

# 瞭解5GSM原因

## REQUEST\_REJECTED\_UNSPECIFIED

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### 簡介

本檔案介紹5GSM原因REQUEST\_REJECTED\_UNSPECIFIED(31)的一般說明，在這種情況下，Cisco 5G SMF（會話管理功能）使用原因代碼以及如何進行故障排除。

### 什麼是5GSM原因資訊元素

5GSM（5GS會話管理）子層的主要功能是支援UE和SMF（通過AMF傳輸）中的PDU會話處理。5GSM的樣例程式為：

- PDU作業階段建立
- PDU作業階段修改
- PDU作業階段版本
- PDU會話建立拒絕
- PDU會話修改拒絕
- PDU作業階段釋放拒絕
- PDU作業階段發佈請求
- PDU Session Modification命令拒絕

5GSM原因資訊元素的主要目的是說明5GSM請求被拒絕的原因。這些值在3GPP 24.501規範中定義。

## Cause value (octet 2)

Bits

8 7 6 5 4 3 2 1

0 0 0 0 1 0 0 0	Operator determined barring
0 0 0 1 1 0 1 0	Insufficient resources
0 0 0 1 1 0 1 1	Missing or unknown DNN
0 0 0 1 1 1 0 0	Unknown PDU session type
0 0 0 1 1 1 0 1	User authentication or authorization failed
0 0 0 1 1 1 1 1	Request rejected, unspecified
0 0 1 0 0 0 0 0	Service option not supported
0 0 1 0 0 0 0 1	Requested service option not subscribed
0 0 1 0 0 0 1 0	Service option temporarily out of order
0 0 1 0 0 0 1 1	PTI already in use
0 0 1 0 0 1 0 0	Regular deactivation
0 0 1 0 0 1 1 0	Network failure
0 0 1 0 0 1 1 1	Reactivation requested
0 0 1 0 1 0 1 1	Invalid PDU session identity
0 0 1 0 1 1 0 0	Semantic errors in packet filter(s)
0 0 1 0 1 1 0 1	Syntactical error in packet filter(s)
0 0 1 0 1 1 1 0	Out of LADN service area
0 0 1 0 1 1 1 1	PTI mismatch
0 0 1 1 0 0 1 0	PDU session type IPv4 only allowed
0 0 1 1 0 0 1 1	PDU session type IPv6 only allowed
0 0 1 1 0 1 1 0	PDU session does not exist
0 1 0 0 0 0 1 1	Insufficient resources for specific slice and DNN
0 1 0 0 0 1 0 0	Not supported SSC mode
0 1 0 0 0 1 0 1	Insufficient resources for specific slice
0 1 0 0 0 1 1 0	Missing or unknown DNN in a slice
0 1 0 1 0 0 0 1	Invalid PTI value
0 1 0 1 0 0 1 0	Maximum data rate per UE for user-plane integrity protection is too low
0 1 0 1 0 0 1 1	Semantic error in the QoS operation
0 1 0 1 0 1 0 0	Syntactical error in the QoS operation
0 1 0 1 0 1 0 1	Invalid mapped EPS bearer identity
0 1 0 1 1 1 1 1	Semantically incorrect message
0 1 1 0 0 0 0 0	Invalid mandatory information
0 1 1 0 0 0 0 1	Message type non-existent or not implemented
0 1 1 0 0 0 1 0	Message type not compatible with the protocol state
0 1 1 0 0 0 1 1	Information element non-existent or not implemented
0 1 1 0 0 1 0 0	Conditional IE error
0 1 1 0 0 1 0 1	Message not compatible with the protocol state
0 1 1 0 1 1 1 1	Protocol error, unspecified

Any other value received by the UE shall be treated as 0010 0010, "service option temporarily out of order". Any other value received by the network shall be treated as 0110 1111, "protocol error, unspecified".

## 5GSM原因REQUEST\_REJECTED\_UNSPECIFIED(31)是什麼？

以下是REQUEST\_REJECTED\_UNSPECIFIED的示例資料包。

```
√ Encapsulated multipart part: (application/vnd.3gpp.5gnas)
  Content-Id: n1msg\r\n
  Content-Type: application/vnd.3gpp.5gnas\r\n\r\n
  √ Non-Access-Stratum 5GS (NAS) PDU
    √ Plain NAS 5GS Message
      Extended protocol discriminator: 5G session management messages (46)
      PDU session identity: No PDU session identity assigned (0)
      Procedure transaction identity: 0
      Message type: PDU session establishment reject (0xc3)
      √ 5GSM cause - ESM cause
        5GSM cause: Request rejected, unspecified (31)
```

根據規範，定義為：

Cause #31 - Request rejected, unspecified

This 5GSM cause is used by the network or by the UE to indicate that the requested service or operation or the request for a resource was rejected due to unspecified reasons.

因此，當發生某些意外或未處理的情況時，會使用此原因代碼，而定義的其他原因代碼不適用。

## SMF何時使用REQUEST\_REJECTED\_UNSPECIFIED?

如上所述，當出現某些意外或未處理的情況時，SMF使用REQUEST\_REJECTED\_UNSPECIFIED，而定義的其他原因代碼不適用。此示例來自事務日誌，它指示使用REQUEST\_REJECTED\_UNSPECIFIED拒絕建立PDU會話。此消息本身表示SMF發生錯誤，並且未提供任何拒絕請求的確切原因。

```
[ERROR] [smf-service.smf-app.event-trace] nasEncodePduSessionEstbReject(Cause-REQUEST_REJECTED_UNSPECIFIED) - EVENT TRACE - SessionKeys[[imsi-<OMIT> (pk)]]
```

進一步檢視事務日誌，請注意存在另一個錯誤：

```
[ERROR] [smf-service.smf-app.amf] AMF Assign Ebi Failure [BackgroundIpcTimedOut] Background ipc timedout
```

因此，向AMF分配Ebi請求超時，導致REQUEST\_REJECTED\_UNSPECIFIED。現在需要調查的是「分配Ebi」請求超時的原因。

此事務日誌是另一個示例，在這種情況下，SMF無法從CHF接收ChargingDataCreateRes，結果為REQUEST\_REJECTED\_UNSPECIFIED。

```
[ERROR] [rest_ep.app.n40] Received Charging Data Response error with timediff 1999995051 - response Post http://192.168.20.101:8086/nchf-convergedcharging/v2/chargingdata: net/http: request canceled
```

```
[ERROR] [smf-service.smf-app.event-trace] nasEncodePduSessionEstbReject(Cause-REQUEST_REJECTED_UNSPECIFIED) - EVENT TRACE - SessionKeys[[imsi-<OMIT> (pk)]]
```

所說明的2個示例可視為對REQUEST\_REJECTED\_UNSPECIFIED的合理使用。同時，也存在其他原因代碼更合適的情況，但SMF只是處理不當，而是使用REQUEST\_REJECTED\_UNSPECIFIED。此事務日誌也是REQUEST\_REJECTED\_UNSPECIFIED的另一個示例，但在此之前出現的錯誤不是結論性的。

```
[ERROR] [smf-service.smf-app.resource] Resource Manager Response Failure
[ERROR] [smf-service.smf-app.event-trace] nasEncodePduSessionEstbReject(Cause-
REQUEST_REJECTED_UNSPECIFIED) - EVENT TRACE - SessionKeys[[imsi-<OMIT> (pk)]]
檢視PDU會話建立請求時，PDU會話型別為IPv4，但SMF上未配置IPv4池。
```

```
FIVEG_PDU_SESSION_ESTABLISHMENT_REQUEST (0xC1)
'PDU_SESSION_TYPE': 'IPV4 (0x1)',
```

```
ipam
source local
address-pool pool1
vrf-name ISP
tags
dnn test
exit
ipv6
prefix-ranges
split-size
per-cache 8192
per-dp 8192
exit
prefix-range FE80:db0:: length 48
exit
exit
exit
exit
```

在此案例中，「PDU作業階段型別僅允許IPv6」(51)更適合，因此它通過思科錯誤ID [CSCvy更改為使用PDU SESSION TYPE IPV6 ONLY ALLOWED44631](#)。

## 結論

5GSM原因REQUEST\_REJECTED\_UNSPECIFIED本身不提供拒絕的最終資訊，需要進一步調查瞭解其原因。如果存在更正確的原因代碼，則最好修復軟體進行修復。