Mobility Handover (Xn/N2) Collision Control

Feature Summary and Revision History

Summary Data

Table 1: Summary Data

Applicable Products or Functional Area	AMF
Applicable Platforms	SMI
Feature Default Setting	Disabled – Configuration required to enable
Related Documentation	Not Applicable

Revision History

Table 2: Revision History

Revision Details	Release
First introduced.	2022.04

Feature Description

AMF interacts with multiple nodes, such as UE/GNB, UDM, AUSF, and SMF. When multiple nodes send simultaneous request toward AMF, there is a possibility of collision at the AMF node. The AMF Collision Support feature supports handling the collision between different procedures at the AMF node.

How it Works

AMF supports collision handling for the following UE-initiated procedures:

- Initial Registration Request
- Deregistration

While the initial registration procedure is running, collision can occur for UE-initiated deregistration, or for an extra initial registration that is triggered. In such cases, the current procedure will be waiting for any of the following cases:

- Security mode complete message
- Initial context setup response
- AM policy establishment from PCF

In each of the above specified case, the AMF aborts the running procedure, clears up the corresponding messages, and proceeds with the new incoming procedure.

The UE-level procedure takes precedence over the PDU-level procedure, or aborts or suspends the PDU-level procedure depending on the call flow needs. All procedures have equal priority—Collision handling is provided for every combination.

Limitations

Currently, AMF supports collision control for single procedure collision with another single procedure. AMF does not support collision control for simultaneous multiple procedure collisions.

OAM Support

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

Bulk Statistics Support

The following statistics is supported for the Mobility Handover (Xn/N2) – Collision Control - Phase 1 feature.

- amf_collision_stats - Used for tracking and debugging purpose. Statistics includes the name of the running procedure and the new procedure, and the action taken by the collision resolver.

The following is an example when the AMF received the subsequent UE Registration while one UE Registration procedure was in progress. The collision resolver aborts the first procedure.

```
amf_collision_stats{action_type="abort_old",app_name="amf",cluster="clu001",
data_center="sys001",instance_id="0",new_proc="UERegistration",old_proc="UERegistration",
service_name="amf-service"} 1
```