



## AMF Metrics Reference

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## AMF AUSF Service Stats Category

### n12\_service\_stats

Description: AMF Ausf service stats

Sample Query: `n12_service_stats(message_type=\"NausfUeAuthReq\", status=\"success\", reason=\"AUTHENTICATION_SUCCESS\", slice_data=\"2-333333\")`

Labels:

- Label: `message_type`

Label Description: The message type associated with an ausf service

Example: `NausfUeAuthReq, NausfUeAuthRsp, NausfUe5gAkaCnfReq, NausfUe5gAkaCnfRsp`

- Label: `status`

Label Description: Overall status

Example: `success, failures, attempted`

- Label: `reason`

Label Description: The reason associated with an ausf service

Example: `Suspend, Suspend for Async, Unable to retrieve msg from rsp, Supi mismatch, Internal Error, Sync Failed, Mac Failure, Auth Challenge Failed, Auth Cfm Failed, Sync Failed Exceeded, Timeout, Others, No Security Context from Peer, Peer Provided Sec Context Failed, NgKsi Already In Use, Scheduled ipc action in background, Unable to retrieve identity rsp, Unable to get Supi, AUTHENTICATION_SUCCESS, AUTHENTICATION_REJECTED, AV_GENERATION_PROBLEM, CONTEXT_NOT_FOUND, INVALID_HN_PUBLIC_KEY_IDENTIFIER, INVALID_SCHEME_OUTPUT, NETWORK_FAILURE, SERVING_NETWORK_NOT_AUTHORIZED, UNSUPPORTED_PROTECTION_SCHEME, UPSTREAM_SERVER_ERROR, USER_NOT_FOUND, Unable to get rsp`

- Label: `slice_data`

Label Description: slice data

Example: `2-333333`

## AMF DEBUG PROTO MAP STATS Category

### amf\_debug\_proto\_map\_stats

Description: Debug stats

Sample Query:

`amf_debug_proto_map_stats(msg_type=\"N2UeRadioCapabilityCheckRsp\", action=\"dropped\", reason=\"connection_not_found\")`

Labels:

- Label: `msg_type`  
Label Description: Message Type  
Example: `N2UeRadioCapabilityCheckRsp,N2InitialContextSetupRsp`
- Label: `action`  
Label Description: Action  
Example: `dropped`
- Label: `reason`  
Label Description: Reason  
Example: `connection_not_found`

## AMF Disconnect stats Category

### **amf\_disconnect\_stats**

Description: AMF Disconnect stats counters

Sample Query: `amf_disconnect_stats{reason=\"disc_ue_init_dereg\"}`

Labels:

- Label: `reason`  
Label Description: The reason associated with an call disconnect  
Example: `disc_ue_init_dereg, disc_nw_init_dereg, Ausf_AuthReject, Ausf_DropPeerMsg`

## AMF EBI Assign failures Category

### **amf\_ebi\_assign\_failures**

Description: EBI Assign failure stats

Sample Query:

```
amf_ebi_assign_failures{message_type=\"amf_ebi_rejected_no_n26\",status=\"success\",reason=\"Unable to get rsp\",slice_data=\"2-333333\"}
```

Labels:

- Label: `message_type`  
Label Description: The message type associated with an ebi service  
Example: `amf_ebi_rejected_no_n26, amf_ebi_fail_pdu_session_id, amf_ebi_fail_bearers_not_found`
- Label: `status`  
Label Description: Overall status  
Example: `success, failures`

- Label: `reason`

Label Description: The reason associated with an ebi

Example: Unable to get rsp, Unable to retrieve msg from rsp, Unknown Subscriber, Internal Error, Msg Timeout

- Label: `slice_data`

Label Description: slice data

Example: 2-333333

## AMF Initial Context Setup stats Category

### **ics\_service\_stats**

Description: Initial Context Setup stats

Sample Query:

```
ics_service_stats(message_type=\"N2InitialContextSetupReq\",status=\"success\",reason=\"Success\",slice_data=\"2-333333\")
```

Labels:

- Label: `message_type`

Label Description: The message type associated with an icsr service

Example: N2InitialContextSetupReq, N2InitialContextSetupRsp, N2InitialContextSetupFailure

- Label: `status`

Label Description: Overall status

Example: success, failures

- Label: `reason`

Label Description: The reason associated with an icsr

Example: Suspend, Suspend for Async, Unable to get rsp, Unable to retrieve msg from rsp, Internal Error, Success

- Label: `slice_data`

Label Description: slice data

Example: 2-333333

## AMF METRICS NGAP MESSAGE TOTAL Category

### **amf\_ngap\_message\_total**

Description: Total number of NGAP msgs

**Sample Query:**

```
amf_ngap_message_total{message_direction=\"inbound\",message_type=\"N2NGSetupRsp\"}
```

**Labels:**

- Label: `message_direction`

Label Description: Message Direction

Example: outbound,inbound

- Label: `message_type`

Label Description: Message-Type\_Cause

Example: N2RanConfigUpdateFailure, N2AmfConfigUpdate, N2DownlinkNASTransport, N2NGSetupFailure, N2NGSetupRsp, N2ErrorIndication, N2UeContextReleaseCommand, N2InitialContextSetupReq, N2PduSessResouceModifyReq, N2RanConfigUpdateAck,Paging, N2PduSessResouceSetupReq, N2PathSwitchReqAckMsg, N2PathSwitchReqFailureMsg, N2DLRanStatuTransfer, N2HandoverRequest, N2HandoverCommand, N2HandoverCancelAck, N2HandoverPreparationFailure, N2NGResetAck, N2UeRadioCapabilityCheckReq, NonUeN2WriteReplaceWarningReq, N2HandoverRequired, N2HandoverCancel, N2UeContextReleaseRequest, N2HandoverFailure, N2AmfConfigUpdateTimeout, N2NGSetupReq, N2InitialUeMessage, N2UplinkNASTransport, N2PduSessResourceSetupRsp, N2PduSessResourceReleaseRsp, N2PduSessResourceModifyRsp, N2ErrorIndication, N2UeContextReleaseComplete, N2InitialContextSetupRsp, N2InitialContextSetupFail, N2AmfConfigUpdateAck, N2AmfConfigUpdateFailure, N2RanConfigUpdate, N2PathSwitchReqMsg, N2HandoverRequestAck, N2HandoverNotify, N2UeRadioCapabilityInfoInd, N2UeRadioCapabilityCheckRsp, N2UplinkRanStatusTransfer, NonUeN2WriteReplaceWarningRsp, NonUeN2PWSCancelWarningRsp, NonUeN2PWSFailureIndication, NonUeN2PWSRestartIndication, N2NGReset, N2UeContextReleaseRequest\_CauseMiscHardwareFailure, N2UeContextReleaseCommand\_CauseNasDeregister

## AMF NAS ASN DECODE ERR STATS Category

**nas\_asn\_decode\_error\_stats**

Description: Nas ASN Decoding errors

**Sample Query:**

```
nas_asn_decode_error_stats{message_type=\"N1RegistrationRequest\",asn_failures=\"CauseProtocolTransferSyntaxError\"}
```

**Labels:**

- Label: `message_type`

Label Description: Message Type

Example: N1RegistrationRequest, N1RegistrationComplete, N1UINasTransport, N1DeRegistrationRequestUeOrigDereg, N1DeRegistrationAcceptUeTermDereg, N1ServiceRequest, N1AuthenticationResponse, N1SecurityModeComplete, N1SecurityModeReject, N1AuthenticationFailure, N1IdentityResponse, N1ConfigurationUpdateComplete

- Label: `asn_failures`

Label Description: Failure reason

Example: CauseProtocolTransferSyntaxError

## AMF NAS ASN ENCODE ERR STATS Category

### **nas\_asn\_encode\_error\_stats**

Description: Nas ASN Encoding errors

Sample Query:

```
nas_asn_encode_error_stats{message_type=\"N1AuthenticationRequest\",asn_failures=\"\"}
```

Labels:

- Label: `message_type`

Label Description: Message Type

Example: N1AuthenticationRequest, N1AuthenticationResult, N1AuthenticationReject, N1RegistrationAccept, N1RegistrationReject, N1DINasTransport, N1DeRegistrationAcceptUeOrigDereg, N1DeRegistrationRequestUeTermDereg, N1ServiceAccept, N1ServiceReject, N1ConfigurationUpdateCommand, N1IdentityRequest, N1Notification, N1SecurityModeCommand

- Label: `asn_failures`

Label Description: Failure reason

Example:

## AMF NAS INTEGRITY FAILURE Category

### **IntegrityCheckFailure**

Description: Integrity failures

Sample Query: `IntegrityCheckFailure{message_type=\"N1IdentityResponse\"}`

Labels:

- Label: `message_type`

Label Description: Message Type

Example: Unsupported\_N1\_Msg, N1DeRegistrationAcceptUeTermDereg, N1DeRegistrationRequestUeOrigDereg, N1IdentityResponse

## AMF NGAP ASN DECODE ERR STATS Category

### **ngap\_asn\_decode\_error\_stats**

Description: Ngap ASN Decoding errors

**Sample Query:**

```
ngap_asn_decode_error_stats{message_type=\"N2NGSetupReq\",asn_failures=\"CauseProtocolTransferSyntaxError\"}
```

**Labels:**

- Label: `message_type`

Label Description: NGAP Message Type

Example: N2NGSetupReq, N2InitialUeMessage, N2UplinkNASTransport, N2PduSessResourceSetupRsp, N2PduSessResourceReleaseRsp, N2PduSessResourceModifyRsp, N2UeContextReleaseRequest, N2UeContextReleaseRequest, N2ErrorIndication, N2UeContextReleaseComplete, N2InitialContextSetupRsp, N2AmfConfigUpdateAck, N2AmfConfigUpdateFailure, N2RanConfigUpdate, N2PathSwitchReqMsg, N2HandoverRequired, N2HandoverRequestAck, N2HandoverNotify, N2UeRadioCapabilityInfoInd, N2UeRadioCapabilityCheckRsp, N2UplinkRanStatusTransfer, NonUeN2WriteReplaceWarningRsp, NonUeN2PWSFailureIndication, NonUeN2PWSRestartIndication, N2NGReset, N2HandoverCancel

- Label: `asn_failures`

Label Description: Failure reason

Example: CauseProtocolTransferSyntaxError

## AMF NGAP ASN ENCODE ERR STATS Category

**ngap\_asn\_encode\_error\_stats**

Description: Ngap ASN Encoding errors

Sample Query: `ngap_asn_encode_error_stats{message_type=\"NgSetupResponse\",asn_failures=\"\"}`

**Labels:**

- Label: `message_type`

Label Description: NGAP Message Type

Example: RanConfigUpdateFailure, DINasTransport, NgSetupFail, NgSetupResponse, UeErrorIndication, UeCtxReleaseCommand, InitialContextSetupRequest, PduSessModifyRequest, PduSessReleaseCommand, RanConfigUpdateAck, Paging, PduSessResourceSetupRequest, PathSwitchRequestAck, PathSwitchRequestFailure, DownlinkRanStatusTransfer, HandoverRequest, HandoverCommand, HandoverCancelAck, HandoverPreparationFailure, NGRResetAcknowledge, UeCapabilityCheckReq, NgAmfConfigurationUpdate

- Label: `asn_failures`

Label Description: Failure reason

Example:

## AMF NGAP DL msg stats Category

### ngap\_dl\_msg\_stats

Description: AMF NGAP DL msg stats

Sample Query:

```
ngap_dl_msg_stats{message_type="N2HandoverCancelAck",status="success",reason="",slice_data="2-33333"}
```

Labels:

- Label: `message_type`

Label Description: The message type associated with a NGAP DL msg

Example: N2HandoverCancelAck, N2HandoverRequest, N2HandoverCommand, N2HandoverPreparationFailure

- Label: `status`

Label Description: Overall status

Example: success, failures

- Label: `reason`

Label Description: The reason associated with a NGAP DL msg

Example: Unable to get rsp, Unable to retrieve msg from rsp, Unknown Subscriber, Internal Error, Msg Timeout, Peer Info Not Available, Req Not Accepted, Sub IMSI Not Received, PGW FQDN Not Received, Mandatory IE Missing, Invalid Input, No Bearer Context, No Linked EBI, SM Context Failed for PDU, S1 mode Not Supported, SM Context PDU failed without N2smInfo, SM Context data received from SMF is NIL, N1 mode Not Supported

- Label: `slice_data`

Label Description: slice data

Example: 2-333333

## AMF Nas Message Total Category

### amf\_nas\_message\_total

Description: The number of nas message received or sent

Sample Query:

```
amf_nas_message_total{message_direction="inbound",message_type="Paging_Trigger_N1N2_Msg_Xfer",slice_data="2-33333"}
```

Labels:

- Label: `message_direction`

Label Description: The event type associated with nas message

Example: inbound, outbound



- Label: `slice_data`  
Label Description: slice data  
Example: 2-333333
- Label: `message_type`  
Label Description: The message type associated with the nas message  
Example: Paging\_Trigger\_N1N2\_Msg\_Xfer, N1DeRegReq\_UeOriginatingDereg, N1DeRegReq\_UeOriginatingDereg\_NormalDereg, N1RegComplete, N1RegComplete, N1RegRequest, N1RegRequest\_IdentityType\_SUCI, N1RegRequest\_RegType\_INITIAL\_REGISTRATION, N1ServiceReq, N1ServiceReq\_Idle, N1ServiceReq\_SIGNALLING, N1ServiceReq\_WithPdu, PduEstablishmentReq, PduModifyReq\_NwInitiated, N1DINasTransport, N1RegistrationAccept, N1ServiceAcc, N1UINasTransport, Paging, Paging\_Stage\_1, Paging\_TriggerType\_5qi

## AMF PCF Service Stats Category

### `n15_service_stats`

Description: AMF PCF service stats

Sample Query:

```
n15_service_stats{message_type=\"NpcfAmPolicyControlCreateReq\",status=\"success\",reason=\"Unable to get rsp\",slice_data=\"2-333333\"}
```

Labels:

- Label: `message_type`  
Label Description: The message type associated with an pcf service  
Example: NpcfAmPolicyControlCreateReq, NpcfAmPolicyControlCreateRsp, NpcfAmPolicyControlDeleteReq, NpcfAmPolicyControlDeleteRsp
- Label: `status`  
Label Description: Overall status  
Example: success, failures
- Label: `reason`  
Label Description: The reason associated with an pcf service  
Example: Suspend, Suspend for Async, Unable to get rsp, Unable to retrieve msg from rsp, Failure in PCF Response,Others, Internal Error
- Label: `slice_data`  
Label Description: slice data  
Example: 2-333333

## AMF Procedure Seconds Category

### amf\_procedure\_seconds

Description: Total number of seconds took for complete procedure

Sample Query: `amf_procedure_seconds{proc_type="UERegistration",status="success",proc_status="",slice_data="2-33333"}`

Labels:

- Label: `proc_type`

Label Description: The procedure type associated with an call flow procedure

Example: UERegistration, UEOwnDeRegistration, PduCreate, PduN1N2, PduN2Rsp, PduN1Rsp, PduMod, UEContextRelease, PduNotify, EBI, Paging, ServiceRequest, ContextTransfer, ContextTransferUpdate, XnHandover, N2HandoverSrc, HandoverToEPC, UeRadioCapInfoInd, NGRreset, N2HandoverTgt, HandoverFromEPC, UeCfgUpdate, DomainSelectionInfo, AmfRedirection, UpLinkDownlink, LawfulIntercept, RegistrationComplete

- Label: `status`

Label Description: The overall status of procedure

Example: success, failures, attempted

- Label: `proc_status`

Label Description: The current status of procedure

Example: ProcStatusComplete

- Label: `slice_data`

Label Description: slice data

Example: 2-333333

## AMF Procedure total Category

### amf\_procedure\_total

Description: Total number of procedure executed counter

Sample Query: `amf_procedure_total{proc_type="UERegistration",status="success",proc_status="",slice_data="2-33333"}`

Labels:

- Label: `proc_type`

Label Description: The procedure type associated with an call flow procedure

Example: UE Registration, UE DeRegistration, Pdu Create, Pdu N1N2, Pdu N2Rsp, Pdu N1Rsp, Pdu Mod, UE Context Release, Pdu Notify, EBI, Paging, Service Request, Context Transfer, Context Transfer

Upd, Xn Handover, N2 Handover Src, Handover to EPC, UeRadioCapInfoInd, NGRreset, N2 Handover Tgt, Handover From EPC, UeCfgUpdate, Domain Selection Info, Amf Redirection

- Label: `status`

Label Description: The overall status of procedure

Example: success, failures, attempted

- Label: `proc_status`

Label Description: The current status of procedure

Example: ProcStatusComplete

- Label: `slice_data`

Label Description: slice data

Example: 2-333333

## AMF RETRANSMISSION STATS Category

### **retransmission\_stats**

Description: number of Retransmissions

Sample Query: `retransmission_stats{msg_type=\"Paging\",status=\"success\"}`

Labels:

- Label: `msg_type`

Label Description: Message Type

Example: Paging, N1AuthenticationRequest, N1AuthenticationResult, N1AuthenticationReject, N1RegistrationAccept, N1RegistrationReject, N1DINasTransport, N1DeRegistrationAcceptUeOrigDereg, N1DeRegistrationRequestUeTermDereg, N1ServiceAccept, N1ServiceReject, N1ConfigurationUpdateCommand, N1IdentityRequest, N1Notification, N1SecurityModeCommand, N2MsgNgapDL, MsgNgap

- Label: `status`

Label Description: overall Status

Example: success, failures, max\_retry\_exceeded

## AMF Session stats Category

### **amf\_session\_stats**

Description: AMF Session stats counters

Sample Query: `amf_session_stats{status=\"attempted\"}`

Labels:

- Label: `ueType`  
Label Description: Type of the UE associated with the request  
Example: homer, roamer, unknown
- Label: `status`  
Label Description: UE session status indicated at AMF  
Example: attempted, success, setup

## AMF Smf service stats Category

### **n11\_service\_stats**

Description: AMF Smf service stats

Sample Query:

```
n11_service_stats{message_type=\"N11SMContextUpdateReq\",status=\"success\",reason=\"Unable to get rsp\",slice_data=\"2-333333\"}
```

Labels:

- Label: `message_type`  
Label Description: The message type associated with an smf service  
Example: N11SMContextUpdateReq, N11SMContextUpdateRsp, N11SMContextRetrieveRsp, N11SMContextRetrieveReq, N11SMContextCreateReq, N11SMContextCreateRsp
- Label: `status`  
Label Description: Overall status  
Example: success, failures
- Label: `reason`  
Label Description: The reason associated with an smf service  
Example: Unable to get rsp, Unable to retrieve msg from rsp, Unknown Subscriber, Internal Error, Msg Timeout, Peer Info Not Available, Req Not Accepted, Sub IMSI Not Received, PGW FQDN Not Received, Mandatory IE Missing, Invalid Input, No Bearer Context, No Linked EBI, SM Context Failed for PDU, S1 mode Not Supported, SM Context PDU failed without N2smInfo, SM Context data received from SMF is NIL, N1 mode Not Supported
- Label: `slice_data`  
Label Description: slice data  
Example: 2-333333

## AMF Smsf service stats Category

### n20\_service\_stats

Description: AMF Smsf service stats

Sample Query:

```
n20_service_stats(message_type=\"sms_activate_response\",status=\"success\",reason=\"Created\",slice_data=\"2-33333\")
```

Labels:

- Label: `message_type`

Label Description: The message type associated with an smsf service

Example: `sms_activate_request`, `sms_activate_response`, `sms_deactivate_request`, `sms_deactivate_response`, `sms_send_msg_request`, `sms_send_msg_rsp`, `sms_n1n2_message_transfer`, `sms_enable_ue_reachability`

- Label: `status`

Label Description: Overall status

Example: `success`, `failures`

- Label: `reason`

Label Description: The reason associated with an smsf service

Example: `Created`, `No Content`, `Gateway Timeout`, `Unknown Subscriber`

- Label: `slice_data`

Label Description: slice data

Example: `2-333333`

## AMF UDM Service Stats Category

### n8\_service\_stats

Description: AMF UDM service stats

Sample Query:

```
n8_service_stats(message_type=\"NudmSdmDataReq\",status=\"success\",reason=\"INVALID_GUAMI\",slice_data=\"2-33333\")
```

Labels:

- Label: `message_type`

Label Description: The message type associated with an udm service

Example: `NudmSdmDataReq`, `NUdmUecmDeregisterNotificationRequest`, `NUdmUecmDeregisterNotificationResponse`, `NudmSdmUnSubscriptionReq`, `NudmSdmUnSubscriptionRsp`, `NudmPcscfRestorationReq`, `NudmPcscfRestorationRsp`, `NudmUecmRegistrationReq`, `NudmUecmRegistrationRsp`, `NudmSdmDataReq`, `NudmSdmDataRsp`

NudmSdmSubscriptionReq, NudmSdmSubscriptionRsp, NudmSdmSorAckInfoReq, NudmSdmSorAckInfoRsp

- Label: `status`

Label Description: Overall status

Example: success, failures

- Label: `reason`

Label Description: The reason associated with an udm service

Example: Suspend, Suspend for Async, Unable to get rsp, Unable to retrieve msg from rsp, Others, Internal Error, Missing Supi, Failure from Udm, SUBSCRIPTION\_WITHDRAWN, UE\_INITIAL\_REGISTRATION, CONTEXT\_NOT\_FOUND, DATA\_NOT\_FOUND, UNSUPPORTED\_RESOURCE\_URI, USER\_NOT\_FOUND, ACCESS\_NOT\_ALLOWED, INVALID\_GUAMI, NO\_PS\_SUBSCRIPTION, RAT\_NOT\_ALLOWED, ROAMING\_NOT\_ALLOWED, UNKNOWN\_5GS\_SUBSCRIPTION, UNPROCESSABLE\_REQUEST

- Label: `slice_data`

Label Description: slice data

Example: 2-333333

## AMF Ue Service Stats Category

### **n1\_service\_stats**

Description: AMF Ue service stats

Sample Query:

```
n1_service_stats{message_type=\"IdentityResponse\", status=\"success\", reason=\"key Mismatch\", slice_data=\"2-333333\"}
```

Labels:

- Label: `message_type`

Label Description: The message type associated with an UE service

Example: IdentityResponse, N1SecurityModeComplete, N1AuthenticationRsp, N1SecurityModeCommand, N1AuthenticationReq, N1AuthFail\_SyncFailure, N1AuthenticationReject, N1AuthFail\_MacFailure, IdentityRequest\_Imei, IdentityRequest\_Imeipv, IdentityRequest\_Suci, N1DeRegAccept\_UeTerminatedDereg, N1UeConfigurationUpdCmd

- Label: `status`

Label Description: Overall status

Example: success, failures, attempted

- Label: `reason`

Label Description: The reason associated with an UE service

Example: Suspend, Suspend for Async, Unable to get rsp, Unable to retrieve msg from rsp, Supi mismatch, Internal Error, Sync Failed, Timeout, Others, No Security Context from Peer, Peer Provided Sec Context Failed, NgKsi Already In Use, Scheduled ipc action in background, Unable to retrieve identity rsp, Unable to get Supi, key Mismatch

- Label: `slice_data`

Label Description: slice data

Example: 2-333333

## ASN FAILURE MANDATORY IE MISSING Category

### **asn\_failures\_mandatory\_ie\_missing**

Description: mandatory missing Ies

Sample Query:

```
asn_failures_mandatory_ie_missing{missing_ie="MessageId",message_type="WriteReplaceWarningRequest"}
```

Labels:

- Label: `missing_ie`

Label Description: Missing IE

Example: MessageId, SerialNumber, GlobalRANNodeID, RANNodeName, SupportedTAList, RanUeNgapId, NasPdu, UserLocationInformation, Cause, ResetType

- Label: `message_type`

Label Description: Message Type

Example:

WriteReplaceWarningRequest,NgSetupRequest,RanConfigUpdate,InitialUeMessage,UINasTransport,NgapReset

## Discover Messages Time statistics Category

### **nf\_discover\_total\_time**

Description: Discover Messages Total time statistics

Sample Query: `nf_discover_total_time{nf_type="amf",`

```
host="http://10.105.227.109:8082/nrf-nfm/v1", result="timeouOrRPCError"}
```

Labels:

- Label: `nf_type`

Label Description: Network Function type

Example: nrf, udm, amf, pcf, ausf, smf

- Label: `host`

Label Description: End Point address

Example: `http://10.105.227.109:8082/nnrf-nfm/v1`

- Label: `result`

Label Description: result of discover message

Example: 200, 201, 204, success, timeout\_rpc\_error, response\_parse\_failure

## Discover Messages statistics Category

### `nf_discover_messages_total`

Description: Discover Messages statistics

Sample Query: `nf_discover_messages_total{nf_type="amf", host="http://10.105.227.109:8082/nnrf-nfm/v1", result="timeouOrRPCError"}`

Labels:

- Label: `nf_type`

Label Description: Network Function type

Example: nrf, udm, amf, pcf, ausf, smf

- Label: `host`

Label Description: End Point address

Example: `http://10.105.227.109:8082/nnrf-nfm/v1`

- Label: `result`

Label Description: result of discover message

Example: 200, 201, 204, success, timeout\_rpc\_error, response\_parse\_failure

## Marshal Failures Category

### `marshal_failures`

Description: total number of Marshal error statss

Sample Query: `marshal_failures{message_type="\SmfSmContextDelete"}`

Labels:

- Label: `message_type`

Label Description: The message type associated with Marshal failure stats

Example: AusfAuthenticationCfm, AusfAuthenticationReq, UdmDeRegistrationReq, UdmRegistrationReq, UdmSubscriptionReq, UdmUnSubscriptionReq, PcfAmfPolicyControlCreate, PcfAmfPolicyControlDelete, SmfSmContextCreate, SmfSmContextDelete, SmfSmContextUpdate, AmfCommCreateUeContext, AmfCommN1N2MessageTransfer



# N26 Service Stats Category

## n26\_service\_stats

Description: AMF N26 stats

Sample Query:

```
n26_service_stats{message_type="GTPCRxIdentificationRequest",status="success",reason="N1 mode Not Supported",slice_data="2-333333"}
```

Labels:

- Label: `message_type`

Label Description: The message type associated with an N26 service

Example: GTPCRxIdentificationRequest, GTPCTxIdentificationRequest, GTPCRxContextRequest, GTPCRxContextResponse, GTPCRxContextAck, GTPCTxContextAck, GTPCRxFwdRelocCmpNotf, GTPCTxFwdRelocCmpNotf, GTPCRxRelocCancelReq, GTPCTxRelocCancelRsp, GTPCTxFwdRelocResponse

- Label: `status`

Label Description: Overall status

Example: success, failures

- Label: `reason`

Label Description: The reason associated with an N26 service

Example: Unable to get rsp, Unable to retrieve msg from rsp, Unknown Subscriber, Internal Error, Msg Timeout, Peer Info Not Available, Req Not Accepted, Sub IMSI Not Received, PGW FQDN Not Received, Mandatory IE Missing, Invalid Input, No Bearer Context, No Linked EBI, SM Context Failed for PDU, S1 mode Not Supported, SM Context PDU failed without N2smInfo, SM Context data received from SMF is NIL, N1 mode Not Supported

- Label: `slice_data`

Label Description: slice data

Example: 2-333333

category:AMF NGAP UL msg stats

## ngap\_ul\_msg\_stats

Description: AMF NGAP UL msg stats

Sample Query:

```
ngap_ul_msg_stats{message_type="N2HandoverFailure",status="success",reason="",slice_data="2-333333"}
```

Labels:

- Label: `message_type`

Label Description: The message type associated with a NGAP UL msg

Example: N2HandoverFailure, N2HandoverRequest, N2HandoverRequestAck, N2HandoverNotify, N2HandoverRequired, N2HandoverCancel

- Label: `status`

Label Description: Overall status

Example: success, failures

- Label: `reason`

Label Description: The reason associated with a NGAP UL msg

Example: Unable to get rsp, Unable to retrieve msg from rsp, Unknown Subscriber, Internal Error, Msg Timeout, Peer Info Not Available, Req Not Accepted, Sub IMSI Not Received, PGW FQDN Not Received, Mandatory IE Missing, Invalid Input, No Bearer Context, No Linked EBI, SM Context Failed for PDU, S1 mode Not Supported, SM Context PDU failed without N2smInfo, SM Context data received from SMF is NIL, N1 mode Not Supported

- Label: `slice_data`

Label Description: slice data

Example: 2-333333

## NF End point selections Category

### **nf\_endpoint\_selections\_total**

Description: NF End Point Selection Statistics

Sample Query: `nf_endpoint_selections_total{message_type="\SmfSmContextDelete", nf_type="\ausf", host="\http://10.105.227.109:8082/nrf-nfm/v1", req="\initial"}`

Labels:

- Label: `message_type`

Label Description: The message type associated with the failure stats

Example: AusfAuthenticationCfm, AusfAuthenticationReq, UdmDeRegistrationReq, UdmRegistrationReq, UdmSubscriptionReq, UdmUnSubscriptionReq, PcfAmfPolicyControlCreate, PcfAmfPolicyControlDelete, SmfSmContextCreate, SmfSmContextDelete, SmfSmContextUpdate, AmfCommCreateUeContext, AmfCommN1N2MessageTransfer

- Label: `nf_type`

Label Description: Network Function type

Example: nrf, udm, amf, pcf, ausf, smf

- Label: `host`

Label Description: End Point address

Example: `http://10.105.227.109:8082/nrf-nfm/v1`

- Label: `req`

Label Description: req type

Example: initial, fallback,

## NF failure handling stats Category

### **nf\_failure\_handling\_stats\_total**

Description: NF Failure handling stats

Sample Query:

```
nf_failure_handling_stats_total{message_type="\SmfSmContextDelete",nf_type="SMF",  
host="http://10.105.227.109:8082/nrf-nfm/v1", req="initial", response="202",  
status="final"}
```

Labels:

- Label: `message_type`

Label Description: The message type associated with the failure stats

Example: AusfAuthenticationCfm, AusfAuthenticationReq, UdmDeRegistrationReq, UdmRegistrationReq, UdmSubscriptionReq, UdmUnSubscriptionReq, PcfAmfPolicyControlCreate, PcfAmfPolicyControlDelete, SmfSmContextCreate, SmfSmContextDelete, SmfSmContextUpdate, AmfCommCreateUeContext, AmfCommN1N2MessageTransfer

- Label: `nf_type`

Label Description: Network Function type

Example: nrf, udm, amf, pcf, ausf, smf

- Label: `host`

Label Description: End Point address

Example: http://10.105.227.109:8082/nrf-nfm/v1

- Label: `req`

Label Description: Request type

Example: initial, fallback,

- Label: `response`

Label Description: Response from the server

Example: 200, 201, 204, timeout\_rpc\_error,

- Label: `status`

Label Description: Status from the server

Example: retry, final

## NF management message time statistics Category

### **nf\_management\_total\_time**

Description: NF management messages total time taken

Sample Query: `nf_management_total_time{host="http://10.105.227.109:8082/nrf-nfm/v1", direction="outbound", message_type="registration", result="timeouOrRPCError" }`

Labels:

- Label: `host`

Label Description: End Point address

Example: `http://10.105.227.109:8082/nrf-nfm/v1`

- Label: `direction`

Label Description: Direction indicates about the message going out or coming in

Example: `inbound, outbound`

- Label: `message_type`

Label Description: Type of Message

Example: `registration, heartbeat, subscription, notification`

- Label: `result`

Label Description: result of discover message

Example: `200, 201, 204, success, timeout_rpc_error, response_parse_failure, request_parse_failure, invalid_notify_event, invalid_nf_instance_uri, internal_error`

## NF management messages statistics Category

### **nf\_management\_stats\_total**

Description: NF management messages statistics

Sample Query: `nf_management_stats_total{host="http://10.105.227.109:8082/nrf-nfm/v1", direction="outbound", message_type="registration", result="timeouOrRPCError" }`

Labels:

- Label: `host`

Label Description: End Point address

Example: `http://10.105.227.109:8082/nrf-nfm/v1`

- Label: `direction`

Label Description: Direction indicates about the message going out or coming in

Example: `inbound, outbound`

- Label: `message_type`  
Label Description: Type of Message  
Example: registration, heartbeat, subscription, notification
- Label: `result`  
Label Description: result of discover message  
Example: 200, 201, 204, success, timeout\_rpc\_error, response\_parse\_failure

## NRF Discovery Category

### **nf\_discover\_events\_total**

Description: NF Discover Stats

Sample Query: `nf_discover_events_total{nf_type="pcf", response_type="local"}`

Labels:

- Label: `nf_type`  
Label Description: Network Function type  
Example: nrf, udm, amf, pcf, ausf, smf
- Label: `response_type`  
Label Description: Discovery response chosen from  
Example: local, cache, expired-cache

## Security Algorithm Category

### **amf\_nas\_security\_algos\_seconds\_total**

Description: Statistic for capturing duration taken for security algorithm

Sample Query:

```
amf_nas_security_algos_seconds_total{algos_type="128-5G-IA1", status="success", reason="", algos_lang="go", message_type="N1IdentityResponse", message_direction="inbound"}
```

Labels:

- Label: `message_type`  
Label Description: The name of the message type  
Example: N1IdentityResponse
- Label: `status`  
Label Description: Status of the application of security algorithm  
Example: success, failures

- Label: `reason`  
Label Description: The reason for failure  
Example: integrity check failed,Security Context Not Found
- Label: `algos_type`  
Label Description: The type of algorithm  
Example: 128-5G-IA1
- Label: `message_direction`  
Label Description: The direction of the message flow  
Example: inbound, outbound
- Label: `algos_lang`  
Label Description: The implementation of security algorithm  
Example: go, c

### **amf\_nas\_security\_algos\_total**

Description: Statistic for capturing counter of security algorithm

Sample Query: `amf_nas_security_algos_total{algos_type=\"128-5G-IA1\",status=\"success\",reason=\"\",algos_lang=\"go\",message_type=\"N1IdentityResponse\",message_direction=\"inbound\"}`

Labels:

- Label: `message_type`  
Label Description: The name of the message type  
Example: N1IdentityResponse
- Label: `status`  
Label Description: Status of the application of security algorithm  
Example: success, failures
- Label: `reason`  
Label Description: The reason for failure  
Example: integrity check failed,Security Context Not Found
- Label: `algos_type`  
Label Description: The type of algorithm  
Example: 128-5G-IA1
- Label: `message_direction`  
Label Description: The direction of the message flow  
Example: inbound, outbound
- Label: `algos_lang`

Label Description: The implementation of security algorithm

Example: go, c

## Unmarshal Failures Category

### **unmarshal\_failures**

Description: total number of Unmarshal error stats

Sample Query: `unmarshal_failures{message_type="\SmfSmContextDelete\"}`

Labels:

- Label: `message_type`

Label Description: The message type associated with Unmarshal failure stats

Example: `AusfAuthenticationCfm, AusfAuthenticationReq, UdmDeRegistrationReq, UdmRegistrationReq, UdmSubscriptionReq, UdmUnSubscriptionReq, PcfAmfPolicyControlCreate, PcfAmfPolicyControlDelete, SmfSmContextCreate, SmfSmContextDelete, SmfSmContextUpdate, AmfCommCreateUeContext, AmfCommN1N2MessageTransfer`

