



# Origin-State-Id AVP Support on P-GW

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## Feature Summary and Revision History

### Summary Data

Applicable Product(s) or Functional Area	P-GW
Applicable Platform(s)	<ul style="list-style-type: none"><li>• ASR 5500</li><li>• VPC - DI</li><li>• VPC - SI</li></ul>
Feature Default	Disabled - Configuration Required
Related Changes in This Release	Not Applicable
Related Documentation	<ul style="list-style-type: none"><li>• <i>AAA Administration Guide</i></li><li>• <i>Command Line Interface Reference</i></li><li>• <i>Statistics and Counters Reference</i></li></ul>

### Revision History

Revision Details	Release
Introduced support for indirectly connected Policy and Charging Rules Functions (PCRFs) through Diameter Routing Agent (DRA).	21.17

Revision Details	Release
First introduced.	21.6

## Feature Description

The interfaces connected to the P-GW use Diameter protocol for communication. This protocol provides a mechanism through the Origin-State-Id AVP to detect sessions that are terminated due to unanticipated shutdown of a peer node.

Storing the Origin-State-Id AVP of a peer node enables the P-GW to detect and clear sessions whenever there is a change in the Origin-State-Id of the diameter peer node. This ensures that the diameter-nodes are always synchronized with the P-GW. To enable this functionality of storing the Origin-State-Id AVP on the P-GW, the **osid-change** CLI command is introduced at the diameter endpoint level.

Origin-State-Id change detection is applicable only for PCRF nodes.

## How It Works

When the **osid-change** CLI command is configured, the database starts storing the Origin-State-Id of each peer configured under a diameter endpoint. On receiving a diameter message from a peer, if the Origin-State-Id AVP is present, it is compared with the stored Origin-State-Id. If the received Origin-State-Id is greater than the stored one, gateway will start clearing calls. The Session Manager marks all the subscribers connected to the diameter-session for deletion and starts clearing sessions in a staggered manner. Clearing calls in a staggered manner helps avoid a storm of messages on other connected interfaces. When a subscriber is marked for deletion, the GW drops all the outbound diameter messages on the interface.

As per RFC 6733 (Diameter Base Protocol) Origin-State-Id could come in any diameter message, so the Gateway provides support to detect the change in CEA, CCA and RAR messages.

This feature is supported only with diamproxy mode (single and multiple).

## Configuring Origin State Identifier AVP Support on P-GW

The following section provides the configuration command to enable or disable the functionality.

### Configuring Origin-State-Id AVP on P-GW

Use the following CLI commands to store the Origin-State-Id AVP of a Diameter peer node on the P-GW. This command is introduced at the diameter endpoint level.

```

configure
  context context_name
    diameter endpoint endpoint_name
      [no] osid-change action clear-subscribers
    end

```

NOTES:

- **no:** Disables the command.
- **action:** Specifies the action to be taken.
- **clear subscribers:** Clears subscribers connected to the peer.
- This functionality is disabled by default.

## Monitoring and Troubleshooting

This section provides information regarding show commands and/or their outputs in support of this feature.

### Show Commands and/or Outputs

The output of the following CLI command has been enhanced in support of the feature.

#### **show diameter**

As part of this functionality, the **show diameter** CLI now includes the values for the following new fields:

- osid-info sessmgr all
- osid-info sessmgr instance\_number

#### **show session disconnect-reasons**

The **show session disconnect-reasons** CLI now includes the **osid-change** field.

### Bulk Statistics

The following bulk statistics are added in the System schema to support this feature:

Bulk Statistics	Description
disc-reason-656	Indicates the total number of sessions cleared due to change in Origin-State-Id of the Diameter peer.

