



IKEv2 Error Codes and Notifications

This appendix lists the IKEv2 error codes and notifications supported by the ePDG (evolved Packet Data Gateway).

- [IKEv2 Error Codes, on page 1](#)

IKEv2 Error Codes

The following table lists the IKEv2 error codes generated by the ePDG.

Table 1: IKEv2 Error Codes Generated by the ePDG

| Value | Error Code | ePDG Support |
|-------|------------------------------|--|
| 1 | UNSUPPORTED_CRITICAL_PAYLOAD | The ePDG sends this code if the Critical Bit exists in the received message and the Payload Type is unrecognized. |
| 4 | INVALID_IKE_SPI | The ePDG does not send this code. The ePDG ignores messages with an unrecognized SPI in order to minimize the impact of DoS attacks. |
| 5 | INVALID_MAJOR_VERSION | The ePDG sends this code in response to messages with an invalid Major Version. The ePDG supports a CLI command to suppress sending this error notification in response to IKE_SA_INIT Request messages. This is done in order to avoid DoS attacks. |

| Value | Error Code | ePDG Support |
|-------|-----------------------|---|
| 7 | INVALID_SYNTAX | The ePDG sends this code upon receiving messages with an inappropriate format, or when necessary payloads are missing. The ePDG does not send this code during IKE_SA_INIT exchanges for an unknown IKE SA. The ePDG sends this code for non-IKEv2 INIT exchanges only (such as IKE_AUTH, CREATE_CHILD_SA, or INFORMATIONAL exchanges). The ePDG also supports a CLI command to suppress sending this error notification. This is done in order to avoid DoS attacks. |
| 9 | INVALID_MESSAGE_ID | The ePDG sends this code in INFORMATIONAL Request messages only. The ePDG also supports a CLI command to suppress sending this error notification in response to IKE_SA_INIT Request messages. This is done in order to avoid DoS attacks. |
| 11 | INVALID_SPI | The ePDG does not send this code. The ePDG ignores ESP packets with an unrecognized SPI in order to minimize the impact by DoS attacks. |
| 14 | NO_PROPOSAL_CHOSEN | The ePDG sends this code when it cannot not choose a proposal from the UE. The ePDG supports a CLI command to suppress sending this code. |
| 17 | INVALID_KE_PAYLOAD | The ePDG sends this code when the IKE payload from the UE is invalid. |
| 24 | AUTHENTICATION_FAILED | The ePDG sends this code during the EAP authentication when EAP authentication fails. |

| Value | Error Code | ePDG Support |
|-------|--------------------------|---|
| 35 | NO_ADDITIONAL_SAS | The ePDG sends this code when a CREATE_CHILD_SA Request message is unacceptable because the ePDG is unwilling to accept any more CHILD SAs on the IKE_SA. |
| 36 | INTERNAL_ADDRESS_FAILURE | The ePDG sends this code when the ePDG experiences a failure in address assignment. |
| 37 | FAILED_CP_REQUIRED | The ePDG sends this code when the CP payload (CFG_REQUEST) was expected but not received. |
| 38 | TS_UNACCEPTABLE | The ePDG sends this code when the TSi and/or TSr parameters contain IP protocol values other than 0. |
| 39 | INVALID_SELECTORS | The ePDG does not send this code because the selector range is not checked and ingress filtering is applied instead. |
| 40 | TEMPORARY_FAILURE | when it is under collision scenarios as specified in RFC 5996. |
| 41 | CHILD_SA_NOT_FOUND | when it is under collision scenarios as specified in RFC 5996. |

The following table lists the IKEv2 error codes expected by the ePDG from the WLAN UEs.

Table 2: IKEv2 Error Codes Expected by the ePDG

| Value | Error Code | ePDG Behavior Upon Receipt |
|-------|------------------------------|---|
| 1 | UNSUPPORTED_CRITICAL_PAYLOAD | The ePDG sends an INFORMATIONAL (Delete) message and deletes the session information. |
| 4 | INVALID_IKE_SPI | The ePDG ignores the error message and maintain the state of existing SAs. |
| 7 | INVALID_SYNTAX | The ePDG sends an INFORMATIONAL (Delete) message and deletes the session information. |

| Value | Error Code | ePDG Behavior Upon Receipt |
|-------|--------------------|--|
| 9 | INVALID_MESSAGE_ID | The ePDG deletes the session information without sending an INFORMATIONAL (Delete) message. |
| 11 | INVALID_SPI | When notified in an IKE_SA message, the ePDG sends an INFORMATIONAL (Delete) message and deletes the session information. When notified outside an IKE_SA message, the ePDG ignores the error message and maintain the state for any existing SAs. |
| 39 | INVALID_SELECTORS | The ePDG sends an INFORMATIONAL (Delete) message for the IKE SA and deletes the session information. |
| 40 | TEMPORARY_FAILURE | On receipt of temporary_failure - If ePDG receives this for a rekey initiated by ePDG, ePDG shall retry rekey after some time. |
| 41 | CHILD_SA_NOT_FOUND | On receipt of CHILD_SA_NOT_FOUND - Epdg deletes the CHILDSA existing in ePDG, based on SPI. |

The following table lists the notify status types defined in RFCs 4306 and 4739 that are supported by the ePDG.

Table 3: Notify Status Types Supported by the ePDG

| Value | Notify Status Type |
|-------|------------------------------|
| 16388 | NAT_DETECTION_SOURCE_IP |
| 16389 | NAT_DETECTION_DESTINATION_IP |
| 16390 | COOKIE |
| 16393 | REKEY_SA |