

对PIM模块上的蜂窝网接口执行预检查

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简介

本文档介绍在部署PIM模块时如何对其进行预检查，以及确认为蜂窝接口分配了IP地址。

先决条件

要求

Cisco 建议您具有以下主题的基础知识：

- 5G蜂窝网络基础知识
- 思科P-5GS6-GL模块
- Cisco IOS® XE和Cisco IOS® CG

使用的组件

本文档中的信息基于以下软件和硬件版本：

- 插入了P-5GS6-GL模块的Cisco C8300和Cisco IOS® XE版本17.06.03a。

这适用于在SD-WAN中以控制器模式连接到路由器的P-5GS6-GL模块。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

故障排除

未连接到5G频段的设备

1. 与运营商一起确保已为5G频段激活所获取的网络计划。
2. 与运营商确认有关5G设备所在区域的5G覆盖区域。

确认设备的蜂窝接口未分配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

确认设备检测到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
```

确认设备主动使用所需的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
```

验证调制解调器固件已更新且SIM信息已填充

如果SIM信息未填充，请确保SIM已插入且无缺陷：

<#root>

```
isr#show cellular 0/X/0 all
```

```
Hardware Information
```

```
=====
```

```
Modem Firmware Version = MOH.020202
```

```
Host Firmware Version = A0H.000292
```

```
Device Model ID = FN980
```

```
International Mobile Subscriber Identity (IMSI) = XXXXXXXXXXXXXXXXX
```

```
International Mobile Equipment Identity (IMEI) = XXXXXXXXXXXXXXXXX
```

```
Integrated Circuit Card ID (ICCID) = XXXXXXXXXXXXXXXXX
```

```
Mobile Subscriber Integrated Services
```

```
Digital Network-Number (MSISDN) = XXXXXXXXXX
```

```
*
```

```
*
```

检查Radio值

如果无线电值超出有效范围，请确保所有天线均已连接且无缺陷。

有效无线电范围

RSSI:“良好”值大于-80 dBm (例如79大于-80)

RSRP:“良好”值大于-105 dBm (例如-104大于-105)

RSRQ:“良好”值大于-12 dBm (例如11大于-12)

SNR:“良好”值大于5 dBm (6大于5)

RSSI = -128 dBm通常表示调制解调器关闭或天线未连接。完全没有无线电信号。

```
<#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
```

```
*
```

```
*
```

确认PS状态是否已连接

如果未连接PS状态，请确保使用正确的APN并在运营商端进行调配：

```
<#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(P.S) 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

检查配置文件配置，确保使用的是正确的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.

确认检测到的网络、MCC和MNC值正确

<#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

如果显示的值不正确，请使用<https://www.mcc-mnc.com/>确认：

Show 25 entries Search: 420

MCC	MNC	ISO	Country	Country Code	Network
230	210	cz	Czech Republic	420	Tesco Mobile
230	210	cz	Czech Republic	420	TOPtelek
230	210	cz	Czech Republic	420	TT Quality
230	210	cz	Czech Republic	420	Uniphone
230	09	cz	Czech Republic	420	Uniphone
230	03	cz	Czech Republic	420	Vodafone
420	210	sa	Saudi Arabia	966	Fixed Calls
420	999	sa	Saudi Arabia	966	Fix Line
420	06	sa	Saudi Arabia	966	Lebara Mobile
420	03	sa	Saudi Arabia	966	Mobily
420	210	sa	Saudi Arabia	966	Red Bull MOBILE
420	210	sa	Saudi Arabia	966	Salam
420	01	sa	Saudi Arabia	966	STC / Al Jawal
420	05	sa	Saudi Arabia	966	Virgin Mobile
420	04	sa	Saudi Arabia	966	Zain

Showing 26 to 41 of 41 entries (filtered from 3,115 total entries)

强制更改以更正MCC和MNC值

1.关闭蜂窝网接口：

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

2.执行PLMN搜索，这会强制调制解调器搜索区域中的可用网络：

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

3.完成PLMN搜索后，请参阅具有以下内容的可用网络：

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

4.选择所需网络：

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

5.要强制选择所需的网络，请执行以下操作：

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

检查可用的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

相关信息

- [硬件安装指南](#)
- [PIM软件配置指南](#)
- [调制解调器固件升级指南 \(CG和PIM\)](#)

关于此翻译

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