NEMO PMIPv6 Heartbeat on LMA

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Feature Information

Summary Data

Status	New Functionality
Introduced-In Release	pre 21.2
Modified-In Release(s)	21.2
Applicable Product(s)	SAEGW
Applicable Platform(s)	ASR 5500
Default Setting	Disabled
Related CDETS ID(s)	CSCuv38787, CSCvd04014
Related Changes in This Release	NEMO-LMA Heartbeat (P-GW)
Related Documentation	Command Line Interface Reference P-GW Administration Guide SAEGW Administration Guide

Revision History

Important Revision history details are not provided for features introduced before release 21.2.

Revision Details	Release	Release Date
New in this release.	21.2	April 27, 2017

Feature Description

Proxy Mobile IPv6 (PMIPv6) is a network-based mobility management protocol to provide mobility without requiring the participation of the mobile node in any PMIPv6 mobility-related signaling. The core functional entities, Mobile Access Gateway (MAG), and the Local Mobility Anchor (LMA), set up tunnels dynamically to manage mobility for a mobile node.

In an earlier release, support was added for the standardized PMIPv6 protocol between the NEMO and an SAEGW running on the ASR 5500. This support included processing of IPv4 prefixes at NEMO-LMA with IPv4 transport. With this release, the support is extended, including Session Recovery and ICSR support, for the following functionalities:

- Processing (add/modify/delete) of IPv6 and IPv4v6 prefixes at NEMO-LMA with IPv4 transport.
- Processing (add/modify/delete) of IPv4, IPv6, and IPv4v6 prefixes at NEMO-LMA with IPv6 transport.
- Generation of UDR for base call containing NEMO IPv4, IPv6, or both IPv4 and IPv6 prefixes information for NEMO IPv4 transport only.
- Heart beat support for NEMO-LMA with IPv6 transport.

UDR Support

UDR with NEMO prefixes information is generated for the base call in the following cases for NEMO IPv4 transport:

- During initial NEMO call registration where UDR contains all the NEMO prefixes (IPv4, IPv6, or both IPv4 and IPv6), and number of prefixes.
- During renew/update of NEMO prefixes where UDR contains only the new NEMO prefixes (IPv4, IPv6, or both IPv4 and IPv6 present in renew request), and number of prefixes.
- During call cleanup:
  - If base call is cleared ahead of NEMO call, UDR with existing nemo prefixes is generated.
  - If NEMO call is cleared ahead of base call, UDR without prefixes is generated (as NEMO information is already deleted).

License Requirements

Use of NEMO requires that a valid license key be installed. Contact your Cisco account or Support representative for information on how to obtain a license.

Monitoring and Troubleshooting the NEMO PMIPv6 Heartbeat on LMA

The following sections describe commands available to monitor the feature.

Show Command(s) and/or Outputs

The outputs of the following commands are modified to display the IPv6 prefixes in support of the NEMO PMIPv6 Heartbeat on LMA feature.

show lma-service session full

The following is a sample display:

```
Session Type: Proxy MIPv6
IPv6 Traffic: Enabled
Total Prefix: 8                 Multi-VRF: NO
VRF #1: vrf1                    CtxtID: 0x42      GRE: 0x0
1111:0:0:3::/64                  1111:0:0:4::/64
1111:0:0:5::/64                  1111:0:0:6::/64
1111:0:0:7::/64                  1111:0:0:8::/64
1111:0:0:9::/64                  1111:0:0:a::/64
```

show subscribers debug-info username *<username>*

The following is a sample display:

```
NEMO Detail:
  Peer bond:      YES           Peer Callid: 0098e4a1
  Mode:           Network       Multi-VRF Enabled: NO
  Total Prefixes: 8
  VRF# VRF-Ctxt-ID OutboundGRE   Accepted   VRF     Detail
   1    0x42          0x0          YES      vrf1
                                                    1111:0:0:3::/64 60778
                                                    1111:0:0:4::/64 60779
                                                    1111:0:0:5::/64 60780
                                                    1111:0:0:6::/64 60781
                                                    1111:0:0:7::/64 60782
                                                    1111:0:0:8::/64 60783
                                                    1111:0:0:9::/64 60784
                                                    1111:0:0:a::/64 60785
sessmgr NPU Flow Details:
```

Show Command(s) and/or Outputs