



# Control Plane-Initiated N4 Association Support

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## Feature Summary and Revision History

### Summary Data

*Table 1: Summary Data*

Applicable Product(s) or Functional Area	5G-UPF
Applicable Platform(s)	VPC-SI
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
First Introduced.	2020.02.0

## Feature Description

### SMF initiated N4 Association Setup Procedure

The N4 association set up procedure sets up an N4 association between the Session Management Function (SMF) and User Plane Function (UPF). It enables the SMF to use the UPF resources to establish the N4 sessions. The SMF and UPF exchange the supported functionalities on each side during this procedure.

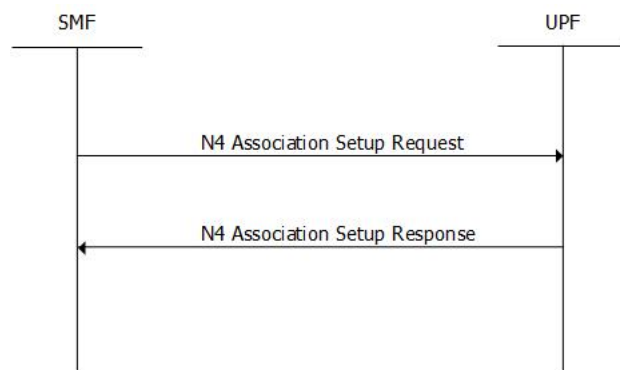
## How it Works

The N4 association setup is initiated by the SMF. The setting of N4 association setup procedure is controlled through **sx-association initiated-by-cp** CLI command in the Control Plane Group Configuration mode. By default, the configuration is set to support the UPF-initiated N4 association setup procedure.

## Call Flows

### Session Management Function Initiated N4 Association Setup Procedure

The following call flow depicts the SMF-initiated N4 Association Setup procedure.



Step	Description
1	The SMF initiates the N4 Association Setup procedure to request the setup of an N4 association towards a UPF prior to establishing a first N4 session on this UPF.
2	After receiving an N4 Association Setup Request, the UPF sends an N4 Association Setup Response.

## Configuring the CP-Initiated N4 Association Setup Feature

This section describes how to configure the CP-Initiated N4 Association Setup feature.

Configuring this feature involves using the "**sx-association initiated-by-cp**" CLI command in the Control Plane Group Configuration mode. The default configuration is UPF-initiated N4 association setup procedure.

Use the following configuration to configure the N4 association setup feature.

```
configure
context
  control-plane-group group_name
    peer-node-id ipv4-address ip_address interface n4
    sx-association { initiated-by-cp | initiated-by-up }
  end
```

#### NOTES:

- **initiated-by-cp**: This keyword is used to initiate the Sx association request through control plane.
- **initiated-by-up**: This keyword is used to initiate the Sx association request through user plane.
- By default, the UPF-initiated N4 association setup procedure is configured.
- To revert to the default setting, use the **no sx-association** command.

## CP-Initiated N4 Association Setup Feature OAM Support

This section describes operations, administration, and maintenance information for this feature.

### Show Command Support

Use the following show command to verify the CP-initiated N4 Association Setup feature configuration.

```
show control-plane-group all
```

The following is a sample output of the show command.

```
show control-plane-group all
Control Plane Group
-----
Name           : default
Sx-Association : initiated-by-up
Name           : default
Sx-Association : initiated-by-up
Node-Id        : 1.1.2.2
Interface      : N4
```

