



# Enabling EMM and ESM Cause Code Mapping

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## Feature Summary and Revision History

### Summary Data

Applicable Product(s) or Functional Area	MME
Applicable Platform(s)	<ul style="list-style-type: none"> <li>• ASR 5500</li> <li>• VPC-DI</li> <li>• VPC-SI</li> </ul>
Feature Default	Enabled - Always On
Related Changes in This Release	Not applicable
Related Documentation	<ul style="list-style-type: none"> <li>• <i>MME Administration Guide</i></li> <li>• <i>Statistics and Counters Reference</i></li> </ul>

### Revision History

Revision Details	Release
First Introduced	21.22

## Feature Description

The User Equipment (UE) suffers failure, during attach process with an `EMM Attach Reject` message sent from MME to UE. When UE attach request is sent from MME to P-GW, the DNS server responds back with "Server failure", causing the MME to reject the UE attach request with the following error messages:

1. EMM Cause Code 17 `Network Failure`
2. ESM PDN Connectivity Reject Container message with ESM Cause Code 31 `Request Rejected Unspecified`.

To overcome the impact in MME 4G attach SR calculations, the Cause Codes introduced in the EMM Attach Reject/ESM PDN Connectivity Reject message to be EMM Cause Code 19 `ESM Failure` and ESM Cause Code 27 `Missing or Unknown APN`, instead of the current cause codes EMM 17 and ESM 31.

To overcome the UE attach request failure, the following new configuration commands are introduced:

1. `ESM-failure` with EMM Cause Code
2. `ESM-cause-code` with ESM Cause Code option `missing-or-unknown-apn`

## Enabling EMM/ESM Cause Code Mapping (Cause Code 27) under MME-Service

Use the following configuration commands to enable cause code mapping under `mme-service`:

```
configure
  context context_name
    mme-service service_name { local-cause-code-mapping{
pgw-selection-failure( emm-cause-code ){ esm-failure ( esm-cause-code ) (
  unknown-apn ) }}}
```

## Enabling EMM/ESM Cause Code Mapping (Cause Code 27) under Call Control Profile

Use the following configuration commands to enable cause code mapping under call control profile:

```
configure
  call-control-profile profile_name { local-cause-code-mapping{
pgw-selection-failure( emm-cause-code ){ esm-failure ( esm-cause-code )
( unknown-apn ) }}}
```

## Show Commands and Outputs

### **show mme-service all**

The output of this command displays the following newly introduced field:

ESM Failure (EMM-19)	Displays the EMM Cause Code of EMM Attach Reject/ESM PDN Connectivity Reject message.
Missing-or-Unknown-APN (ESM-27)	Displays the ESM Cause Code of EMM Attach Reject/ESM PDN Connectivity Reject message.

### **show call-control-profile full all**

The output of this command displays the following newly introduced field:

ESM Failure (EMM-19)	Displays the EMM Cause Code of EMM Attach Reject/ESM PDN Connectivity Reject message.
Missing-or-Unknown-APN (ESM-27)	Displays the ESM Cause Code of EMM Attach Reject/ESM PDN Connectivity Reject message.

