

Troubleshoot 4G ASR KPI Degradation due to an Increase in mme-hss-user-unknown Disconnect Reason

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Introduction

This document describes how to troubleshoot the problem that occurs when 4G Attach Success Rate (ASR) Key Performance Indicator (KPI) degradation takes place when **mme-hss-user-unknown** disconnect reason is increased.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Hardware knowledge of 5000/5500
- StarOS

Components Used

This document is not restricted to specific software and hardware versions.

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. If your network is live, ensure that you understand the potential impact of any command.

Abbreviations

| | |
|-----|------------------------------------|
| ASR | Attach Success Rate |
| KPI | Key Performance Indicator |
| AIR | Authentication Information Request |
| AIA | Authentication Information Answer |
| CER | Capability Exchange Request |
| CEA | Capability Exchange Answer |
| MME | Mobility Management Entity |
| HSS | Home Subscriber Server |
| DPC | Data Processing Card |
| RFC | Request for Comments |
| AVP | Attribute-value pair |

Problem

The Service provider reported the 4G ASR degradation in one MME and the disconnect reason 'mme-hss-user-unknown' was increased.

"mme-hss-user-unknown(375)" disconnect reason describes the total number of sessions disconnected because the MME HSS user is unknown.

One failure trace that was captured reported that HSS was rejecting the Authentication as result-code DIAMETER_MISSING_AVP (5005) in AIA message.

MME constantly got "DIAMETER_MISSING_AVP (5005)" from HSS and this is how the failure AIA message looks like:

```

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:     0xad40545     (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

This section provides information you can use in order to troubleshoot the problem of ASR KPI degradation due to an increase in mme-hss-user-unknown disconnect reason.

The collected "mon sub" is traced and compared with the success and failure scenario. The supported-features AVP is missing in the AIR from MME to HSS server.

Successful AIR and AIA message are captured from the **mon sub trace**. This is the AIR message that is sent from MME to HSS:

```

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:    0xad40545 (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

```

The AIA message that is sent from HSS to MME is:

```

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:   0xad40545 (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
```

The failure AIR and AIA messages are captured from the **mon sub trace**.

The AIR message that is sent from MME to HSS is:

```
<<<<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:    0xad40545 (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
```

The AIA message that is sent from HSS to MME is:

```
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:        0xad40545      (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

```

As per the **mon sub trace**, the error "DIAMETER_MISSING_AVP (5005)" is received for 0004-diamproxy, which is associated with DPC card 2 only.

```

[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#

It seems to be '**mme-hss-user-unknown**' disconnect reason is increased for those sessmgr instance which instance associated with DPC card 2 only.

```

[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#

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

When checked further, the supported vendor IDs had been 'none' for the HSS peer with DPC card 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
```

```
<additional outputs suppressed>
```

Solution

It seems that the "Supported Vendor IDs" AVP is not negotiated with DPC Card 2 and so the failure is observed for that card only.

As per the RFC 3588,

Supported-Vendor-Id AVP - This is used in the CER and CEA messages in order to inform the peer that the sender supports (a subset of) the vendor-specific AVPs defined by the vendor identified in this AVP.

Vendor-Id AVP - In combination with the Supported-Vendor-Id AVP, this might be used in order to know which vendor-specific attributes might be sent to the peer.

In order to exchange the capabilities between diameter peer and client, this action plan is suggested to the service provider.

The action plan is to migrate DPC Card 2 with standby DPC Card 10.

```
[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-diamproxymMEC001.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-diamproxymMEC001.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-diamproxymMEC001.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

<additional outputs suppressed>

The service provider performed DPC Card 2 migration with standby DPC card 10.

Post activity, the supported vendor IDs(10415) appeared to be ok for card 10 with the respective hss-peer and the ASR KPI seemed to be ok too.

[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-diamproxymMEC001.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 suppressed>

The supported vendor IDs should be of '10415' value when the diameter peer connection is established between MME and HSS in order to exchange the operational diameter messages.