UCC 5G AMF - Release Change Reference

Features and Behavior Change Quick Reference

Features / Behavior Changes	Release Introduced / Modified
Attach Rate Throttling	2022.04.0
Emergency Voice Fallback	2022.04.0
Inter-AMF Idle Handover Scenario for Emergency Calls—CSCwd08192, on page 5	2022.04.0
Lawful Intercept Interface Support, on page 6	2022.04.0
Mobility Handover (Xn/N2) Collision Control	2022.04.0
Mutual TLS (mTLS) Support and Validation	2022.04.0
OAuth2 Client Authorization Support to NRF, on page 8	2022.04.0
Overload Control for N2 and NAS	2022.04.0

Features / Behavior Changes	Release Introduced / Modified
Paging Overload Protection	2022.04.0
Relative Capacity Configuration Update, on page 10	2022.04.0
AMF sends UE context release command and then Registration reject for AUSF 403 failure—CSCwc44093	2022.04.0

Feature Defaults Quick Reference

The following table indicates what features are enabled or disabled by default.

Feature	Default
Attach Rate Throttling	Disabled – Configuration required to enable
Emergency Voice Fallback	Disabled – Configuration required to enable
Inter-AMF Idle Handover Scenario for Emergency Calls—CSCwd08192	Enabled – Always-on
Lawful Intercept Interface Support	Disabled – Configuration required to enable
Mobility Handover (Xn/N2) Collision Control	Disabled – Configuration required to enable
Mutual TLS (mTLS) Support and Validation	Disabled – Configuration required to enable
OAuth2 Client Authorization Support to NRF	Disabled – Configuration required to enable
Overload Control for N2 and NAS	Disabled – Configuration required to enable
Paging Overload Protection	Disabled – Configuration required to enable
Relative Capacity Configuration Update	Enabled – Always-on
AMF sends UE context release command and then Registration reject for AUSF 403 failure—CSCwc44093	Enabled – Always-on

Attach Rate Throttling

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	*UCC 5G Access and Mobility Management Function - Configuration and Administration Guide*

Revision History

Table 2: Revision History

Revision Details	Release
First introduced.	2022.04.0

Feature Description

Attach rate limit is the maximum number of new connections that AMF can process. The new connections include Initial Registration Request, Namf_Communication_CreateUEContext Request, and N26 Forward Relocation Request.

Setting the rate limit enables the operators to manage the traffic and reduce the signaling on the external nodes.

Note AMF does not throttle emergency, periodic, and mobility registration.

Emergency Voice Fallback

Feature Summary and Revision History

Summary Data

Table 3: Summary Data

Applicable Products or Functional Area	AMF
Applicable Platforms	SMI
Feature Default Setting	Disabled – Configuration required to enable
Related Documentation	*UCC 5G Access and Mobility Management Function - Configuration and Administration Guide*

Revision History

Table 4: Revision History

Revision Details	Release
First introduced.	2022.04.0

Feature Description

The Emergency Services Fallback feature allows the UE to reconnect to EUTRAN either through 5GC (4G radio, 5G core) or EPC (4G radio, 4G core). The fallback occurs when the 5G radio does not support the NR. Depending on the network capabilities, the UE selects 5GC or EPC. If the 5G core is unable to support emergency services, the UE falls back on 4G radio on the 4G core.

AMF supports UE Context Transfer messages for subscribers that are registered for emergency services or nonemergency services with emergency PDU sessions.

Inter-AMF Idle Handover Scenario for Emergency Calls—CSCwd08192

Feature Summary and Revision History

Summary Data

Table 5: Summary Data

Applicable Product(s) or Functional Area	AMF
Applicable Platform(s)	SMI
Feature Default Setting	Enabled – Always-on
Related Changes in this Release	Not Applicable
Related Documentation	Not Applicable

Revision History

Table 6: Revision History

Revision Details	Release
First introduced. CDETS ID: CSCwd08192	2022.04

Feature Description

AMF treats a subscriber session as an emergency call if any of the following conditions were met:

- only IMEI is present in N14 response message, and the UE is in the same PLMN unauthenticated SUPI is present in the N14 response message

Lawful Intercept Interface Support

Feature Summary and Revision History

Summary Data

Table 7: Summary Data

Applicable Product(s) or Functional Area	AMF
Applicable Platform(s)	SMI
Feature Default Setting	Disabled – Configuration required to enable
Related Documentation	Contact your Cisco account representative, for your documentation needs.

Revision History

Table 8: Revision History

Revision Details	Release
Enhancements introduced.	2022.04.0
First introduced.	2021.04.0

Feature Description

The lawful interception (LI) on AMF supports multiple enhancements, including parity features to cater to the user requirements.

For more information on LI interface, contact your Cisco account representative.

Mobility Handover (Xn/N2) Collision Control

Feature Summary and Revision History

Summary Data

Table 9: Summary Data

Applicable Products or Functional Area	AMF
Applicable Platforms	SMI

Feature Default Setting	Disabled – Configuration required to enable
Related Documentation	*UCC 5G Access and Mobility Management Function - Configuration and Administration Guide*

Revision History

Table 10: Revision History

Revision Details	Release
First introduced.	2022.04.0

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.

Mutual TLS (mTLS) Support and Validation

Feature Summary and Revision History

Summary Data

Table 11: Summary Data

Applicable Products or Functional Area	AMF
Applicable Platforms	SMI
Feature Default Setting	Disabled – Configuration required to enable
Related Documentation	*UCC 5G Access and Mobility Management Function - Configuration and Administration Guide*

Revision History

Table 12: Revision History

Revision Details	Release
First introduced.	2022.04.0

Feature Description

AMF supports mutual TLS secure channel for SBI interfaces. With the mTLS Support for SBI interfaces, AMF handles mutual TLS requests from the server and the client, and supports HTTP2 over TLS secure channel for all NF interfaces.

This feature also supports in generating alarms when the certificates expire within a configured threshold period.

OAuth2 Client Authorization Support to NRF

Feature Summary and Revision History

Summary Data

Table 13: Summary Data

Applicable Products or Functional Area	AMF
Applicable Platforms	SMI
Feature Default Setting	Disabled – Configuration required to enable
Related Documentation	*UCC 5G Access and Mobility Management Function - Configuration and Administration Guide*

Revision History

Table 14: Revision History

Revision Details	Release
First introduced.	2022.04.0

Feature Description

This feature describes the authorization controls that are required for implementing all the network functions. The OAuth2 client authorization to NRF supports the AMF application-side changes and its integration with nrf-lib and app-infra APIs.

For more information, see the UCC 5G AMF Configuration and Administration Guide > OAuth2 Client Authorization Support to NRF chapter.

Overload Control for N2 and NAS

Feature Summary and Revision History

Summary Data

Table 15: Summary Data

Applicable Products or Functional Area	AMF
Applicable Platforms	SMI
Feature Default Setting	Disabled – Configuration required to enable
Related Documentation	*UCC 5G Access and Mobility Management Function - Configuration and Administration Guide*

Revision History

Table 16: Revision History

Revision Details	Release
First introduced.	2022.04.0

Feature Description

The congestion control feature lets you define the system conditions which when matched impacts the system's performance. To prevent an impact of the congestion on the subscriber sessions, you can configure the system policies that are to be invoked when facing congestion.

Congestion control monitors the system to detect situations that match the conditions which may potentially degrade the system's performance when it is under heavy load. Typically, these conditions are transient (for example, high CPU or memory utilization) and gets resolved faster. However, if these conditions persist longer or they occur frequently during the specific time interval, a severe congestion occurs.

The congestion control feature monitors the system resources, such as CPU usage, memory, the number of active sessions, and the number of Go routines.

Paging Overload Protection

Feature Summary and Revision History

Summary Data

Table 17: Summary Data

Applicable Products or Functional Area	AMF
Applicable Platforms	SMI
Feature Default Setting	Disabled – Configuration required to enable
Related Documentation	*UCC 5G Access and Mobility Management Function - Configuration and Administration Guide*

Revision History

Table 18: Revision History

Revision Details	Release
First introduced.	2022.04.0

Feature Description

Congestion control is a proactive mechanism where AMF lets you configure the number of paging requests that are sent for each gNB. When a congestion is detected, AMF drops the new paging requests.

Relative Capacity Configuration Update

Feature Summary and Revision History

Summary Data

Table 19: Summary Data

Applicable Products or Functional Area	AMF
Applicable Platforms	SMI
Feature Default Setting	Enabled – Always-on

Related Documentation	*UCC 5G Access and Mobility Management Function - Configuration and Administration Guide*

Revision History

Table 20: Revision History

Revision Details	Release
First introduced.	2022.04.0

Feature Description

The AMF supports modification of relative AMF capacity and notifies to the connected gNodeBs. The AMF also provides an option to control the rate at which existing sessions can be cleared in the AMF.

For more information, see the > UCC 5G AMF Configuration and Administration Guide > Relative Capacity Configuration Update chapter.

AMF sends UE context release command and then Registration reject for AUSF 403 failure—CSCwc44093

Behavior Change Summary and Revision History

Summary Data

Table 21: Summary Data

Applicable Product(s) or Functional Area	AMF
Applicable Platform(s)	SMI
Feature Default Setting	Enabled – Always-on
Related Changes in this Release	Not Applicable
Related Documentation	Not Applicable

Revision History

Table 22: Revision History

Revision Details	Release
First introduced. CDETS ID: CSCwc44093	2022.04

Behavior Change

Previous Behavior: In some cases of rejection of initial registration (received in NGAP initial UE message) due to AUSF 403 failure, AMF was sending the UE context release command prior to the registration reject message.

New Behavior: AMF now sends the registration reject message and then the UE context release command.

Customer Impact: No impact.