

# ةي توصول تام لاكم ل ل قن ة لك شم فاش كتسأ VoLTE في SRVCC ميلست تقوي ف احوال صا و

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## ةمدقم ل

لقن متي ال ام دن ع احوال صا و ث دحت ي تل ة لك شم ل فاش كتسأ ةي فيك دن تسمل اذه حضوي  
SRVCC ميلست تقوي ف ةمات ةس ال سب VoLTE ةي نقت ي ةي توصول ةم لاكم

## ةيساس ال اابل طتم ل

### اابل طتم ل

ةي ل ال عيضاوم ل ابل ة فرعم ك ي دل نوكت نأب Cisco ي صوت

- 5000/5500 زارطلل ةزه ج ال ة فرعم
- StarOS

### ةمدختس مل انا نو كمل

ةني عم ةي دام انا نو كمل و جمارب انا نو كمل ي ل ع دن تسمل اذه رصت ق ي ال

ةصاخ ةي لم عم ةي ب ي ة دوجوم ل ةزه ج ال نم دن تسمل اذه ي ة دراو ل انا نو كمل انا نو كمل  
ت ناك اذا (يضا رت ف ا) حوس مم ني و ك ت ب دن تسمل اذه ي ةمدختس مل ةزه ج ال عي م ج ت ادب  
رما ي ال لم ت حمل انا نو كمل ر ي ث ا ت ل ل ك م ه ف نم د ك ا ت ف ، ل ي غ ش ت ل ا دي ق ك ت ك ب ش

## تارصت خمل

VoLTE ةي نقت

SRVCC

CCR

CCA

AVP

PCRF

PCEF

ي دم ل ل ي و ط ر و ط ت ر ب ع ت و ص ل ل

وي دار ل ا ةي دا ح ا ةي ت و ص ل ل ا م ل ا ك م ل ا ة ل ص ا و م

نام تئ ال ا ي ف م ك ح ت ل ا ب ل ط

نام تئ ال ا ي ف م ك ح ت ل ا ة ب ا ج ا

ةم س ل ا م ي ق ج و ز

ن ح ش ل ل ا ة د ع ا ق و ة س ا ي س ل ل ا ة ف ي ط و

ن ح ش ل ل ا و ة س ا ي س ل ل ا ض ر ف ة ف ي ط و

## ة ل ك ش م ل ا

ن ا ا ل ا م MME، ف ي SRVCC م ي ل س ت ح ا ج ن ن م م غ ر ل ا ي ل ع ه ن ا ن ع غ ا ل ب ا ل ا ب ة م د خ ل ا ر ف و م م ا ق ة ي ل م ع ل ا م ت ك ا د ع ب . ة م ي د ق ل ا 2G/3G ة ك ب ش ي ل ا ة س ا ل س ب ه ل ق ن م ت ي م ل VoLTE ا ع ا د ت س ا ل م ح ت SGW ي ل ا DELETE\_BEARER\_COMMAND ة ل ا س ر ل ا س ر ا ب MME ت م ا ق ، SRVCC م ي ل س ت PGW ف ي ل م ا ح ل ا ق ا ل ط ا ة ي ل م ع ت ح ج ن و ، ة ح ي ح ص ة ر ا ش ا ك ت و ص ل ل ا ل م ا ح ة م ا ل ع م ي ل س ت ب PCRف ر ط خ ي ا ل PGW ن ا ظ ح و ل ، PCRف ي ل ا PGW ن م ت ا ل ا ص ت ا ل ا ن م د ي ز م د ن ع ، ن ك ل و PS\_to\_CS\_Delivery ي ل ع م غ ر ل ا ي ل ع SRVCC ن ا ن م ا ح ج ا ن ا ك MME End.

## ا ه ا ح ا ل ص ا و ا ط ا خ ا ل ا ف ا ش ك ت س ا

د ن ع ا ه ا ح ا ل ص ا و ا ة ي ت و ص ل ل ا ت ا م ل ا ك م ل ا ة ج ل ا ع م ا ط ا خ ا ف ا ش ك ت س ا ل ا ت ا م و ل ع م م س ق ل ا ا ذ ه ر ف و ي ل ي ج ل ا ن م ة م ي د ق ل ا ة ك ب ش ل ا ي ل ا (VoLTE) ت ن ر ت ن ا ل ا ر ب ع ت و ص ل ل ا ة ي ن ق ت ن م ا ه ل ق ن ت ن ر ت ن ا ل ا ر ب ع ت و ص ل ل ا ل ي ص و ت ة ع و م ج م م ي ل س ت ة ي ل م ع ل ا ل خ ن م ث ل ا ث ل ل ا ل ي ج ل ا ل ا ي ن ا ث ل ل ا (SRVCC).

ن ي ب ة ل د ا ب ت م ل ا ل ل ا س ر ل ا ل س ل س ت ي ل ي ا م ي ف . SRVCC م ي ل س ت ع م " ة ي ع ر ف " ر ا ث ا ع م ج م ت PCRف و PGW و SGW و MME.

DELETE\_BEARER\_COMMAND true: ت و ص ل ل ا ل م ا ح ة م ا ل ع ك SGW ي ل ا MME ن م ة ل ا س ر

```
INBOUND>>>> 12:17:24:406 Eventid:141004(3)
[SGW-S11/S4]GTPv2C Rx PDU, from 10.206.33.X:30464 to 10.206.31.Y:2123 (57)
TEID: 0x81E0418E, Message type: EGTP_DELETE_BEARER_COMMAND (0x42)
Sequence Number: 0xD2101D (13766685)
GTP HEADER
  Version number: 2
  TEID flag: Present
  Piggybacking flag: Not present
  Message Priority flag: Not present
  Message Priority: NA
  Message Length: 0x0035 (53)

INFORMATION ELEMENTS
  BEARER CONTEXT:
    Type: 93 Length: 10 Inst: 0
    Value:
      EPS BEARER ID:
        Type: 73 Length: 1 Inst: 0
        Value: 7
      BEARER FLAGS:
        Type: 97 Length: 1 Inst: 0
        Value:
          VB : 1 >> voice bearer as true

  ULI TIMESTAMP:
    Type: 170 Length: 4 Inst: 0
    Value:
      Seconds: 3766718840

  USER LOCATION INFO:
```

Type: 86 Length: 13 Inst: 0

Value:

Location type: TAI

MCC: XYZ

MNC: AB

TAC: 0x7D5

Location type: ECGI

MCC: XYZ

MNC: AB

ECI: 0xE02F902

UE TIME ZONE:

Type: 114 Length: 2 Inst: 0

Value:

TZ: +5:30

DST: +0 hour

PGW: EGTP\_DELETE\_BEARER\_COMMAND رسالة SGW لسري، كلذى لى عوالة

INBOUND>>>> 12:17:24:407 Eventid:141004(3)

[PGW-S5/S2a/S2b]GTPv2C Rx PDU, from 223.224.X.Y:36368 to 223.224.A.B:2123 (57)

TEID: 0x80F0E1DB, Message type: EGTP\_DELETE\_BEARER\_COMMAND (0x42)

Sequence Number: 0xAD818E (11370894)

GTP HEADER

Version number: 2

TEID flag: Present

Piggybacking flag: Not present

Message Priority flag: Not present

Message Priority: NA

Message Length: 0x0035 (53)

INFORMATION ELEMENTS

BEARER CONTEXT:

Type: 93 Length: 10 Inst: 0

Value:

EPS BEARER ID:

Type: 73 Length: 1 Inst: 0

Value: 7

BEARER FLAGS:

Type: 97 Length: 1 Inst: 0

Value:

VB : 1

>> voice bearer as true

ULI TIMESTAMP:

Type: 170 Length: 4 Inst: 0

Value:

Seconds: 3766718840

USER LOCATION INFO:

Type: 86 Length: 13 Inst: 0

Value:

Location type: TAI

MCC: XYZ

MNC: AB

TAC: 0x7D5

Location type: ECGI

MCC: XYZ

MNC: AB

ECI: 0xE02F902

UE TIME ZONE:

Type: 114 Length: 2 Inst: 0

Value:

TZ: +5:30

DST: +0 hour

لمحال فذح ي ف أدبي و PGW DELETE\_BEARER لبق ي، كلذى لى عوالة

<<<

[PGW-S5/S2a/S2b]GTPv2C Tx PDU, from 223.224.A.B:2123 to 223.224.X.Y:36368 (17)

TEID: 0x80F3C18E, Message type: EGTP\_DELETE\_BEARER\_REQUEST (0x63)

Sequence Number: 0xAD818E (11370894)

GTP HEADER

Version number: 2  
TEID flag: Present  
Piggybacking flag: Not present  
Message Priority flag: Not present  
Message Priority: NA  
Message Length: 0x000D (13)

INFORMATION ELEMENTS

EPS BEARER ID:  
Type: 73 Length: 1 Inst: 1  
Value: 7

AVP يف ، انه PCRf. ه اجتاب CCR شي دحت ة لاسر ة ئي ه تب PGW م وق ي ، كل ذ ي ل ة فاض ل ة ل ا ح و ن ح ش ل ا ة د ع ا ق م س ا ن ع PCRf م ا ل ع ا ب PGW م وق ي ، ن ح ش ل ا ة د ع ا ق ر ي ر ق ت ب ص ا خ ل ا ز م ر - ل ش ف ل ا - ة د ع ا ق ا ط خ ل ل ا ل س ر ي PGW ن ا د ج و ي ا ن ه . ل ش ف ل ا و ة د ع ا ق ل ا ز م ر و PCC ة د ع ا ق ، ( ة ح ي ح ص ة ي ا ر ل ا ت ن ا ك ا م ك ) ت و ص ل ل ا ل م ا ح ق ا ل ط ل ا ي ل ا MME ت ر ا ش ا ا م ك و . PCRf ي ل ا ، ك ا ن ه ، كل ذ ن م ا ل د ب . PS\_to\_CS م ي ل س ت ب PCRf م ا ل ع ا ب PGW ي ل ع ب ج ي ن ا ك ، كل ذ ل ة ج ي ت ن و . PCRf ي ل ا ه ن ع غ ا ل ب ل ا م ت ي RESOURCE\_ALLOCATION\_FAILURE ي ل و د ل ا د ص ر ل ا م ا ظ ن ي ل ا كل ذ غ ا ل ب ا ب م وق ي و 4G ة ك ب ش ي ف ل ش ف ل ا ي ف ر ط ن ي PCRf ح ا ج ن م م غ ر ل ا ي ل ع و ، كل ذ ل . VoLTE ة م ل ا م ء ا ه ن ا ء د ب و ه IMS ن ا ك ، ي ل ا ت ل ا ب و ي ل ا ة س ا ل س ب ة م ل ا م ل ا ل ق ن م ت ي م ل ه ن ا ا ل ا ، SRVCC ة ئ ف ر ت و ي ب م ك ل ا ة ز ه ا ة و م ج م ة م ي د ق ل ل ا ث ل ا ل ا ل ي ج ل ل ا / ي ن ا ث ل ا ل ا ل ي ج ل ل ا ة ك ب ش .

In 3GPP TS 29.212 V13.5.0 (2016-03)

As mentioned in section 3.6, Request of IP-CAN Bearer Termination

If the IP-CAN bearer termination is caused by the PS to CS handover, the PCEF shall report related PCC rules for this IP-CAN bearer by including the Rule-Failure-Code AVP set to the value PS\_TO\_CS\_HANDOVER.

In 3GPP TS 29.212 V14.3.0 (2017-03)

As mentioned in section 4.5.6 Indication of IP-CAN Bearer Termination Implications

When the PCEF detects that a dedicated IP-CAN bearer could not be activated or has been terminated it shall remove the affected PCC rules and send a CCR command to the PCRf with CC-Request-Type AVP set to the value "UPDATE\_REQUEST", including the Charging-Rule-Report AVP specifying the affected PCC rules with the PCC-Rule-Status set to inactive and including the Rule-Failure-Code AVP assigned to the value RESOURCE\_ALLOCATION\_FAILURE.

SRVCC PS-to-CS Handover Indication Support in starOS

This feature helps in notifying the PCRf about the exact reason for PCC rule deactivation on Voice bearer deletion.

This exact cause will help PCRf to then take further action appropriately.

This feature ensures complete compliance for SRVCC, including support for PS-to-CS handover indication when voicebearers are released.

If the IP-CAN bearer termination is caused by the PS to CS handover, the PCEF may report related PCC rules for this IP-CAN bearer by including the Rule-Failure-Code AVP set to the value PS\_TO\_CS\_HANDOVER.

ن ح ش ل ا ة د ع ا ق ر ي ر ق ت ل AVP ب ق ل ع ت ي ا م ي ف PCRf ي ل ا PGW ن م CCR شي دحت ة ل اسر :

<<<

Diameter message from 10.0.232.X:32933 to 10.5.40.Y:3869

Base Header Information:

Version: 0x01 (1)  
Message Length: 0x000260 (608)  
Command Flags: 0xc0 (192) REQ PXY  
Command Code: 0x000110 (272) Credit-Control-Request  
Application ID: 0x01000016 (16777238) 3GPP-Gx  
Hop2Hop-ID: 0xb7cf10ce (3083800782)  
End2End-ID: 0x3b6b4886 (996886662)

AVP Information:

[M] Session-Id

Code: 0x00000107 (263) Session-Id  
Flags: 0x40 (64) [M]  
Length: 0x00004f (79)  
Data: 0003-diamproxy.asr55k.gx;1385806608;584234203;5cd9037d-1db02

[M] Auth-Application-Id

Code: 0x00000102 (258) Auth-Application-Id  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: 16777238

[M] Origin-Host

Code: 0x00000108 (264) Origin-Host  
Flags: 0x40 (64) [M]  
Length: 0x00002b (43)  
Data: 0003-diamproxy.asr55k.gx

[M] Origin-Realm

Code: 0x00000128 (296) Origin-Realm  
Flags: 0x40 (64) [M]  
Length: 0x00001a (26)  
Data: cisco.com

[M] Destination-Realm

Code: 0x0000011b (283) Destination-Realm  
Flags: 0x40 (64) [M]  
Length: 0x00002a (42)  
Data: PCRF.MNC0AB.MCCXYZ.3GPPNETWORK.ORG

[M] CC-Request-Type

Code: 0x000001a0 (416) CC-Request-Type  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: UPDATE\_REQUEST (2)

[M] CC-Request-Number

Code: 0x0000019f (415) CC-Request-Number  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: 2

[M] Destination-Host

Code: 0x00000125 (293) Destination-Host  
Flags: 0x40 (64) [M]  
Length: 0x000037 (55)  
Data: PCRF01.PCRF.MNC0AB.MCCXYZ.3GPPNETWORK.ORG

[M] Origin-State-Id

Code: 0x00000116 (278) Origin-State-Id  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: 1552081338

[M] Subscription-Id

Code: 0x000001bb (443) Subscription-Id  
Flags: 0x40 (64) [M]  
Length: 0x000028 (40)

[M] Subscription-Id-Type

Code: 0x000001c2 (450) Subscription-Id-Type  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: END\_USER\_E164 (0)

```
[M] Subscription-Id-Data
Code:      0x000001bc (444) Subscription-Id-Data
Flags:     0x40      (64) [M]
Length:    0x000014  (20)
Data: 121234567891

[M] Subscription-Id
Code:      0x000001bb (443) Subscription-Id
Flags:     0x40      (64) [M]
Length:    0x00002c  (44)
[M] Subscription-Id-Type
Code:      0x000001c2 (450) Subscription-Id-Type
Flags:     0x40      (64) [M]
Length:    0x00000c  (12)
Data: END_USER_IMSI (1)

[M] Subscription-Id-Data
Code:      0x000001bc (444) Subscription-Id-Data
Flags:     0x40      (64) [M]
Length:    0x000017  (23)
Data: XYZAB1234567891

[M] Framed-IPv6-Prefix
Code:      0x00000061 (97) Framed-IPv6-Prefix
Flags:     0x40      (64) [M]
Length:    0x000012  (18)
Data: Reserved: 00 Prefixlen: 64 IPv6 prefix: 2401:4900:4097:f050::

[M] User-Equipment-Info
Code:      0x000001ca (458) User-Equipment-Info
Flags:     0x40      (64) [M]
Length:    0x00002c  (44)
[M] User-Equipment-Info-Type
Code:      0x000001cb (459) User-Equipment-Info-Type
Flags:     0x40      (64) [M]
Length:    0x00000c  (12)
Data: IMEISV (0)

[M] User-Equipment-Info-Value
Code:      0x000001cc (460) User-Equipment-Info-Value
Flags:     0x40      (64) [M]
Length:    0x000018  (24)
Data: 9876543211234

[M] Called-Station-Id
Code:      0x0000001e (30) Called-Station-Id
Flags:     0x40      (64) [M]
Length:    0x00000b  (11)
Data: ims

[V] [M] Charging-Rule-Report
Code:      0x000003fa (1018) Charging-Rule-Report
Flags:     0xc0      (192) [V] [M]
Length:    0x00006c  (108)
Vendor-Id: 0x000028af (10415) 3GPP
[V] [M] Charging-Rule-Name
Code:      0x000003ed (1005) Charging-Rule-Name
Flags:     0xc0      (192) [V] [M]
Length:    0x00001e  (30)
Vendor-Id: 0x000028af (10415) 3GPP
Data: I_AD_VOLTE00F72513

[V] [M] Charging-Rule-Name
```

Code: 0x000003ed (1005) Charging-Rule-Name  
Flags: 0xc0 (192) [V] [M]  
Length: 0x00001e (30)  
Vendor-Id: 0x000028af (10415) 3GPP  
Data: I\_AD\_VOLTE00F72512

[V] [M] PCC-Rule-Status  
Code: 0x000003fb (1019) PCC-Rule-Status  
Flags: 0xc0 (192) [V] [M]  
Length: 0x000010 (16)  
Vendor-Id: 0x000028af (10415) 3GPP  
Data: INACTIVE (1)

[V] [M] Rule-Failure-Code  
Code: 0x00000407 (1031) Rule-Failure-Code  
Flags: 0xc0 (192) [V] [M]  
Length: 0x000010 (16)  
Vendor-Id: 0x000028af (10415) 3GPP  
Data: RESOURCE\_ALLOCATION\_FAILURE (10)

>> failure code is incorrect. It should be PS\_CS\_Handover

[V] [M] Access-Network-Charging-Address  
Code: 0x000001f5 (501) Access-Network-Charging-Address  
Flags: 0xc0 (192) [V] [M]  
Length: 0x000012 (18)  
Vendor-Id: 0x000028af (10415) 3GPP  
Data: IPv4 223.224.X.Y

لحل اى روثعل ا مت .rel-8 رطقلا سوم اق م ادخست! مت لى عمل ا ةكبش يف ل حل ا PS\_CS\_Transfer يف دم تعم ريغ .rel-8.

3GPP-R10 اى ا سوم اقل ا شى دجت دع ب .3GPP-R10 اى ا سوم اقل ا شى دجت ل ج اتحت ،كلذل PS\_CS\_Transfer م يلى ست ه ن اى ا حى حص لك شب ببسلا ل اسر ا متى

اى ا ةرداق نى نى ا ه ن ل ا نى م دخت سم ل ل ة يتوصل ا تام ل اكمل ا نوك ت دق ،كلذ دع ب ا توصلا ة ينقت نم ة م يدقلا ا ثلا ا لى ل ا لى ل ا لى ل ا ةكبش اى ا ة سالى م يلى ست ل ا (VoLTE) تنرتن ا ل ا قوف

ims-auth-service DRA\_Gx\_SPG

policy-control

diameter dictionary r8-gx-standard

diameter update-dictionary-avps 3gpp-r10 << diameter dictionary updated to 3gpp-r10

true: توصلا ل م ا ح ة م ال عك PGW اى ل ا SGW نم DELETE\_BEARER\_COMMAND ة ل اسر

INBOUND>>>> From sessmgr:205 tpc\_interface.c:1338 (Callid 3cda3ef4) 13:28:21:659

Eventid:141004(3)

[PGW-S5/S2a/S2b]GTPv2C Rx PDU, from 223.224.M.N:39632 to 223.224.P.Q:2123 (57)

TEID: 0x845800CD, Message type: EGTP\_DELETE\_BEARER\_COMMAND (0x42)

Sequence Number: 0xE9625A (15295066)

GTP HEADER

Version number: 2

TEID flag: Present

Piggybacking flag: Not present

Message Priority flag: Not present

Message Priority: NA

Message Length: 0x0035 (53)

INFORMATION ELEMENTS

BEARER CONTEXT:

Type: 93 Length: 10 Inst: 0

Value:

EPS BEARER ID:

Type: 73 Length: 1 Inst: 0

Value: 7

BEARER FLAGS:

Type: 97 Length: 1 Inst: 0  
Value:

**VB : 1**

**>> voice bearer as true**

ULI TIMESTAMP:

Type: 170 Length: 4 Inst: 0  
Value:

Seconds: 3769747091

USER LOCATION INFO:

Type: 86 Length: 13 Inst: 0  
Value:

Location type: TAI  
MCC: XYZ  
MNC: AB  
TAC: 0x844  
Location type: ECGI  
MCC: XYZ  
MNC: AB  
ECI: 0xDCf8C02

UE TIME ZONE:

Type: 114 Length: 2 Inst: 0  
Value:

TZ: +5:30  
DST: +0 hour

اهلما حارس قالط! يف عرشتو ةداملا هذه ةكرشلا لبقت ،كلذ ىلع ةوالعو  
<<<

[PGW-S5/S2a/S2b]GTPv2C Tx PDU, from 223.224.M.N:2123 to 223.224.P.Q:39632 (17)

TEID: 0x8064A25A, Message type: EGTP\_DELETE\_BEARER\_REQUEST (0x63)

Sequence Number: 0xE9625A (15295066)

GTP HEADER

Version number: 2  
TEID flag: Present  
Piggybacking flag: Not present  
Message Priority flag: Not present  
Message Priority: NA  
Message Length: 0x000D (13)

INFORMATION ELEMENTS

EPS BEARER ID:

Type: 73 Length: 1 Inst: 1  
Value: 7

لشفلا زمر عم نحشلا ةدعاقب صاخلا AVP ب قلعتي ام يف PCRF ىل! PGW نم CCR  
لشفلا PS\_CS\_Transfer. هنىل ىلع هيل! رظني يذلا  
<<<

Diameter message from 10.206.17.X:51119 to 10.5.40.Y:3007

Base Header Information:

Version: 0x01 (1)  
Message Length: 0x000260 (608)  
Command Flags: 0xc0 (192) REQ PXY  
Command Code: 0x000110 (272) Credit-Control-Request  
Application ID: 0x01000016 (16777238) 3GPP-Gx  
Hop2Hop-ID: 0xaebac4d3 (2931475667)  
End2End-ID: 0x19b8ec95 (431549589)

AVP Information:

[M] Session-Id

Code: 0x00000107 (263) Session-Id  
Flags: 0x40 (64) [M]  
Length: 0x00004e (78)

Data: 0007-diamproxy.asr55k.dra.gx;1020935924;202167245;5d0747d1-cd02

[M] Auth-Application-Id

Code: 0x00000102 (258) Auth-Application-Id



Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: 16777238

[M] Origin-Host

Code: 0x00000108 (264) Origin-Host  
Flags: 0x40 (64) [M]  
Length: 0x00002b (43)  
Data: 0007-diamproxy.asr55k.dra.gx

[M] Origin-Realm

Code: 0x00000128 (296) Origin-Realm  
Flags: 0x40 (64) [M]  
Length: 0x00001a (26)  
Data: cisco.com

[M] Destination-Realm

Code: 0x0000011b (283) Destination-Realm  
Flags: 0x40 (64) [M]  
Length: 0x00002a (42)  
Data: PCRF.MNC0AB.MCCXYZ.3GPPNETWORK.ORG

[M] CC-Request-Type

Code: 0x000001a0 (416) CC-Request-Type  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: UPDATE\_REQUEST (2)

[M] CC-Request-Number

Code: 0x0000019f (415) CC-Request-Number  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: 2

[M] Destination-Host

Code: 0x00000125 (293) Destination-Host  
Flags: 0x40 (64) [M]  
Length: 0x000037 (55)  
Data: PCRF01.NO.DC.PCRF.MNC0AB.MCCXYZ.3GPPNETWORK.ORG

[M] Origin-State-Id

Code: 0x00000116 (278) Origin-State-Id  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: 1559087623

[M] Subscription-Id

Code: 0x000001bb (443) Subscription-Id  
Flags: 0x40 (64) [M]  
Length: 0x000028 (40)

[M] Subscription-Id-Type

Code: 0x000001c2 (450) Subscription-Id-Type  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: END\_USER\_E164 (0)

[M] Subscription-Id-Data

Code: 0x000001bc (444) Subscription-Id-Data  
Flags: 0x40 (64) [M]  
Length: 0x000014 (20)  
Data: 121234567891

[M] Subscription-Id

Code: 0x000001bb (443) Subscription-Id

Flags: 0x40 (64) [M]  
Length: 0x00002c (44)  
[M] Subscription-Id-Type  
Code: 0x000001c2 (450) Subscription-Id-Type  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: END\_USER\_IMSI (1)

[M] Subscription-Id-Data  
Code: 0x000001bc (444) Subscription-Id-Data  
Flags: 0x40 (64) [M]  
Length: 0x000017 (23)  
Data: XYZAB1234567891

[M] Framed-IPv6-Prefix  
Code: 0x00000061 (97) Framed-IPv6-Prefix  
Flags: 0x40 (64) [M]  
Length: 0x000012 (18)  
Data: Reserved: 00 Prefixlen: 64 IPv6 prefix: 2401:4900:4071:32ec::

[M] User-Equipment-Info  
Code: 0x000001ca (458) User-Equipment-Info  
Flags: 0x40 (64) [M]  
Length: 0x00002c (44)  
[M] User-Equipment-Info-Type  
Code: 0x000001cb (459) User-Equipment-Info-Type  
Flags: 0x40 (64) [M]  
Length: 0x00000c (12)  
Data: IMEISV (0)

[M] User-Equipment-Info-Value  
Code: 0x000001cc (460) User-Equipment-Info-Value  
Flags: 0x40 (64) [M]  
Length: 0x000018 (24)  
Data: 9876543211234

[M] Called-Station-Id  
Code: 0x0000001e (30) Called-Station-Id  
Flags: 0x40 (64) [M]  
Length: 0x00000b (11)  
Data: ims

[V] [M] Charging-Rule-Report  
Code: 0x000003fa (1018) Charging-Rule-Report  
Flags: 0xc0 (192) [V] [M]  
Length: 0x00006c (108)  
Vendor-Id: 0x000028af (10415) 3GPP  
[V] [M] Charging-Rule-Name  
Code: 0x000003ed (1005) Charging-Rule-Name  
Flags: 0xc0 (192) [V] [M]  
Length: 0x00001e (30)  
Vendor-Id: 0x000028af (10415) 3GPP  
Data: I\_AD\_VOLTE03D4E98A

[V] [M] Charging-Rule-Name  
Code: 0x000003ed (1005) Charging-Rule-Name  
Flags: 0xc0 (192) [V] [M]  
Length: 0x00001e (30)  
Vendor-Id: 0x000028af (10415) 3GPP  
Data: I\_AD\_VOLTE03D4E989

[V] [M] PCC-Rule-Status  
Code: 0x000003fb (1019) PCC-Rule-Status  
Flags: 0xc0 (192) [V] [M]

Length: 0x000010 (16)  
Vendor-Id: 0x000028af (10415) 3GPP  
Data: INACTIVE (1)

[V] [M] Rule-Failure-Code

Code: 0x00000407 (1031) Rule-Failure-Code  
Flags: 0xc0 (192) [V] [M]  
Length: 0x000010 (16)  
Vendor-Id: 0x000028af (10415) 3GPP  
Data: PS\_TO\_CS\_HANDOVER (13)

>> failure code seen as

PS\_to\_CS\_Handover

[V] [M] Access-Network-Charging-Address

Code: 0x000001f5 (501) Access-Network-Charging-Address  
Flags: 0xc0 (192) [V] [M]  
Length: 0x000012 (18)  
Vendor-Id: 0x000028af (10415) 3GPP  
Data: IPv4 223.224.X.Y

VOLTE ةينقت نم ةسالسب ةيتوص ةملاكم لقنل بسانملا رطقلا سوماق مادختسإ مزلي  
ةعومجم ميلست لالخ نم ةميدقلا ثلاثلا ليجلا/يناثلا ليجلا ةكبش ىلإ 4G يف  
ىلإ رطقلا سوماق شي دحت دعب اذه معد مت . (SRVCC) يطاي تحال اخسنلا تاودأ  
3gpp-rel10 IMS-Auth-Service. نمض

ةمچرتل هذه لوج

ةللأل تاي نقتل نمة ومة مادختساب دن تسمل اذة Cisco تمةرت  
ملاعلاء انء مء مء نمة دختسمل معد ى وتحم مء دقتل ةر شبل او  
امك ةق قء نوك ت نل ةللأل ةمچرت لصف أن ةظحال مء ءرء. ةصاأل مء تءل ب  
Cisco ةللخت. فرتحم مچرت مءم دقء ةللأل ةل فارتحال ةمچرتل عم لاعل او  
ىل إأمءءاد ءوچرلاب ةصوء و تاملرتل هذه ةقء نء اهءل وئس م Cisco  
Systems (رفوتم طبارل) ةل صأل ةل ءل ءن إل دن تسمل