對PIM模組上的蜂窩網介面執行預檢查

目錄

簡介

本文檔介紹在部署PIM模組時如何對其進行預檢查，以及確認為蜂窩介面分配了IP地址。

必要條件

需求

思科建議您瞭解以下主題的基本知識：

- 5G蜂窩網路基礎知識
- 思科P-5GS6-GL模組
- Cisco IOS® XE和Cisco IOS® CG

採用元件

本文中的資訊係根據以下軟體和硬體版本：

- 思科C8300，採用Cisco IOS® XE版本17.06.03a，並插入P-5GS6-GL模組。

這適用於在SD-WAN中以控制器模式連線到路由器的P-5GS6-GL模組。

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路運作中，請確保您瞭解任何指令可能造成的影響。

疑難排解

裝置未連線到5G頻段

1. 確保為運營商啟用所獲取的5G頻段網路計畫。

2. 與運營商確認有關5G裝置所在區域的5G覆蓋區域。

確認裝置的蜂窩介面未分配IP地址

<#root>

```
ISR#sh ip int brief
Interface          IP-Address      OK? Method Status          Protocol
GigabitEthernet0/0/0  172.16.173.10  YES other  up              up
GigabitEthernet0/0/1  unassigned     YES unset  up              up
Gi0/0/1.2989        10.10.22.74     YES other  up              up
GigabitEthernet0/0/2  unassigned     YES unset  down            down
GigabitEthernet0/0/3  10.244.182.1   YES other  up              up
GigabitEthernet0/0/4  unassigned     YES unset  down            down
GigabitEthernet0/0/5  unassigned     YES unset  down            down
```

Cellular0/2/0 unassigned YES IPCP up up Cellular0/2/1 unassigned YES IPCP administratively down down

```
Sdwan-system-intf       10.244.182.1     YES unset  up                     up
Loopback65528           192.168.1.1      YES other  up                     up
NVI0                    unassigned       YES unset  up                     up
Tunnel0                 172.16.173.138   YES TFTP   up                     up
Tunnel2989001           10.10.22.74      YES TFTP   up                     up
```

確認裝置檢測到SIM

<#root>

```
ISR#sh controllers cellular 0/X/0 details
Cellular Dual SIM details:
---------------------------
```

SIM 0 is present

SIM 1 is not present

```
SIM 0 is active SIM
```

<#root>

```
ISR#sh cellular 0/X/0 security

Active SIM = 0


SIM switchover attempts = 0
Card Holder Verification (CHV1) = Disabled

SIM Status = OK


SIM User Operation Required = None
Number of CHV1 Retries remaining = 3
```

確認裝置主動使用所需的SIM

<#root>

```
ISR#sh controllers cellular 0/2/0 details
Cellular Dual SIM details:
--------------------------
SIM 0 is present
SIM 1 is not present

SIM 0 is active SIM
```

驗證是否已更新數據機韌體並填充SIM卡資訊

如果未填充SIM卡資訊，請確保已插入SIM卡且沒有故障：

<#root>

```
isr#show cellular 0/X/0 all
Hardware Information
====================
Modem Firmware Version = MOH.020202
Host Firmware Version = AOH.000292
Device Model ID = FN980

International Mobile Subscriber Identity (IMSI) = XXXXXXXXXXXXXXX


International Mobile Equipment Identity (IMEI) = XXXXXXXXXXXXXXX


Integrated Circuit Card ID (ICCID) = XXXXXXXXXXXXXXXXXXXX


Mobile Subscriber Integrated Services
Digital Network-Number (MSISDN) = XXXXXXXXXX
            *
            *
```

檢查單選值

如果無線電值超出有效範圍，請確保所有天線均已連線且無故障。

有效無線電範圍

RSSI:「良好」值大於–80 dBm（例如79大於–80）

RSRP:「良好」值大於–105 dBm（例如–104大於–105）

RSRQ:「良好」值大於–12 dBm（例如11大於–12）

SNR:「良好」值大於5 dBm（6大於5）

RSSI = -128 dBm通常表示數據機已關閉或天線未連線。完全沒有無線電訊號。

```
<#root>

Isr#sh cellular 0/2/0 radio
*

Current RSSI = -65 dBm


Current RSRP = -94 dBm


Current RSRQ = -12 dB


Current SNR = 8.4  dB


*
*
```

確認PS狀態是否已連線

如果未連線PS狀態，請確保使用正確的APN並在運營商端進行調配：

```
<#root>

isr#sh cellular 0/2/0 network
Current System Time = Sun Jan 6 3:11:7 1980
Current Service Status = No service
Current Service = Unknown
Current Roaming Status = Home
Network Selection Mode = Automatic
Network = 420 212
Mobile Country Code (MCC) = 420
```

Mobile Network Code (MNC) = 4

Packet switch domain(PS) state = Not attached

Registration state(EMM) = Searching/Not Registered
EMM Sub State = No IMSI
Tracking Area Code (TAC) = 0
Cell ID = 0
Network MTU = Not Available

檢查配置檔案配置，並且正在使用正確的APN

<#root>

isr#show cellular 0/x/0 profile
Profile password Encryption level = 7

Profile 1 = INACTIVE* *

PDP Type = IPv4

Access Point Name (APN) = SAMIS.M2M

Authentication = None

Profile 2 = INACTIVE

PDP Type = IPv4v6
Access Point Name (APN) = ims
Authentication = None

Profile 5 = INACTIVE

PDP Type = IPv4
Access Point Name (APN) = SAMIS.M2M
Authentication = None

  * - Default profile
 ** - LTE attach profile

Configured default profile for active SIM 0 is profile 1.

確認檢測到的網路、MCC和MNC值正確

```
<#root>

isr#sh cellular 0/2/0 network
Current System Time = Sun Jan 6 3:11:7 1980
Current Service Status = No service
Current Service = Unknown
Current Roaming Status = Home
Network Selection Mode = Automatic

Network = 420 212


Mobile Country Code (MCC) = 420


Mobile Network Code (MNC) = 4


Packet switch domain(PS) state = Not attached
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EMM Sub State = No IMSI
Tracking Area Code (TAC) = 0
Cell ID = 0

Network MTU = Not Available
```

如果顯示的值不正確，請使用https://www.mcc-mnc.com/確認：

強制更改以更正MCC和MNC值

1.關閉手機網路介面：

```
conf t
int cellular 0/X/0
shut
```

2.執行PLMN搜尋，這會強制數據機搜尋區域中的可用網路：

```
cellular 0/X/0 lte plmn search    //This command is entered in PRIV mode, no config mode.
```

3.完成PLMN搜尋後，請參閱具有以下內容的可用網路：

```
show cellular 0/X/0 network
```

4.選擇所需網路，其方式為：

```
cellular 0/X/0 lte plmn select manual MCC MNC INDX RAT    //Enter the desired MCC,MNC,INDX and RAT from
```

5.要強制選擇所需的網路：

```
 cellular 0/X/0 lte plmn select force MCC MNC INDX RAT    //Enter the desired MCC,MNC,INDX and RAT from
```

檢查可用的PLMN

<#root>

```
isr#sh cellular 0/2/0 network
Current System Time = Tue Jan 8 23:43:48 1980
Current Service Status = No service
Current Service = Unknown
Current Roaming Status = Roaming
Network Selection Mode = Automatic
Network = Zain KSA
Mobile Country Code (MCC) = 420
Mobile Network Code (MNC) = 4
Packet switch domain(PS) state = Not attached
Registration state(EMM) = Not registered
EMM Sub State = Attach needed
Tracking Area Code (TAC) = 0
Cell ID = 0
```

Available PLMNs at = 11:31:30 AST Thu Nov 21 2024

```
Idx MCC MNC RAT     Desc

1   420 1   lte     stc

2   420 3   lte     Mobily

3   420 4   lte     Zain KSA
```

相關資訊

- [硬體安裝指南](#)
- [PIM軟體配置指南](#)
- [數據機韌體升級指南（CG和PIM）](#)

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）。