

Control Plane and User Plane Association

- Feature Summary and Revision History, on page 1
- Feature Description, on page 2
- Enabling Control Plane and User Plane Association, on page 2
- UP Session Disconnect Notification, on page 3
- UP Rollback Failure Handling Notification, on page 3

Feature Summary and Revision History

Summary Data

Table 1: Summary Data

Applicable Product(s) or Functional Area	cnBNG
Applicable Platform(s)	SMI
Feature Default Setting	Disabled - Configuration Required
Related Changes in this Release	Not Applicable
Related Documentation	Not Applicable

Revision History

Table 2: Revision History

Revision Details	Release
Support is added for IPv6 transport between the Control Plane and a peer User Plane.	2024.02.0
UP Rollback Failure Handling Notification support added.	2022.01.0
UP Session Disconnect Notification support added.	2021.03.0

Revision Details	Release
First introduced.	2021.01.0

Feature Description

The Control Plane (CP) associates with a peer User Plane to synchronize with the number of subscriber sessions and state of each session. The CP and UP must maintain the total number of active sessions and their state on both sides.

To associate a UP to the CP, see the Associating the User Plane, on page 2.

Enabling Control Plane and User Plane Association

This section describes how to enable CP to UP association.

Associating the CP and UP involves the following procedure.

Associating the User Plane

Associating the User Plane

Use the following commands to associate the Control Plane (CP) to the peer User Plane.

```
config
   user-plane user_plane_name
   offline
   peer-address { ipv4 ipv4_address | ipv6 ipv6_address }
   port-id port_identifier subscriber-profile subscriber_profile
   subscriber-profile subscriber_profile
   exit
```

NOTES:

- **user-plane** *user_plane_name*: Specifies the User Plane (UP) name and enter UP Configuration mode.
- **offline**: Marks the UP offline for a graceful disconnect.
- **peer-address ipv4** *ipv4_address*: Specifies the peer IPv4 address of the UP.
- **peer-address ipv6** *ipv6_address*: Specifies the peer IPv6 address of the UP.
- **port-id** *port_identifier* **subscriber-profile** *subscriber_profile*: Specifies the port identifier of the UP. **subscriber-profile** *subscriber_profile* associates the subscriber profile at the port identifier level.
- **subscriber-profile** *subscriber_profile*: Associates the subscriber profile at UP level.

UP Session Disconnect Notification

Feature Description

The User Plane (UP) Session Disconnect Notification feature enables the UP to send a session disconnect notification to the Control Plane (CP) in the following scenario:

When the UP deletes a session locally following any local event (for example, mark and sweep).

For a list of scenarios that trigger a session disconnect notification, see the *Broadband Network Gateway Configuration Guide for Cisco ASR 9000 Series Routers* here: https://www.cisco.com/c/en/us/support/routers/asr-9000-series-aggregation-services-routers/products-installation-and-configuration-guides-list.html.

This notification carries the final statistics for the session and for all services, if accounting is enabled.

The CP initiates the session disconnect for this session only in the CP. The CP then deletes this session. If the session accounting is enabled for this session, the CP sends an accounting "stop record" message to RADIUS.

The UP deletes the session after initiating the session disconnect request to the CP. Therefore, the CP doesn't send a session release Packet Forwarding Control Protocol (PFCP) message to the UP.

UP Rollback Failure Handling Notification

Feature Description

The User Plane (UP) Rollback Failure Handling Notification feature sends a failure notification to the Control Plane (CP) as follows:

- The CP sends the subscriber configuration in a session modification request to the UP. The UP rolls back the configuration if the application of the configuration fails. The UP deletes the session if the rollback configuration also fails and returns the rollback failure error in the session modification response to the CP.
- The UP sends the final statistics, if applicable, for the session and for each service activated for the failed session, in the session modification response.
- The CP deletes the session in the CP only after receiving a rollback failure in the session modification response from the UP.