Troubleshoot the 'Not Able to Clear the Subscribers from MME' Issue

Contents

Introduction

This document describes an issue to clear the subscribers on the Cisco Mobility Management Engineer (MME).

Problem

At first, subscribers were cleared with this CLI:

```
clear subscribers apn xyz.com mme-only tai mcc xxx mnc yy tac zzz
```
Even after a clear CLI was executed, a user profile was available. Then, it was tried to remove users with a single Imsi.

After the session was cleared, it showed no user connected, but further checks from the user profile showed that you can see the user was able to browse and was still in an Active state.

```
[local]abc# clear subscribers imsi 123 -noconfirm Friday May 06 16:28:21 IST 2022 Number of
subscribers cleared: 1 [local]abc# show subscribers imsi 123 Friday May 06 16:30:41 IST 2022
|||||| |||||| vvvvvv CALLID MSID USERNAME IP TIME-IDLE ------ -------- --------------- ---------
------------- ---------------------------- --------- xTC.AR abc 123 n/a 1::0::1,x.x.x.x
75h05m21s xTC.AT abc 123 n/a 1::0::1 75h05m21s >> Still showing user connected from long.
```
The data was cleared from the local db, but users were not cleared.

```
[local]abc# clear subscribers imsi 123 local-purge -noconfirm Friday May 06 16:32:45 IST 2022
Number of subscribers cleared: 1 [local]abc# show subscribers imsi 123 Friday May 06 16:32:57
IST 2022 vvvvvv CALLID MSID USERNAME IP TIME-IDLE ------ -------- --------------- --------------
-------- ---------------------------- --------- xTC.AR abc 123 n/a 1:00:1::1,x.x.x.x 75h07m31s
xTC.AT abc 123 n/a 1:00:1::1 75h07m31s >> Users still showing connected from very long. Total
subscribers matching specified criteria: 1
```

Troubleshoot

1) All sessmgrs are in a good state.

2) With the restart of one sessmgr instance, you are able to clear the subscribers present on that

instance previously.

From the syslog, it was found at the very first time that users were cleared apn wise. If the subscriber is associated with Multi-PDNs, and you try to clear single pdn alone, then credit is not cleared properly.

Workaround

If you delete User Equipment (UE) context from MME, you can release the credits from the pacing queue. Different methods to achieve the same are:

1) UE power cycle.

2) From Home Subscriber Server(HSS), you can send 'cancel location' for the specific Access Point Name(APN).

3) You can perform S1 links bounce from EnodeB and MME but S1AP link bounce cannot clear the subscribers. Before that, you need to shut down the port, and configure minimal value in mobile reachable timer and implicit detach timer. This clears the subscribers in less time.

4) Kill the sessmgr instances.

5) Reload the Node.

Recommendation

You must not clear users APN wise, instead, you can clear them TAC wise and also set Max-Sub count to ensure the pacing queue is not full and the system is not overwhelmed.

For example:

```
clear sub mme-only tai mcc 100 mnc 100 tac 100 max-subscribers 1000
```