排除4G ASR KPI因mme-hss-user-unknown断开原因增加而降级故障

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简介

本文档介绍如何对4G连接成功率(ASR)关键性能指标(KPI)降级发生时的问题进行故障排除，当**mme-hss-user-unknown断开原因**增加时。

先决条件

要求

Cisco 建议您了解以下主题：

- 5000/5500的硬件知识
- StarOS

使用的组件

本文档不限于特定的软件和硬件版本。

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。

缩写

ASR	配售成功率
KPI	关键绩效指标(KPI)

空气	身份验证信息请求
AIA	身份验证信息答案
CER	功能交换请求
CEA	功能交换答案
MME	移动管理实体
HSS	家庭用户服务器
DPC	数据处理卡
RFC	请求注释
AVP	属性值对

问题

服务提供商报告一个MME中4G ASR降级，并且断开原因“mme-hss-user-unknown”增加。

"mme-hss-user-unknown(375)"断开原因描述由于MME HSS用户未知而断开的会话总数。

捕获到的一个故障跟踪报告HSS拒绝身份验证作为AIA消息中的结果代码 DIAMETER_MISSING_AVP(5005)。

MME不断从HSS获取“DIAMETER_MISSING_AVP(5005)”，故障AIA消息的样式如下：

```
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
```

故障排除

本部分提供可用于排除ASR KPI因mme-hss-user-unknown断开原因增加而降级问题的信息。

跟踪收集的“监控子”，并将其与成功和失败场景进行比较。从MME到HSS服务器的AIR中缺少支持的功能AVP。

成功的AIR和AIA消息从监控子跟踪**中捕获**。以下是从MME发送到HSS的AIR消息：

```
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
```

从HSS发送到MME的AIA消息是：

```
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)
```

故障AIR和AIA消息从监控子跟踪**中捕获**。

从MME发送到HSS的AIR消息为：

```
<<<<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
```

从HSS发送到MME的AIA消息是：

```
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
```

根据监控子 **跟踪**,0004-diamproxy收到错误“DIAMETER_MISSING_AVP(5005)”，该代理仅与DPC卡2关联。

```
[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#
```

对于仅与DPC卡2关联 **的实例的sessmgr实例，似乎**增加了“mme-hss-user-unknown”断开原因。

```
******** 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
```

进一步检查后，支持的供应商ID对于带DPC卡2的HSS对等体为“无”。

```
[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

解决方案

似乎“支持的供应商ID”AVP未与DPC卡2协商，因此仅观察该卡的故障。

根据RFC 3588,

Supported-Vendor-Id AVP — 这用于CER和CEA消息中，以通知对等体发送方支持（其子集）由此AVP中确定的供应商定义的供应商特定AVP。

Vendor-Id AVP — 与Supported-Vendor-Id AVP结合使用，以便了解哪些供应商特定属性可能发送到对等体。

为了在直径对等体和客户端之间交换功能，向服务提供商建议此行动计划。

行动计划是迁移DPC卡2和备用DPC卡10。

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

服务提供商使用备用DPC卡10执行DPC卡2迁移。

在活动后，支持的供应商ID(10415)对于卡10（具有相应的hss-peer）似乎正常，ASR KPI似乎也正常。

```
[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>
```

当在MME和HSS之间建立直径对等连接以交换操作直径消息时，支持的供应商ID应为“10415”值。

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