Troubleshoot PDN Connectivity Request Rejection for Error Message "ACTIVATION REJECTED UNSPECIFIED(0x1f)"

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Introduction

This document describes how to troubleshoot the Attach Reject issue in Mobility Management Entity (MME) when the rejection cause is "ACTIVATION REJECTED UNSPECIFIED" for 4G subscribers.

Prerequisites

Requirements

Cisco recommends that you have knowledge of 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.

Problem

Originally, the service provider reported an issue where the apn-remap-table configuration that is used in the MME node does not work as expected. The end subscribers for whom this issue was reported used the APN (Access Point Name), which is not subscribed from Home Subscriber Server (HSS), is not resolved by the Domain Name System (DNS), and is not defined somewhere else in the node.

MME rejected the Attach-Request as shown in this example:

```
Monday March 12 2018
<><<OUTBOUND 03:40:25:602 Eventid:153002(3)
NAS Tx PDU, from 192.168.1.1:25 to 192.168.1.130:32878 (16)
Non Access Stratum (NAS) (16 bytes)
      NAS_MSG_SECURITY_HDR_INTEGRITY_PROTECTED_CIPHERED(0x2)
        MAC = 0xd6972b27
        NAS Count = 0x1
  EPS Mobility Management
    Protocol Discriminator
      EPS MOBILITY MANAGEMENT MESSAGES (0x7)
    Security Header Type
      NAS_MSG_SECURITY_HDR_PLAIN_NAS_MSG(0x0)
    Message Type
      ATTACH REJECT(0x44)
    Attach Reject Cause
       ESM FAILURE(0x13)
    ESM CONTAINER
      EPS Session Management
        Protocol Discriminator
           EPS SESSION MANAGEMENT MESSAGES(0x2)
        EPS Bearer Id
         (0x0)
        Transaction Id
          (0x2)
        Message Type
           PDN_CONNECTIVITY_REJECT(0xd1)
        Reject Cause
           ACTIVATION REJECTED UNSPECIFIED(0x1f)
```

Troubleshoot

Initially it was suspected there was something wrong with the configuration part in MME for **apn-remap-table**. However, it was checked end-to-end and no issue was found.

As a second option, the subscription profile that HSS sent for the impacted subscriber was checked. All parameters were found to be correct and the required wildcard APN entry was also present.

Further, as a next step, the monitor-subscriber and logging monitor traces were checked for a sample user who faced this issue.

From the logs it was found that MME rejected the attach request with this message:

```
2017-Dec-19+15:39:33.947 [mme-app 147095 unusual] [11/0/8964 <sessmgr:5> mme_app_util.c:8296x] [callid01442ba6] [context: s1-mme, contextID: x] [software internal user syslog] imsi 123456789012345, subscription validation failed for reason APN due to invalid context identifier
```

Further, the subscription profile that MME had received from the HSS for this user was checked. It was found that the wildcard APN had the context-identifier value as zero (0).

Solution

See the information in this section on 3GPP TS 29.272 v12, Sections 7.3.27 and 7.3.35.

7.3.27 Context-Identifier

The Context-Identifier AVP is of type Unsigned32.

7.3.35 APN-Configuration

The APN-Configuration AVP is of type Grouped. It shall contain the information related to the user's subscribed APN configurations. The Context-Identifier in the APN-Configuration AVP shall identify that APN configuration, and **it shall not have a value of zero**. Furthermore, the Context-Identifier in the APN-Configuration AVP shall uniquely identify the EPS APN configuration per subscription. For a particular EPS user having multiple APN configurations, the Service-Selection AVP values shall be unique across APN-Configuration AVPs.

So, ideally, the MME does not expect this value to be a zero. As the APN-Configuration under subsbcription-data for each APN is received from HSS, it was requested for the HSS team to change the value to a number other than zero.

This resolved the issue. No changes were made to the apn-remap-table in this entire troubleshooting procedure.