Solución de problemas de degradación de KPI 4G ASR debido a un aumento en el motivo de desconexión desconocida del usuario mme-hss

Contenido

Introducción

Este documento describe cómo resolver el problema que ocurre cuando se produce la degradación del indicador clave de rendimiento (KPI) de la tasa de éxito de la adhesión 4G cuando aumenta la razón de desconexión **mme-hss-user-unknown**.

Prerequisites

Requirements

Cisco recomienda que tenga conocimiento sobre estos temas:

- Conocimiento de hardware de 5000/5500
- StarOS

Componentes Utilizados

Este documento no tiene restricciones específicas en cuanto a versiones de software y de hardware.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. Si tiene una red en vivo, asegúrese de entender el posible impacto de cualquier comando.

Abreviaturas

ASR	Asociar índice de éxito
KPI	Indicador de rendimiento clave
AIR	Solicitud de información de autenticación
AIA	Respuesta de información de autenticación
CER	Solicitud de intercambio de capacidades
CEA	Respuesta de intercambio de capacidades
MME	Entidad de gestión de movilidad
HSS	Home Subscriber Server
DPC	Tarjeta de procesamiento de datos
RFC	Solicitud de comentarios
AVP	Par valor de atributo

Problema

El proveedor de servicios informó de la degradación del ASR 4G en un MME y la razón de desconexión 'mme-hss-user-unknown' aumentó.

"mme-hss-user-unknown(375)", la razón de desconexión describe el número total de sesiones desconectadas porque se desconoce el usuario de MME HSS.

Un seguimiento de falla que se capturó informó que HSS estaba rechazando la autenticación como DIAMETER_MISSING_AVP (5005) en el mensaje AIA.

MME constantemente recibió "DIAMETER_MISSING_AVP (5005)" de HSS y así es como se ve el mensaje AIA de falla:

```
INBOUND>>>>>  From diamproxy:52 oxy_conn_mgmt.c:3406 (Callid 4c0ea07a) 08:42:11:109
Eventid:81991(5)
Diameter message from 10.5.40.X:6000 to 10.0.231.Y:49417
Base Header Information:
   Version:            0x01        (1)
   Message Length:     0x000110    (272)
   Command Flags:      0x40        (64)  PXY
   Command Code:       0x00013e    (318) Authentication-Information-Answer
   Application ID:     0x01000023  (16777251)   3GPP-S6a
   Hop2Hop-ID:         0xadb40545  (2914256197)
   End2End-ID:         0x2cafadd5  (749710805)
  AVP Information:
     [M]  Session-Id
        Code:      0x00000107 (263) Session-Id
        Flags:     0x40       (64)  [M]
        Length:    0x000069   (105)
        Data: 0004-
diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNET;1276027002;2496613;5c204e8b-16502
     [M]  Auth-Session-State
        Code:      0x00000115 (277) Auth-Session-State
        Flags:     0x40       (64)  [M]
        Length:    0x00000c   (12)
        Data: NO_STATE_MAINTAINED (1)
     [M]  Origin-Host
        Code:      0x00000108 (264) Origin-Host
        Flags:     0x40       (64)  [M]
        Length:    0x000033   (51)
```

```
      Data: hss101.epc.mnc0XY.mcc404.3gppnetwork.org
    [M]  Origin-Realm
      Code:      0x00000128 (296) Origin-Realm
      Flags:     0x40       (64)  [M]
      Length:    0x000029  (41)
      Data: epc.mnc0XY.mcc404.3gppnetwork.org
    [M]  Result-Code
      Code:      0x0000010c (268) Result-Code
      Flags:     0x40       (64)  [M]
      Length:    0x00000c   (12)
      Data: DIAMETER_MISSING_AVP (5005) >> DIAMETER_MISSING_AVP(5005)received from HSS
    [M]  Failed-AVP
      Code:      0x00000117 (279) Failed-AVP
      Flags:     0x40       (64)  [M]
      Length:    0x000018   (24)
       [V] [M]  Visited-PLMN-Id
         Code:      0x0000057f (1407) Visited-PLMN-Id
         Flags:     0xc0       (192) [V]  [M]
         Length:    0x00000d   (13)
         Vendor-Id: 0x000028af (10415) 3GPP
         Data: 0x00
```

Troubleshoot

Esta sección proporciona información que puede utilizar para resolver el problema de degradación de ASR KPI debido a un aumento en la razón de desconexión mme-hss-user-unknown.

El "mon sub" recolectado es rastreado y comparado con el escenario de éxito y fracaso. El AVP de funciones admitidas no se encuentra en el AIR de MME al servidor HSS.

Los mensajes AIR y AIA exitosos se capturan de la **subtraza mon**. Este es el mensaje AIR que se envía de MME a HSS:

```
Monday December 24 2018
<<<<OUTBOUND  From diamproxy:49 diamproxy_rlf.c:553 (Callid 62adced4) 08:42:39:580
Eventid:81990(5)
Diameter message from 10.0.231.Y:48273 to 10.5.40.X:6000
  Base Header Information:
   Version:            0x01        (1)
   Message Length:     0x0001c4   (452)
   Command Flags:      0xc0        (192) REQ PXY
   Command Code:       0x00013e    (318) Authentication-Information-Request
   Application ID:     0x01000023(16777251)   3GPP-S6a
   Hop2Hop-ID:         0xadbdf12a  (2914906410)
   End2End-ID:         0x60bd9382  (1623036802)
  AVP Information:
     [M]Session-Id
       Code:      0x00000107 (263) Session-Id
       Flags:     0x40      (64)  [M]
       Length:    0x000069  (105)
       Data: 0001-
diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNET;1655557844;4204805;5c204ea7-30502
     [M]Auth-Session-State
       Code:      0x00000115 (277) Auth-Session-State
       Flags:     0x40      (64)  [M]
       Length:    0x00000c  (12)
       Data: NO_STATE_MAINTAINED (1)
     [M]Origin-Host
       Code:      0x00000108 (264) Origin-Host
```

```
   Flags:     0x40      (64)  [M]
   Length:    0x00004f  (79)
   Data: 0001-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
[M]Origin-Realm
   Code:      0x00000128 (296) Origin-Realm
   Flags:     0x40      (64)  [M]
   Length:    0x00002d  (45)
   Data: MME.epc.mnc0XY.mcc404.3gppnetwork.org
[M]Destination-Realm
   Code:      0x0000011b (283) Destination-Realm
   Flags:     0x40      (64)  [M]
   Length:    0x000029  (41)
   Data: epc.mnc0XY.mcc404.3gppnetwork.org
[M]User-Name
   Code:      0x00000001 (1) User-Name
   Flags:     0x40      (64)  [M]
   Length:    0x000017  (23)
   Data: 404XY0000011111
[V]Supported-Features
   Code:      0x00000274 (628) Supported-Features
   Flags:    0x80       (128) [V]
   Length:    0x000038  (56)
   Vendor-Id: 0x000028af (10415) 3GPP
    [M]Vendor-Id
       Code:      0x0000010a (266) Vendor-Id
       Flags:     0x40      (64)  [M]
       Length:    0x00000c  (12)
       Data: 10415
    [V]Feature-List-ID
       Code:      0x00000275 (629) Feature-List-ID
       Flags:     0x80      (128) [V]
       Length:    0x000010  (16)
       Vendor-Id: 0x000028af (10415) 3GPP
       Data: 1
    [V]Feature-List
       Code:      0x00000276 (630) Feature-List
       Flags:     0x80      (128) [V]
       Length:    0x000010  (16)
       Vendor-Id: 0x000028af (10415) 3GPP
       Data: 469763591
[V] [M]Requested-EUTRAN-Authentication-Info
   Code:      0x00000580 (1408) Requested-EUTRAN-Authentication-Info
   Flags:     0xc0      (192) [V]  [M]
   Length:    0x00002c  (44)
   Vendor-Id: 0x000028af (10415) 3GPP
    [V] [M]  Number-Of-Requested-Vectors
       Code:      0x00000582 (1410) Number-Of-Requested-Vectors
       Flags:     0xc0      (192) [V]  [M]
       Length:    0x000010  (16)
       Vendor-Id: 0x000028af (10415) 3GPP
       Data: 1
    [V] [M]  Immediate-Response-Preferred
       Code:      0x00000584 (1412) Immediate-Response-Preferred
       Flags:     0xc0      (192) [V]  [M]
       Length:   0x000010   (16)
       Vendor-Id: 0x000028af (10415) 3GPP
       Data: 1
[V] [M]Visited-PLMN-Id
   Code:      0x0000057f (1407) Visited-PLMN-Id
   Flags:    0xc0       (192) [V]  [M]
   Length:    0x00000f  (15)
   Vendor-Id: 0x000028af (10415) 3GPP
   Data: 0x04f4YX
```

El mensaje AIA que se envía de HSS a MME es:

```
INBOUND>>>>>  From diamproxy:49 oxy_conn_mgmt.c:3406 (Callid 62adced4) 08:42:39:601
Eventid:81991(5)
Diameter message from 10.5.40.X:6000 to 10.0.231.Y:48273
  Base Header Information:
   Version:            0x01        (1)
   Message Length:     0x000198   (408)
   Command Flags:      0x40        (64)PXY
   Command Code:       0x00013e    (318) Authentication-Information-Answer
   Application ID:     0x01000023(16777251)   3GPP-S6a
   Hop2Hop-ID:         0xadbdf12a  (2914906410)
   End2End-ID:         0x60bd9382  (1623036802)
  AVP Information:
     [M]Session-Id
        Code:      0x00000107 (263) Session-Id
        Flags:     0x40      (64)  [M]
        Length:    0x000069  (105)
        Data: 0001-
diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNET;1655557844;4204805;5c204ea7-30502
    [M]Auth-Session-State
        Code:      0x00000115 (277) Auth-Session-State
        Flags:     0x40      (64)  [M]
        Length:    0x00000c  (12)
        Data: NO_STATE_MAINTAINED (1)
     [M]Origin-Realm
        Code:      0x00000128 (296) Origin-Realm
        Flags:     0x40      (64)  [M]
        Length:    0x000029  (41)
        Data: epc.mnc0XY.mcc404.3gppnetwork.org
     [M]Origin-Host
        Code:      0x00000108 (264) Origin-Host
        Flags:     0x40      (64)  [M]
        Length:    0x000033  (51)
        Data: hss304.epc.mnc0XY.mcc404.3gppnetwork.org
     [V] [M]Authentication-Info
        Code:      0x00000585 (1413) Authentication-Info
        Flags:     0xc0      (192) [V]  [M]
        Length:    0x0000a0  (160)
        Vendor-Id: 0x000028af (10415) 3GPP
         [V] [M]  EUTRAN-Vector
            Code:      0x00000586 (1414) EUTRAN-Vector
            Flags:     0xc0      (192) [V]  [M]
            Length:    0x000094  (148)
            Vendor-Id: 0x000028af (10415) 3GPP
             [V] [M]  Item-Number
                Code:      0x0000058b (1419) Item-Number
                Flags:     0xc0      (192) [V]  [M]
                Length:    0x000010  (16)
                Vendor-Id: 0x000028af (10415) 3GPP
                Data: 1
             [V] [M]  RAND
                Code:      0x000005a7 (1447) RAND
                Flags:     0xc0      (192) [V]  [M]
                Length:    0x00001c  (28)
                Vendor-Id: 0x000028af (10415) 3GPP
                Data: 0xc8d8ecce3d684b36ee5aa7aaadaf2658
             [V] [M]  XRES
                Code:      0x000005a8 (1448) XRES
                Flags:     0xc0      (192) [V]  [M]
                Length:    0x000014  (20)
                Vendor-Id: 0x000028af (10415) 3GPP
```

```
            Data: 0x7a74729d5a811ac9
         [V] [M]  AUTN
            Code:      0x000005a9 (1449) AUTN
            Flags:     0xc0      (192) [V]  [M]
            Length:    0x00001c  (28)
            Vendor-Id: 0x000028af (10415) 3GPP
            Data: 0xddc5adb739e6800088e9c8135c3099d4
         [V] [M]  KASME
            Code:      0x000005aa (1450) KASME
            Flags:     0xc0      (192) [V]  [M]
            Length:    0x00002c  (44)
            Vendor-Id: 0x000028af (10415) 3GPP
            Data: 0xbf4c4f11f05d9c8c1e39d1066c6cdb92080760e40d0273b015cfffd4a20325fc
   [M]Result-Code
      Code:      0x0000010c (268) Result-Code
      Flags:     0x40      (64)  [M]
      Length:    0x00000c  (12)
      Data: DIAMETER_SUCCESS (2001)
```

Los mensajes AIR y AIA de falla se capturan de la **subtraza mon**.

El mensaje AIR que se envía de MME a HSS es:

```
<<<<OUTBOUND  From diamproxy:52 diamproxy_rlf.c:553 (Callid 4c0ea07a) 08:42:11:089
Eventid:81990(5)
Diameter message from 10.0.231.Y:49417 to 10.5.40.X:6000
 Base Header Information:
  Version:            0x01        (1)
  Message Length:     0x000150    (336)
  Command Flags:      0xc0        (192) REQ PXY
  Command Code:       0x00013e    (318) Authentication-Information-Request
  Application ID:     0x01000023  (16777251)   3GPP-S6a
  Hop2Hop-ID:         0xadb40545  (2914256197)
  End2End-ID:         0x2cafadd5  (749710805)
 AVP Information:
    [M]  Session-Id
       Code:      0x00000107 (263) Session-Id
       Flags:     0x40       (64)  [M]
       Length:    0x000069   (105)
       Data: 0004-
diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNET;1276027002;2496613;5c204e8b-16502
    [M]  Auth-Session-State
       Code:      0x00000115 (277) Auth-Session-State
       Flags:     0x40       (64)  [M]
       Length:    0x00000c   (12)
       Data: NO_STATE_MAINTAINED (1)
    [M]  Origin-Host
       Code:      0x00000108 (264) Origin-Host
       Flags:     0x40       (64)  [M]
       Length:    0x00004f   (79)
       Data: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
    [M]  Origin-Realm
       Code:      0x00000128 (296) Origin-Realm
       Flags:     0x40       (64)  [M]
       Length:    0x00002d   (45)
       Data: MME.epc.mnc0XY.mcc404.3gppnetwork.org
    [M]  Destination-Realm
       Code:      0x0000011b (283) Destination-Realm
       Flags:     0x40       (64)  [M]
       Length:    0x000029   (41)
```

```
      Data: epc.mnc0XY.mcc404.3gppnetwork.org
    [M]  User-Name
      Code:      0x00000001 (1) User-Name
      Flags:     0x40       (64)  [M]
      Length:    0x000017   (23)
      Data: 404XY0000022222
```

El mensaje AIA que se envía de HSS a MME es:

```
INBOUND>>>>>  From diamproxy:52 oxy_conn_mgmt.c:3406 (Callid 4c0ea07a) 08:42:11:109
Eventid:81991(5)
Diameter message from 10.5.40.X:6000 to 10.0.231.Y:49417
 Base Header Information:
  Version:            0x01        (1)
  Message Length:     0x000110    (272)
  Command Flags:      0x40        (64)  PXY
  Command Code:       0x00013e    (318) Authentication-Information-Answer
  Application ID:     0x01000023  (16777251)   3GPP-S6a
  Hop2Hop-ID:         0xadb40545  (2914256197)
  End2End-ID:         0x2cafadd5  (749710805)
 AVP Information:
    [M]  Session-Id
      Code:      0x00000107 (263) Session-Id
      Flags:     0x40       (64)  [M]
      Length:    0x000069   (105)
      Data: 0004-
diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNET;1276027002;2496613;5c204e8b-16502
    [M]  Auth-Session-State
      Code:      0x00000115 (277) Auth-Session-State
      Flags:     0x40       (64)  [M]
      Length:    0x00000c   (12)
      Data: NO_STATE_MAINTAINED (1)
    [M]  Origin-Host
      Code:      0x00000108 (264) Origin-Host
      Flags:     0x40       (64)  [M]
      Length:    0x000033   (51)
      Data: hss101.epc.mnc0XY.mcc404.3gppnetwork.org
    [M]  Origin-Realm
      Code:      0x00000128 (296) Origin-Realm
      Flags:     0x40       (64)  [M]
      Length:    0x000029   (41)
      Data: epc.mnc0XY.mcc404.3gppnetwork.org
    [M]  Result-Code
      Code:      0x0000010c (268) Result-Code
      Flags:     0x40       (64)  [M]
      Length:    0x00000c   (12)
       Data: DIAMETER_MISSING_AVP (5005)              >>DIAMETER_MISSING_AVP(5005)received from
HSS
    [M]  Failed-AVP
      Code:      0x00000117 (279) Failed-AVP
      Flags:     0x40       (64)  [M]
      Length:    0x000018   (24)
       [V] [M]  Visited-PLMN-Id
         Code:      0x0000057f (1407) Visited-PLMN-Id
         Flags:     0xc0       (192) [V]  [M]
         Length:    0x00000d   (13)
         Vendor-Id: 0x000028af (10415) 3GPP
         Data: 0x00
```

Según el **comando mon sub trace**, se recibe el error "DIAMETER_MISSING_AVP (5005)" para 0004-diamproxy, que está asociado solamente con la tarjeta DPC 2.

```
[local]SGSN-MME-03# show diameter  peers full endpoint DRA1 | grep -i -E "CPU|LOCAL HOST"
Monday December 24 11:34:47 IST 2018
 Local Hostname: 0001-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 8/1                                Task: diamproxy-49
 Local Hostname: 0002-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 9/1                                Task: diamproxy-50
 Local Hostname: 0003-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 3/1                                Task: diamproxy-51
  Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
  CPU: 2/1                                Task: diamproxy-52
 Local Hostname: 0005-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 4/1                                Task: diamproxy-53
 Local Hostname: 0006-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 7/1                                Task: diamproxy-54
 Local Hostname: 0001-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 8/1                                Task: diamproxy-49
 Local Hostname: 0002-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 9/1                                Task: diamproxy-50
 Local Hostname: 0003-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 3/1                                Task: diamproxy-51
 Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 2/1                                Task: diamproxy-52
 Local Hostname: 0005-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 4/1                                Task: diamproxy-53
 Local Hostname: 0006-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 CPU: 7/1                                Task: diamproxy-54
[local]SGSN-MME-03#
```

Parece ser que la razón de desconexión de ' **mme-hss-user-unknown'** aumenta para aquellas instancias de sessmgr que se asocian solamente con la tarjeta DPC 2.

```
******** show task resources *******
                   task   cputime        memory     files     sessions
cpu facility      instused  allc   usedalloc used allc  used  allc S status
---------------------- ----------- ------------- --------- ------------- ------
 ..
2/1 sessmgr        749 3.07%  100% 355.0M 900.0M  173500   881 12000 I   good
2/1 sessmgr        762 2.86%  100% 353.3M 900.0M  171500   881 12000 I   good
<additional outputs supressed>
```

Disconnect reason for smgr-instance 749:

```
[local]SGSN-MME-03# show session disconnect-reasons smgr-instance 749|grep -i hss-us
Monday December 24 13:45:17 IST 2018
mme-hss-user-unknown                                          788     8.97597
[local]SGSN-MME-03# show session disconnect-reasons smgr-instance 749|grep -i hss-us
Monday December 24 13:45:19 IST 2018
mme-hss-user-unknown                                          790     8.99158
```

-------------------- -

Disconnect reason for smgr-instance 762:

```
[local]SGSN-MME-03# show session disconnect-reasons smgr-instance 762|grep -i hss-us
Monday December 24 13:45:26 IST 2018
mme-hss-user-unknown                                          743     8.16125
[local]SGSN-MME-03# show session disconnect-reasons smgr-instance 762|grep -i hss-us
Monday December 24 13:45:31 IST 2018
mme-hss-user-unknown                                          744     8.16147
[local]SGSN-MME-03# show session disconnect-reasons smgr-instance 762|grep -i hss-us
Monday December 24 13:45:32 IST 2018
mme-hss-user-unknown                                          749     8.20732
[local]SGSN-MME-03# show session disconnect-reasons smgr-instance 762|grep -i hss-us
Monday December 24 13:45:34 IST 2018
mme-hss-user-unknown                                          750     8.20659
```

Cuando se marca más, las ID de proveedor admitidas han sido 'none' para el par HSS con la tarjeta DPC 2.

```
[local]SGSN-MME-03# show diameter peers full peer-host dra01.epc.mnc0XY.mcc404.3gppnetwork.org

--------------------------------------------------------------------------------
Context: s6a Endpoint: HSS_DRA01
--------------------------------------------------------------------------------
Peer Hostname: dra01.epc.mnc0xy.mcc404.3gppnetwork.org
 Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 Peer Realm: epc.mnc0XY.mcc404.3gppnetwork.org
 Local Realm: MME.epc.mnc0XY.mcc404.3gppnetwork.org
 Peer Address: 10.5.40.X:6000
 State: OPEN [SCTP]
 CPU: 2/1                              Task: sessmgr-4
 Messages Out/Queued: H0.L0/H0.L0
 Supported Vendor IDs: None                          >> Supported Vendor IDs: none instead of
10415
  Admin Status: Enable
  DPR Disconnect: N/A
  Peer Backoff Timer running:N/A
-----------
Peer Hostname: dra01.epc.mnc0xy.mcc404.3gppnetwork.org
  Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
  Peer Realm: epc.mnc0XY.mcc404.3gppnetwork.org
  Local Realm: MME.epc.mnc0XY.mcc404.3gppnetwork.org
  Peer Address: 10.5.40.X:6000
  State: OPEN [SCTP]
  CPU: 2/2                              Task: sessmgr-8
  Messages Out/Queued: H0.L0/H0.L0
  Supported Vendor IDs: None                          >> Supported Vendor IDs: none instead of
10415
  Admin Status: Enable
  DPR Disconnect: N/A
  Peer Backoff Timer running:N/A
------------
Peer Hostname: dra01.epc.mnc0xy.mcc404.3gppnetwork.org
  Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
  Peer Realm: epc.mnc0XY.mcc404.3gppnetwork.org
  Local Realm: MME.epc.mnc0XY.mcc404.3gppnetwork.org
 Peer Address: 10.5.40.X:6000
  State: OPEN [SCTP]
  CPU: 2/0                              Task: sessmgr-15
  Messages Out/Queued: H0.L0/H0.L0
  Supported Vendor IDs: None                          >> Supported Vendor IDs: none instead of
10415
  Admin Status: Enable
  DPR Disconnect: N/A
  Peer Backoff Timer running:N/A
------------
Peer Hostname: dra01.epc.mnc0xy.mcc404.3gppnetwork.org
  Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
  Peer Realm: epc.mnc0XY.mcc404.3gppnetwork.org
  Local Realm: MME.epc.mnc0XY.mcc404.3gppnetwork.org
  Peer Address: 10.5.40.X:6000
  State: OPEN [SCTP]
  CPU: 2/0                              Task: sessmgr-20
  Messages Out/Queued: H0.L0/H0.L0
  Supported Vendor IDs: None                          >> Supported Vendor IDs: none instead of
10415
  Admin Status: Enable
  DPR Disconnect: N/A
  Peer Backoff Timer running:N/A
------------
Peer Hostname: dra01.epc.mnc0xy.mcc404.3gppnetwork.org
```

```
  Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
  Peer Realm: epc.mnc0XY.mcc404.3gppnetwork.org
  Local Realm: MME.epc.mnc0XY.mcc404.3gppnetwork.org
  Peer Address: 10.5.40.X:6000
  State: OPEN [SCTP]
  CPU: 2/1                                Task: sessmgr-27
  Messages Out/Queued: H0.L0/H0.L0
  Supported Vendor IDs: None                          >> Supported Vendor IDs: none instead of
10415
  Admin Status: Enable
  DPR Disconnect: N/A
  Peer Backoff Timer running:N/A
```

Solución

Parece que el AVP "ID de proveedor admitido" no se negocia con la tarjeta DPC 2 y por lo tanto se observa la falla sólo para esa tarjeta.

Según el RFC 3588,

AVP con ID de proveedor admitido - Esto se utiliza en los mensajes CER y CEA para informar al par de que el remitente admite (un subconjunto de) los AVP específicos del proveedor definidos por el proveedor identificado en este AVP.

AVP de ID de proveedor - En combinación con el AVP de ID de proveedor admitido, esto podría usarse para saber qué atributos específicos del proveedor pueden enviarse al par.

Para intercambiar las capacidades entre el par de diámetro y el cliente, este plan de acción se sugiere al proveedor de servicio.

El plan de acción es migrar la tarjeta DPC 2 con la tarjeta DPC 10 en espera.

```
[local]SGSN-MME-03# card migrate from 2 to 10
Are you sure? [Yes|No]: yes
```

El proveedor de servicios realizó la migración de la tarjeta DPC 2 con la tarjeta DPC en espera 10.

La actividad posterior, las ID de proveedor admitidas (10415) parecían estar bien para la tarjeta 10 con el hss-peer respectivo y el ASR KPI parecía estar bien también.

```
[local]SGSN-MME-03# show diameter peers full peer-host dra01.epc.mnc0XY.mcc404.3gppnetwork.org

--------------------------------------------------------------------------------
Context: s6a Endpoint: HSS_DRA01
--------------------------------------------------------------------------------
Peer Hostname: dra01.epc.mnc0xy.mcc404.3gppnetwork.org
 Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 Peer Realm: epc.mnc0XY.mcc404.3gppnetwork.org
 Local Realm: MME.epc.mnc0XY.mcc404.3gppnetwork.org
 Peer Address: 10.5.40.X:6000
 State: OPEN [SCTP]
 CPU: 10/1                               Task: sessmgr-4
 Messages Out/Queued: H0.L0/H0.L0
 Supported Vendor IDs: 10415                         >> Supported Vendor IDs: 10415
  Admin Status: Enable
  DPR Disconnect: N/A
  Peer Backoff Timer running:N/A
------------
  Peer Hostname: dra01.epc.mnc0xy.mcc404.3gppnetwork.org
  Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
  Peer Realm: epc.mnc0XY.mcc404.3gppnetwork.org
  Local Realm: MME.epc.mnc0XY.mcc404.3gppnetwork.org
```

```
  Peer Address: 10.5.40.X:6000
  State: OPEN [SCTP]
  CPU: 10/0                          Task: sessmgr-15
  Messages Out/Queued: H0.L0/H0.L0
Supported Vendor IDs: 10415                    >> Supported Vendor IDs: 10415
  Admin Status: Enable
 DPR Disconnect: N/A
 Peer Backoff Timer running:N/A
------------
```

Peer Hostname: dra01.epc.mnc0xy.mcc404.3gppnetwork.org

```
 Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
 Peer Realm: epc.mnc0XY.mcc404.3gppnetwork.org
 Local Realm: MME.epc.mnc0XY.mcc404.3gppnetwork.org
 Peer Address: 10.5.40.X:6000
 State: OPEN [SCTP]
 CPU: 10/1                          Task: sessmgr-27
 Messages Out/Queued: H0.L0/H0.L0
 Supported Vendor IDs: 10415                    >> Supported Vendor IDs: 10415
  Admin Status: Enable
  DPR Disconnect: N/A
  Peer Backoff Timer running:N/A
------------
```

Peer Hostname: dra01.epc.mnc0xy.mcc404.3gppnetwork.org

```
  Local Hostname: 0004-diamproxy.MMEC001.MMEGI32000.MME.EPC.MNC0XY.MCC404.3GPPNETWORK.ORG
  Peer Realm: epc.mnc0XY.mcc404.3gppnetwork.org
  Local Realm: MME.epc.mnc0XY.mcc404.3gppnetwork.org
  Peer Address: 10.5.40.X:6000
  State: OPEN [SCTP]
  CPU: 10/2                          Task: sessmgr-29
  Messages Out/Queued: H0.L0/H0.L0
 Supported Vendor IDs: 10415                    >> Supported Vendor IDs: 10415
 Admin Status: Enable
 DPR Disconnect: N/A
 Peer Backoff Timer running:N/A

<additional outputs supressed>
```

Los ID de proveedor soportados deben tener el valor '10415' cuando se establece la conexión de par de diámetro entre MME y HSS para intercambiar los mensajes de diámetro operativo.