交換矩陣時，APIC軟體必須與集群上運行的軟體相匹配。這通常需要升級，升級過程需要花費更多時間才能完成，APIC需要加入交換矩陣

這是一個不需要任何配置的自動功能。

拓撲

在此拓撲中，您有三個運行ACI版本6.0(5h)的APIC，APIC3出現故障並需要更換。



執行APIC自動升級的步驟

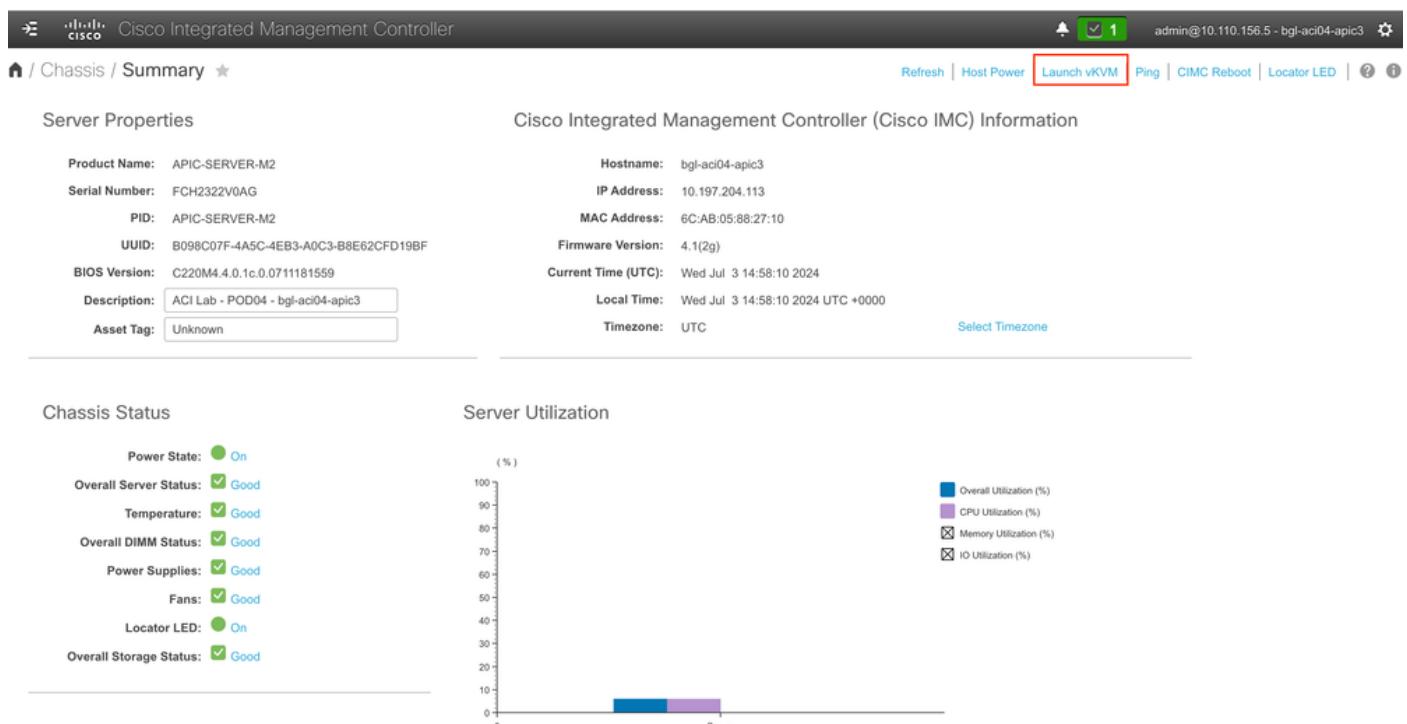
收到RMA APIC後，配置思科整合管理控制器(CIMC) IP以匹配先前的CIMC地址。

步驟 1. 登入CIMC GUI。

步驟 2. 透過鍵盤、影片和滑鼠KVM訪問APIC。

導航到「啟動vKVM」>「按一下它」>「再打開一個窗口」頁籤>按一下超連結

<#root>





步驟 3. 初始化新APIC以檢查其運行的APIC版本（您可以使用任何虛擬交換矩陣發現引數，如交換矩陣名稱、交換矩陣ID、TEP池等）

步驟 4. 初始化新APIC後，請檢查版本（您可以看到現有APIC版本為5.2.5c）

```
apic3# acidiag version <== To check the APIC version
5.2.5c
```

步驟 5. 使用給定命令重新載入新APIC。

```
acidiag touch clean <== Commands to remove all configuration and reboot the devices
acidiag touch setup
acidiag reboot
```

步驟 6. 收集 sam_exported.config作為APIC初始化時使用的此資訊。

```
apic1# cd /data/data_admin
apic1# pwd
/data/data_admin <=== Location of sam_exported.config file
apic1# ls -l | grep sam
-rw-r--r-- 1 root root 349 Jul  3 07:32 sam_exported.config

apic1# cat sam_exported.config
Setup for Active and Standby APIC
fabricDomain= bgl-aci04
fabricId= 1
systemName= bgl-aci04-apic1 <== APIC1 hostname , change based on APIC3
controllerID= 1
tepPool= 10.0.0.0/16
infraVlan= 3967
GIPo= 225.0.0.0/15
clusterSize= 5
standbyApic= NO
enableIPv4= Y
enableIPv6= N
firmwareVersion= 6.0(5h)
```

```
ifcIpAddr= 10.0.0.1
apicX= NO
podId= 1
standaloneApicCluster= no
oobIpAddr= 10.197.204.114/24 <== APIC1 OOB IP, Change based on APIC3
```

步驟 7. 使用步驟6中收集的資料初始化新的APIC。

```
Press Enter at anytime to assume the default values. Use ctrl-d
at anytime to restart from the beginning.

Cluster configuration ...
Enter the fabric name [bgl-aci04]:
Enter the fabric ID (1-128) [1]:
Enter the number of active controllers in the fabric (1-9) [3]:
Is this a standby controller? [NO]:
Enter the controller ID (1-3) [3]:
Standalone APIC Cluster ? yes/no [no]:
Enter the POD ID (1-254) [1]:
Enter the controller name [bgl-aci04-apic3]:
Enter address pool for TEP addresses [10.0.0.0/16]:
Note: The infra VLAN ID should not be used elsewhere in your environment
      and should not overlap with any other reserved VLANs on other platforms.
Enter the VLAN ID for infra network (1-4094) [3967]:

Out-of-band management configuration ...
Enable IPv6 for Out of Band Mgmt Interface? [N]:
Enter the IPv4 address [10.197.204.116/24]:
Enter the IPv4 address of the default gateway [10.197.204.1]:
Enter the interface speed/duplex mode [auto]:
```

```
admin user configuration ...
The admin user configuration will be synchronized
from the first controller after this controller
joins the cluster.

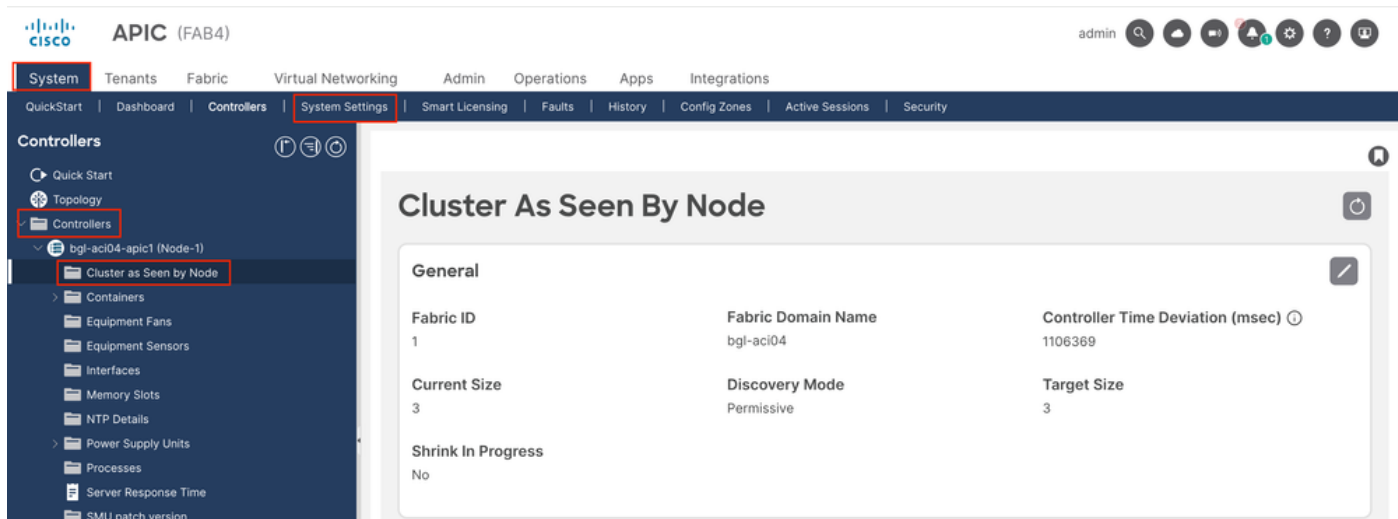
The above configuration will be applied ...

Warning: TEP address pool and Infra VLAN ID cannot be changed later,
these are permanent until the fabric is wiped.

Would you like to edit the configuration? (y/n) [n]:
```

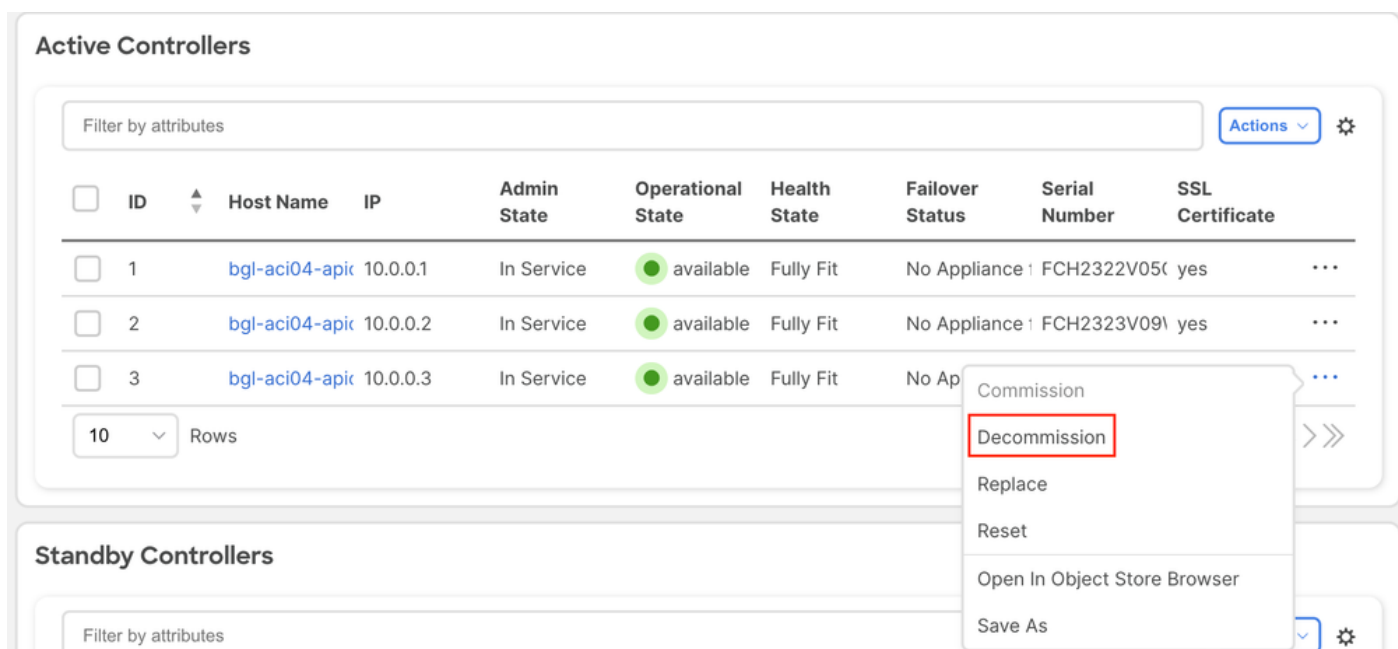
步驟 8. 從APIC01 GUI停用故障APIC3

導航到System > System Settings > Controllers > Cluster as Seen by Node



按一下裝置右側的三個點。點選Decommission

<#root>



步驟 9. 驗證節點的管理狀態，它會顯示為「停止服務」，並且停用選項會呈現灰色。

Cluster As Seen By Node

General

Fabric ID1

Fabric Domain Namebgl-aci04

Controller Time Deviation (msec) ⓘ1106369

Current Size3

Discovery ModePermissive

Target Size3

Shrink In Progress

No

Active Controllers

Filter by attributes

☐	ID	Host Name	IP	Admin State	Operational State	Health State	Failover Status	Serial Number
☐	1	bgl-aci04-apic1	10.0.0.1	In Service	● available	Fully Fit	No Appliance failove	FCH2322V05G
☐	2	bgl-aci04-apic2	10.0.0.2	In Service	● available	Fully Fit	No Appliance failove	FCH2323V09W
☐	3	bgl-aci04-apic3	0.0.0.0	Out of Service	● unregistered	Unknown	No Appliance failove	

10

 Rows

Page 1 of 1 << < 1-3 of 3 > >>

Commission

Decommission

Replace

Reset

Open In Object Store Browser

Save As

步驟 10. 從機架上卸下故障APIC3並在機架上安裝新的APIC3。

步驟 11. 在機架中安裝新APIC後，請為新APIC3通電並連線電纜。電纜包括交換矩陣上行鏈路和管理埠。

步驟 12. 等待10-15分鐘，以便打開新APIC的電源。透過CIMC KVM驗證新的APIC是否已通電並且我們可以看到登入提示。（登入僅適用於rescue-user）

步驟 13. 從APIC01 GUI執行APIC03。

導航到System > System Settings > Controllers > Cluster as Seen by Node

點選裝置右側的三點>點選佣金

<#root>

Cluster As Seen By Node

General

Fabric ID
1

Fabric Domain Name
bgl-aci04

Controller Time Deviation (msec) ⓘ
1106369

Current Size
3

Discovery Mode
Permissive

Target Size
3

Shrink In Progress
No

Active Controllers

Filter by attributes

☐	ID	Host Name	IP	Admin State	Operational State	Health State	Failover Status	Serial Number
☐	1	bgl-aci04-apic1	10.0.0.1	In Service	● available	Fully Fit	No Appliance failove	FCH2322V05G
☐	2	bgl-aci04-apic2	10.0.0.2	In Service	● available	Fully Fit	No Appliance failove	FCH2323V09W
☐	3	bgl-aci04-apic3	0.0.0.0	Out of Service	● unregistered	Unknown	No Appliance failove	

10 Rows

Page 1 of 1 << < 1-3 of 3 > >>

Commission

Decommission

Replace

Reset

Open In Object Store Browser

Save As

第14步：增加CIMC IP地址、使用者名稱、密碼，這些地址用於我們正在替換的故障/舊APIC。按一下「驗證」。一旦驗證成功。

輸入APIC名稱、管理密碼（交換矩陣中使用的當前密碼）、POD ID、帶外管理地址和IPv4網關，然後點選Apply。（所有這些引數在更換時都屬於舊的APIC）。

Commission



Controller Type

Controller Type

Physical

Virtual

Connectivity Type

CIMC

OOB

IPv6

☐ Enabled

CIMC Details

IP Address *

10.197.204.113

Username *

admin

Password *

.....



Cancel

Apply

CIMC Details

IP Address *

10.197.204.113

Username *

admin

Password *



Validation Success

Commission



General

Name *

bgl-aci04-apic3

Admin Password *



Controller ID *

3

Pod ID *

1



Serial Number

FCH2322V0AG

Commission

×

.....

Controller ID *

3

Pod ID *

1

Serial Number

FCH2322V0AG

Out Of Band Network

IPv4 Address *

10.197.204.116/24

IPv4 Gateway *

10.197.204.1

Cancel Apply

步驟 15. 現在等待10-15分鐘，以便使用5.2(5c) APIC版本將新APIC增加到交換矩陣。

```
apic1# acidiag avread
Local appliance ID=1 ADDRESS=10.0.0.1 TEP ADDRESS=10.0.0.0/16 ROUTABLE IP ADDRESS=0.0.0.0 CHASSIS_ID=8c
Cluster of 3 lm(t):1(2024-07-03T07:52:20.791+00:00) appliances (out of targeted 3 lm(t):3(2024-07-03T09
    appliance id=1 address=10.0.0.1 lm(t):1(2024-07-03T07:33:50.078+00:00) tep address=10.0.0.0/16
    appliance id=2 address=10.0.0.2 lm(t):3(2024-07-03T12:40:59.116+00:00) tep address=10.0.0.0/16
    appliance id=3 address=10.0.0.3 lm(t):101(2024-07-03T13:18:17.965+00:00) tep address=10.0.0.0/16
```

步驟 16. 現有APIC將將此新APIC自動升級到6.0(5h)，並將它增加到集群中。您可以讓此程式再執行30分鐘，並再次檢查先前的平均輸出。

```
apic1# acidiag avread
```

```
Local appliance ID=1 ADDRESS=10.0.0.1 TEP ADDRESS=10.0.0.0/16 ROUTABLE IP ADDRESS=0.0.0.0 CHASSIS_ID=8c
```

```
Cluster of 3 lm(t):1(2024-07-03T07:52:20.791+00:00) appliances (out of targeted 3 lm(t):3(2024-07-03T13
```

```
    appliance id=1  address=10.0.0.1 lm(t):1(2024-07-03T07:33:50.078+00:00) tep address=10.0.0.0/16
```

```
    appliance id=2  address=10.0.0.2 lm(t):3(2024-07-03T13:24:30.725+00:00) tep address=10.0.0.0/16
```

```
    appliance id=3  address=10.0.0.3 lm(t):102(2024-07-03T13:42:57.550+00:00) tep address=10.0.0.0/
```

要驗證自動升級是否平穩運行且沒有錯誤，請檢查負責升級新增APIC的現有APIC上的
svc_ifc_appliancedirector.bin.log檔案。

位置：/var/log/dme/log

```
svc_ifc_appliancedirector.bin.log | grep "ApplianceAutoUpgrade.cpp"
```

```
4411||2024-07-03T13:03:02.014060877+00:00||appliance_director||DBG4|||# Registered APICs:3|../applian
```

```
4411||2024-07-03T13:03:02.014069812+00:00||appliance_director||DBG4|||# APICs its version is same clus
```

```
4411||2024-07-03T13:03:02.014078887+00:00||appliance_director||DBG4|||# APICs its version is different
```

```
4442||2024-07-03T13:04:02.025327143+00:00||appliance_director||DBG4|||Try to upgrade Appliance3|../ap
```

```
4442||2024-07-03T13:04:02.025434226+00:00||appliance_director||DBG4|||ImageFile: /firmware/fwrepos/fwre
```

```
4442||2024-07-03T13:04:02.025661541+00:00||appliance_director||DBG4|||Running rsync -8 -avzk --timeout
```

```
4442||2024-07-03T13:04:03.001492232+00:00||appliance_director||DBG4|||Done: Copy auto_upgrade script t
```

```
4442||2024-07-03T13:04:03.001598593+00:00||appliance_director||DBG4|||Running rsync -8 -avzk --timeout
```

```
4442||2024-07-03T13:13:59.287332478+00:00||appliance_director||DBG4|||Done: Copy iimage file to remote
```

```
4442||2024-07-03T13:13:59.287418460+00:00||appliance_director||DBG4|||Running ssh -p 1022 -i /secureda
```

```
4442||2024-07-03T13:17:55.430111171+00:00||appliance_director||DBG4|||Run remote upgrade done|../appl
```

```
4442||2024-07-03T13:17:55.430203755+00:00||appliance_director||DBG4|||Decommissioning Appliance 3|../
```

```
4442||2024-07-03T13:20:25.430436301+00:00||appliance_director||DBG4|||Commissioning Appliance 3|../ap
```

步驟 17. 如果自動APIC升級失敗，則隨後發生故障。

步驟 18. 對於失敗的情況，您可以執行全新重新載入並將新APIC增加回ACI交換矩陣以進行發現，從而始終可以重試自動APIC升級。

如果這些步驟無法解決問題，請收集Techsupport日誌並聯絡思科TAC以獲取進一步幫助。

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。