



AMF Logging

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Feature Summary and Revision History

Summary Data

Table 1: Summary Data

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

Revision History

Table 2: Revision History

Revision Details	Release
First introduced.	2021.04.0

Feature Description

AMF utilizes the common logging framework to generate logs from its microservices.

The supported log levels are:

- Error

- Warn
- Info
- Debug
- Trace



Note Warn level logging takes place during production.

Error

These errors are fatal errors, which can impact service for multiple subscribers. Examples errors are as follows:

- Node discovery of SBA fails after query from NRF and local configuration
- Mandatory IE missing in an NGAP message
- Memory cache startup errors
- Endpoint not found

Warn

These errors impact few specific call-flows majorly, but not blockers of functionality. Example errors are as follows:

- Node discovery of SBA fails but we have more options to retry.
- Mandatory IE missing in a NAS message
- RPC timeout
- Procedural timeout
- Validation failure (not critical)

Example: Registration rejected as Registration request message received registration type as the Reserved registration type.

- External entity sending unexpected or negative response

Example: Handover Cancel, Hand over Failure, or Initial Context Setup Failure

- Unexpected value of objects maintained by AMF

Example: NIL value of transaction

- Unable to fetch a subscriber

Info

This log level purpose is to know information for cause. Examples are as follows:

- Procedural outcome Example: Disabling of ICSR for Registration
- Collision abort, cleanup, suspend, or continue.

Debug

This log level purpose is to get debug messages. Example messages are as follows:

- All external exchanged messages
Example: Sending Registration accept to UE.
- State machine changes
- Collision detailed logging

Trace

This log level purpose is to get content of all external tracing messages. Example messages are as follows:

- Registration request message
- N1N2 transfer message

How it Works

This section describes how this feature works.

Log Tags

Use log tags to tag the logs for specific procedures which are part of a flow or an event. Enabling of AMF logging takes place at different log levels for different log tags.

Name	Purpose	Example Log tags
AMF service	To capture procedures.	<ul style="list-style-type: none"> • LogTagReg • LogTagPDU, and so on
Protocol Endpoint	To capture on the interface.	<ul style="list-style-type: none"> • LogTagNas • LogTagNgap • LogTagNonUE

Name	Purpose	Example Log tags
Rest Endpoint	To capture on the interface.	<ul style="list-style-type: none">• LogTagN11• LogTagN14• LogTagNRF• LogTagN11OrN14 (N1NMsgTransfer can come from N14/N11 interfaces) and so on