

LTE中的使用者瀏覽問題故障排除

目錄

[簡介](#)

[必要條件](#)

[症狀](#)

[日誌收集/測試](#)

[分析](#)

[封包捨棄](#)

簡介

本檔案說明4G網路上的使用者資料瀏覽問題。

必要條件

思科建議您瞭解這些節點的功能

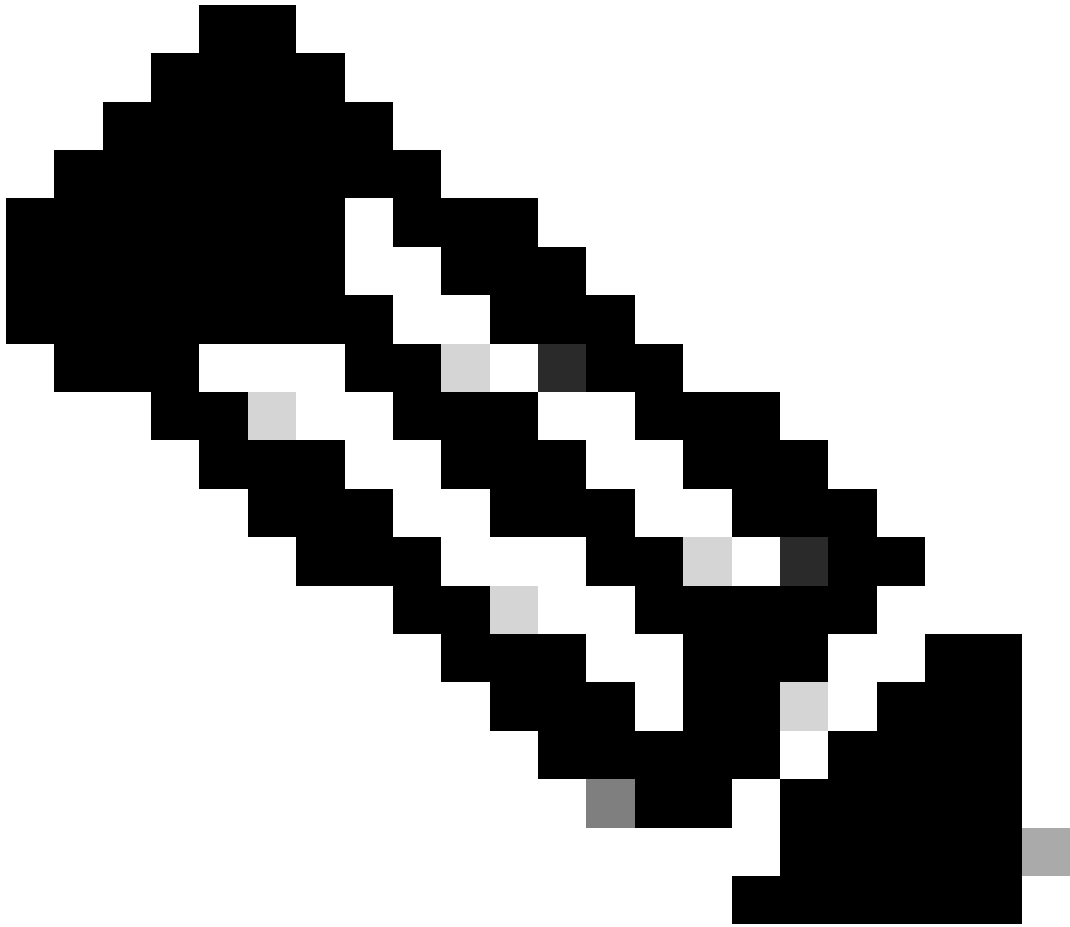
1. 服務封包資料閘道(SPGW)
2. 控制和使用平面分離(CUPS)

症狀

在開始測試和日誌收集之前，您需要檢查這些提到的詳細資訊：

1. 檢查問題為哪種資料包資料網路(PDN)資料型別：IPv4/IPv6/IPv4v6
2. 檢查問題出在任何特定存取點名稱(APN)或所有APN上，因為此問題也可能與特定APN相關。
3. 檢查URL是企業URL/客戶應用URL還是某些常規服務URL，並相應地檢查問題是否與特定VPN有關。
4. 檢查直接從瀏覽器訪問URL時或訪問Web應用時是否出現問題。
5. 問題是否本質上是間歇性的（例如手機重新開機後/重新整理Web URL開始工作），或者問題是一樣的，即使在手機重新開機後也不起作用？
6. 檢查觀察到的拒絕原因以及針對哪個評級組。

日誌收集/測試



注意：對於這類問題，您需要對有問題的使用者IMSI執行即時線上故障排除，並相應地收集日誌/跟蹤。

在繼續測試和日誌收集之前。

Flush the subscriber from the node and also clear browsing history/database from testing user handset s
clear subscriber imsi <IMSI number> ----- to be executed in the node to clear the subscri

1. 從測試任何PDN型別的訂戶開始。
2. 記錄putty會話並使用詳細程度5啟動監控使用者並啟用此選項。

<#root>

SPGW:

Press + for times then it collects the logs verbosity 5 logs then select next options

+++++

S,X,A,Y,56,26,33,34,19,37,35,88,89

Once option 75 is pressed then select 3,4,8 then press esc

CUPS::

on CP:

monitor subscriber imsi <IMSI> +++++ S, X,A,Y,56,26,33,34,19,37,35,88,89

on UP:

monitor subscriber imsi <IMSI> +++++ S,X,A,Y,56,26,33,34,19,37,35,88,89

3. 請啟用這些調試日誌並記錄putty會話，並確保會話不能終止（按tab鍵/每隔幾分鐘輸入一次，這樣會話就不會終止）。

<#root>

On SPGW:

```
logging filter active facility sessmgr level debug
logging filter active facility acsmgr level debug
logging filter active facility npumgr-acl level debug
logging filter active facility firewall level debug
logging filter active facility vpn level debug
logging filter active facility vpnmgr level debug
logging active ----- to enable the logging
no logging active ----- to disable the logging
```

On CP:

```
logging filter active facility sessmgr level debug
logging filter active facility sxdemux level debug
logging filter active facility firewall level debug
logging filter active facility vpn level debug
logging filter active facility vpnmgr level debug
logging active ----- to enable the logging
no logging active ----- to disable the logging
```

On UP:

```
logging filter active facility sessmgr level debug
logging filter active facility sxdemux level debug
logging filter active facility npumgr-acl level debug
logging filter active facility firewall level debug
logging filter active facility vpn level debug
```

```
logging filter active facility vpmngr level debug
logging active ----- to enable the logging
no logging active ----- to disable the logging
```

Note :: These logging has to be enabled for short time depending on the CPU utilization because it increase the utilization so while enabling logging need to keep a watch on CPU

4. 配置模式，請為使用者啟用日誌記錄監控

```
config
logging monitor msid <imsi>
end
```

5. 連線訂戶並連續瀏覽URL 3到5分鐘，在瀏覽時多次執行此命令並記錄putty會話。

```
<#root>
```

ON SPGW/SAEGW:

```
show subscriber full imsi <>
show active-charging session full imsi <>
show subscriber pgw-only full imsi <>
show subscriber sgw-only full imsi <>
show subscribers data-rate summary imsi <>
show ims-authorization sessions full imsi <>
show subscribers debug-info msid <>
```

On CP node:

```
Show subscriber full imsi <imsi>
Show active-charging session full imsi <imsi>
show subscribers pgw-only full imsi <>
show subscribers sgw-only full imsi <>
show session subsystem facility sessmgr instance <> verbose
show logs
```

On UP node:

```
show sub user-plane-only full callid <>
show sub user-plane-only callid <> urr full all
show sub user-plane-only callid <> far full all
show sub user-plane-only callid <> pdr full all
show subscribers user-plane-only callid <> far all
show subscribers user-plane-only callid <> far
show subs data-rate call <callid>
show subscribers user-plane-only flows
show user-plane-service statistics all
show user-plane-service statistic rulebase name <rulebase_name>
```

6. 瀏覽5分鐘後，在步驟4開啟的終端中執行no logging active

7. 停用訂戶的記錄監視器。

Config

```
no logging monitor msid <imsi>
```

8. 執行此命令以獲取訂戶的呼叫ID，並記錄此使用者的putty會話。

Show subscriber full imsi <imsi>. --> to get the call id

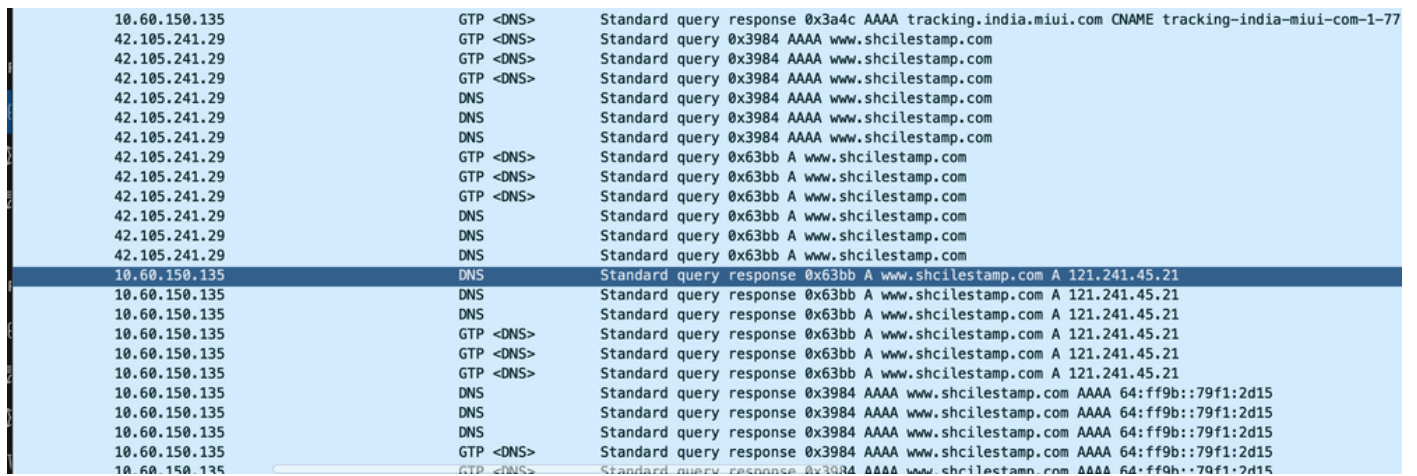
```
show logs callid <call_id>
```

```
show logs
```

9. 如果存在呼叫ID，則使用者會話日誌顯然已收集（如果沒有），需要再次運行。

分析

1. 檢查DNS解析是否成功。如果成功，則DNS沒有問題。



10.60.150.135	GTP <DNS>	Standard query response 0x3a4c AAAA tracking.india.miui.com CNAME tracking-india-miui-com-1-77
42.105.241.29	GTP <DNS>	Standard query 0x3984 AAAA www.shcilestamp.com
42.105.241.29	GTP <DNS>	Standard query 0x3984 AAAA www.shcilestamp.com
42.105.241.29	GTP <DNS>	Standard query 0x3984 AAAA www.shcilestamp.com
42.105.241.29	DNS	Standard query 0x3984 AAAA www.shcilestamp.com
42.105.241.29	DNS	Standard query 0x3984 AAAA www.shcilestamp.com
42.105.241.29	DNS	Standard query 0x3984 AAAA www.shcilestamp.com
42.105.241.29	GTP <DNS>	Standard query 0x63bb A www.shcilestamp.com
42.105.241.29	GTP <DNS>	Standard query 0x63bb A www.shcilestamp.com
42.105.241.29	GTP <DNS>	Standard query 0x63bb A www.shcilestamp.com
42.105.241.29	DNS	Standard query 0x63bb A www.shcilestamp.com
42.105.241.29	DNS	Standard query 0x63bb A www.shcilestamp.com
42.105.241.29	DNS	Standard query 0x63bb A www.shcilestamp.com
10.60.150.135	DNS	Standard query response 0x63bb A www.shcilestamp.com A 121.241.45.21
10.60.150.135	DNS	Standard query response 0x63bb A www.shcilestamp.com A 121.241.45.21
10.60.150.135	DNS	Standard query response 0x63bb A www.shcilestamp.com A 121.241.45.21
10.60.150.135	GTP <DNS>	Standard query response 0x63bb A www.shcilestamp.com A 121.241.45.21
10.60.150.135	GTP <DNS>	Standard query response 0x63bb A www.shcilestamp.com A 121.241.45.21
10.60.150.135	GTP <DNS>	Standard query response 0x63bb A www.shcilestamp.com A 121.241.45.21
10.60.150.135	DNS	Standard query response 0x3984 AAAA www.shcilestamp.com AAAA 64:ff9b::79f1:2d15
10.60.150.135	DNS	Standard query response 0x3984 AAAA www.shcilestamp.com AAAA 64:ff9b::79f1:2d15
10.60.150.135	DNS	Standard query response 0x3984 AAAA www.shcilestamp.com AAAA 64:ff9b::79f1:2d15
10.60.150.135	GTP <DNS>	Standard query response 0x3984 AAAA www.shcilestamp.com AAAA 64:ff9b::79f1:2d15
10.60.150.135	GTP <DNS>	Standard query response 0x3984 AAAA www.shcilestamp.com AAAA 64:ff9b::79f1:2d15

DNS解析跟蹤

2. 檢查使用者級別統計資訊，檢視資料包丟包情況。

<#root>

SPGW/CP:

```
Show subscriber full imsi <imsi number>
```

CUPS UP:

```
show user-plane-only full imsi <>
```

```
input pkts: 455 output pkts: 474
input bytes: 75227 output bytes: 103267
input bytes dropped: 0 output bytes dropped: 0
input pkts dropped: 0 output pkts dropped: 0
input pkts dropped due to lorc : 0 output pkts dropped due to lorc : 0
input bytes dropped due to lorc : 0
in packet dropped suspended state: 0 out packet dropped suspended state: 0
in bytes dropped suspended state: 0 out bytes dropped suspended state: 0
in packet dropped sgw restoration state: 0 out packet dropped sgw restoration state: 0
in bytes dropped sgw restoration state: 0 out bytes dropped sgw restoration state: 0
pk rate from user(bps): 18547 pk rate to user(bps): 25330
ave rate from user(bps): 6182 ave rate to user(bps): 8443
sust rate from user(bps): 5687 sust rate to user(bps): 7768
pk rate from user(pps): 13 pk rate to user(pps): 14
ave rate from user(pps): 4 ave rate to user(pps): 4
sust rate from user(pps): 4 sust rate to user(pps): 4
link online/active percent: 92
ipv4 bad hdr: 0 ipv4 ttl exceeded: 0
ipv4 fragments sent: 0 ipv4 could not fragment: 0
ipv4 input acl drop: 0 ipv4 output acl drop: 0
ipv4 bad length trim: 0
ipv6 input acl drop: 0 ipv6 output acl drop: 0
ipv4 input css down drop: 0 ipv4 output css down drop: 0
ipv4 input css down drop: 0 ipv4 output css down drop: 0
ipv4 output xoff pkts drop: 0 ipv4 output xoff bytes drop: 0
ipv6 output xoff pkts drop: 0 ipv6 output xoff bytes drop: 0
ipv6 input ehrpd-access drop: 0 ipv6 output ehrpd-access drop: 0
input pkts dropped (0 mbr): 0 output pkts dropped (0 mbr): 0
ip source violations: 0 ipv4 output no-flow drop: 0
ipv6 egress filtered: 0
ipv4 proxy-dns redirect: 0 ipv4 proxy-dns pass-thru: 0
ipv4 proxy-dns drop: 0
ipv4 proxy-dns redirect tcp connection: 0
ipv6 bad hdr: 0 ipv6 bad length trim: 0
ip source violations no acct: 0
ip source violations ignored: 0
dormancy total: 0 handoff total: 0
ipv4 icmp packets dropped: 0
APN AMBR Input Pkts Drop: 0 APN AMBR Output Pkts Drop: 0
APN AMBR Input Bytes Drop: 0 APN AMBR Output Bytes Drop: 0
APN AMBR UE Overload Input Pkts Drop: 0 APN AMBR UE Overload Output Pkts Drop: 0
APN AMBR UE Overload Input Bytes Drop: 0 APN AMBR UE Overload Output Bytes Drop: 0
Access-flows:0
Num Auxiliary A10s:0
```

3. 檢查ECS/ACS級別資料包丟棄的show active charging命令輸出，並檢查是否存在任何資料包丟棄，然後檢查配置中的操作是什麼。

```
<#root>
```

```
show active-charging session full imsi <imsi num> or show sub user-plane-only full callid <>
```

```
Ruledef Name Pkts-Down Bytes-Down Pkts-Up Bytes-Up Hits Match-Bypassed
```

```
-----  
dns_free_covid 4 428 4 340 8 0  
icmpv6 0 0 5 1423 5 0  
ip-pkts 479 103670 432 74488 764 429
```

4. 檢查UE與伺服器之間是否成功建立了TCP連線。
5. 如果在上述任何步驟中沒有觀察到丟棄，則節點中沒有問題。

封包捨棄

- 檢查使用者版本統計資訊，以確定您是否遇到了類似於此處所示的丟包現象。

```
Total Dropped Packets : 132329995  
Total Dropped Packet Bytes: 14250717212
```

```
Total PP Dropped Packets : 0  
Total PP Dropped Packet Bytes: 0
```

```
R7Gx Rule-Matching Failure Stats:  
Total Dropped Packets : 871921  
Total Dropped Packet Bytes : 86859232
```

```
P2P random drop stats:  
Total Dropped Packets : 0  
Total Dropped Packet Bytes : 0
```

2. 檢查show subscriber輸出中觀察到的失敗百分比。如果資料包丟棄小於1%，則很可能只是偶然，不會有任何影響。

```
input pkts: 455 output pkts: 474  
input bytes: 75227 output bytes: 103267  
input bytes dropped: 0 output bytes dropped: 0  
input pkts dropped: 0 output pkts dropped: 0
```

3. 如果您注意到RX分級組中的資料包丟棄和ITC資料包丟棄，則這很可能是由於頻寬問題和使用者包過期所致。

```
ITC Packets Drop: 47235019
```

4. 在ECS級別，必須驗證DPI配置，包括規則定義、計費操作和規則庫，以確定是否存在任何阻塞因素。ECS級別有多種丟棄型別，下一步操作取決於遇到的特定丟棄型別。

5. 正在傳遞但未處理的資料包大小的MTU大小。

6. 可以透過TCP轉儲/使用者級跟蹤來辨識資料包被丟棄的中間路徑問題。

此類問題的恢復行動計畫並不相同，因為它隨問題的模式而變化。

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）。