

GTPV1/V2 Echo Support for Peer MME and SGSN

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Feature Summary and Revision History

Summary Data

Applicable Product(s) or Functional Area	MME
Applicable Platform(s)	• ASR 5500 • VPC-DI • VPC-SI
Feature Default	Disabled - Configuration Required
Related Changes in This Release	Not applicable
Related Documentation	• *Command Line Interface Reference* • *MME Administration Guide* • *Statistics and Counters Reference*

Revision History

Revision Details	Release
This feature is fully qualified in this release.	21.18

Revision Details	Release
First introduced. **Important** This feature is not fully qualified in this release, and is available only for testing purposes. For more information, contact your Cisco Account representative.	21.17

Feature Description

MME supports path management status of MME (S10) and SGSN (Gn/Gp). MME sends and receives GTP V2 Echo Message for Peer Node status in S10 Interface and GTP V1 Echo Message for Peer node status in Gn/Gp Interface. MME sends and receives the Echo message for Configured peer Node in MME regardless of GTP session. When **peer-sgsn echo-params** CLI is enabled under mme-service, MME will initiate Echo to peer Gn/Gp SGSNs configured under mme-service and also to peer SGSNs added/created during 3G-4G/4G-3G Gn/Gp Handover.

Path failure is detected when there is no response to Echo Request even after max retransmissions. Path failure detection is not done based on "Restart counter value change in echo response".

GTP V1 Echo Message is supported in compliance with the 3GPP 29.060 7.2 Path Management Messages operation and GTP V2 Echo Message is supported in compliance with the 3GPP 29.274, 7.1 Path Management Messages operation.

Existing traps SGSNGtpcPathFailure, SGSNGtpcPathFailureClear, EGTPCPathFail, and EGTPCPathFailClear are used by this feature.

Configuring GTPV1/V2 Echo Support for Peer MME and SGSN

This section provides information on the CLI commands to configure GTPV1/V2 Echo Support for Peer MME and SGSN feature.

Configuring Path Management for Peer MME

Use the following configuration to configure the path management for Peer MME.

```
configure
  context context_name
    mme-service mme_service_name
      peer-mme echo-params interval interval retransmission-timeout
retransmission_timeout max-retransmissions max_retransmissions reconnect-interval
 reconnect_interval
           [ no ] peer-mme echo-params
           end
```

NOTES:

- **no**: Removes the path management configuration for peer MME with Gn/Gp capability.
- **peer-mme**: Configures a Peer MME for inter-MME relocations.

- **echo-params** : Configures echo parameters for peer MME with GN/GP capability.
- **interval** *interval*: Configures echo interval in seconds. *interval* must be an integer from 60 to 300.
- **retransmission-timeout** *retransmission_timeout*: Configures echo retransmission timeout in seconds. *retransmission_timeout* must be an integer from 1 to 20.
- **max-retransmissions** *max_retransmissions*: Configures maximum retries for echo request. *max-retransmissions* must be an integer from 0 to 15.
- **reconnect-interval** *reconnect_interval*: Configures echo interval to be used once a peer node is detected to be unreachable. Retransmission is not applicable in this time. *reconnect_interval* must be an integer from 60 to 86400.

Configuring Path Management for Peer SGSN

Use the following configuration to configure the path management for Peer SGSN.

```
configure
   context context_name
      mme-service mme_service_name
         peer-sgsn echo-params interval interval retransmission_timeout
retransmission_timeout max-retransmissions max-retransmissions reconnect-interval
 reconnect_interval
            no peer-sgsn echo-params
            end
```

NOTES:

- **no**: Removes the path management configuration for peer SGSN with Gn/Gp capability.
- **echo-params** : Configures echo parameters for peer SGSN with GN/GP capability.
- **interval** *interval*: Configures echo interval in seconds. *interval* must be an integer from 60 to 300.
- **retransmission-timeout** *retransmission_timeout*: Configures echo retransmission timeout in seconds. *retransmission_timeout* must be an integer from 1 to 20.
- **max-retransmissions** *max-retransmissions*: Configures maximum retries for echo request. *max-retransmissions* must be an integer from 0 to 15.
- **reconnect-interval** *reconnect_interval*: Configures echo interval to be used once a peer node is detected to be unreachable. Retransmission is not applicable in this time. *reconnect_interval* must be an integer from 60 to 86400.

Monitoring and Troubleshooting

This section provides information regarding show commands available to monitor this feature.

Show Commands and Outputs

show mme-service all name

The output of this command includes the following fields:

- PEER MME Echo Parameters :
  - interval
  - retransmission timeout
  - max retransmissions
  - reconnect interval
- PEER GN/GP SGSN Echo Parameters:
  - interval
  - retransmission timeout
  - max retransmissions
  - reconnect interval

show egtpc statistics

The output of this command includes the following fields:

Path Management Messages:

PEER MME Echo Request

- Total TX
- Initial TX
- Retrans TX

PEER MME Echo Response:

- Total RX

show egtpc peers mme

```
+----Status:   (D) - Dead    (A) - Alive
 |
 |+---IP Type:     (S) - Static  (D) - Dynamic
 ||  Service               Echo Req           Echo Req   Echo Rsp
 vv  ID      Peer Address  Time of Creation   Sent       Retransmitted  Received
 -- --- ---------------    ------------------ --------  ---------------
```

Total Peers:

Show sgtpc statistic

Path Management Messages:

Echo Request:

```
  Total   Echo-Req TX:     Total   Echo-Req RX:
  Initial Echo-Req TX:     Initial Echo-Req RX:
  Retrans Echo-Req TX:
```

Echo Response:

```
Total Echo-Rsp TX:    Total Echo-Rsp RX:
```

show sgtpc peers

```
Path     Service               Echo Req       Echo Req        Echo Rsp
Status   ID      Peer Address           Sent         Retransmitted     Received
----     --- ----------------------  -----------   ---------------   ---------
```