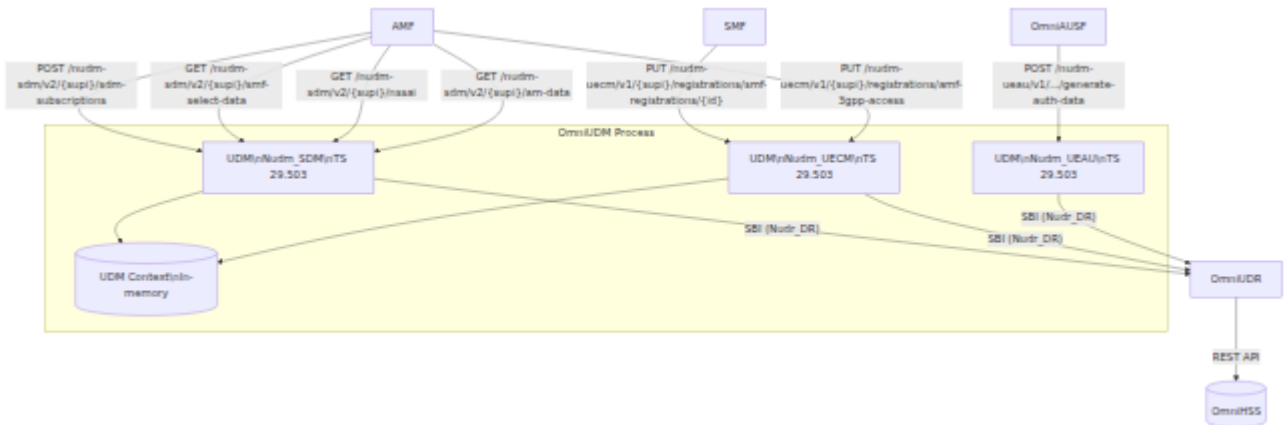


OmniUDM

1. Overview

OmniUDM is an Open 5G Core (UDM) implementation for 5G networks (Nudm_UEAU) and 5G Core (Nudm_UECM) and 5G Core (Nudm_SDM).

OmniUDM is implemented as a set of services (OmniAUSF and OmniUDR) and OmniUDM is implemented as a set of services (AUSF and UDR) and OmniUDM is implemented as a set of services (SBI and UDR) and OmniUDM is implemented as a set of services (AM and SM) and OmniUDM is implemented as a set of services (SDM) and OmniUDM is implemented as a set of services.



2. 3GPP

Item	Reference
UDM	TS 23.501 § 6.2.7
Nudm_UEAU	TS 29.503 § 5.2.2
Nudm_UECM	TS 29.503 § 5.3
Nudm_SDM	TS 29.503 § 5.2.3
Nudr_DataRepository	TS 29.504
5G-AKA	TS 33.501 § 6.1.3
Milenage	TS 35.206
SUCI / SUPI	TS 23.003 § 2.2B, TS 33.501 § 6.12
SQL	TS 33.102 § 6.3.5, TS 33.501 § 6.1.3.4
Protocols (Kausf, Kseaf, HXRES*)	TS 33.501 § A

3. SBI

HTTP/1.1 Content-Type: application/json

Nudm_UEAU (TS 29.503 § 5.2.2 §)

Method	URI	Request	Response
POST	/nudm-ueau/v1/{supi0rSuci}/security-information/generate-auth-data	5G-AKA	200 OK
POST	/nudm-ueau/v1/{supi}/auth-events		201 Created
DELETE	/nudm-ueau/v1/{supi}/auth-events/{authEventId}		204 No Content

Nudm_UECM (TS 29.503 § 5.3 §)

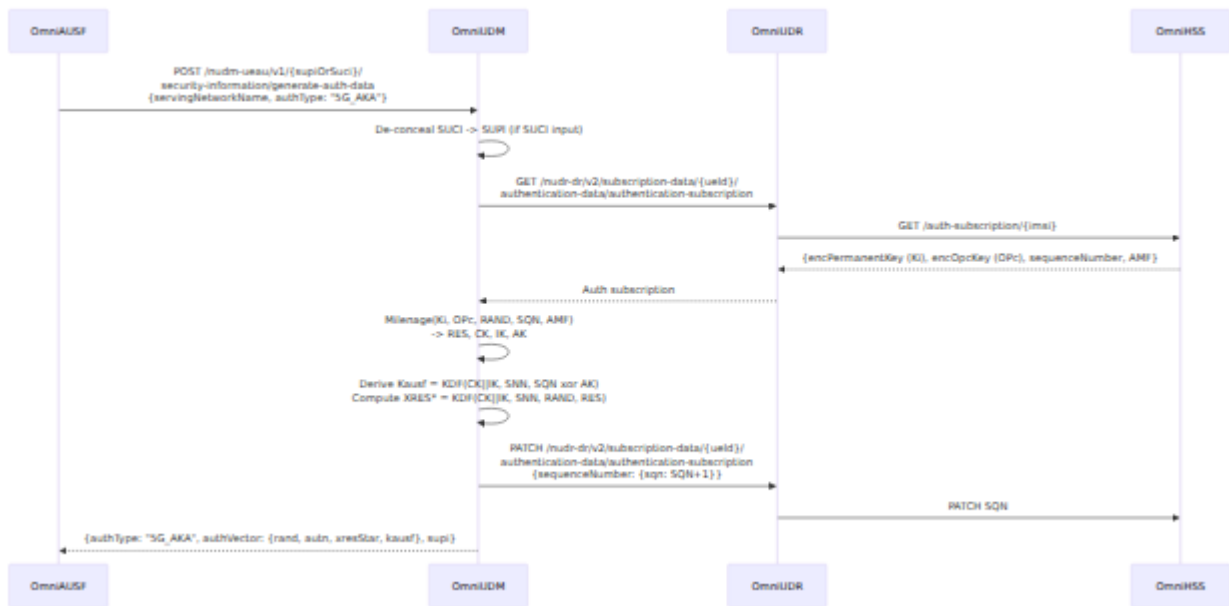
Method	URI	Request	Response
PUT	/nudm-uecm/v1/{supi}/registrations/amf-3gpp-access	AMF UE 3GPP	200 OK
GET	/nudm-uecm/v1/{supi}/registrations/amf-3gpp-access	AMF 3GPP	200 OK
PUT	/nudm-uecm/v1/{supi}/registrations/smf-registrations/{pduSessionId}	SMF PDU	200 OK
DELETE	/nudm-uecm/v1/{supi}/registrations/smf-registrations/{pduSessionId}	SMF PDU	204 No Content

□□□□

```
config :omniudm,  
  sbi_scheme: "http",  
  sbi_addr: "127.0.0.12",  
  sbi_port: 7777,  
  nrf_uri: "http://127.0.0.10:7777",  
  udr_uri: "http://127.0.0.22:7777",  
  mcc: "999",  
  mnc: "70",  
  heartbeat_interval: 10_000
```

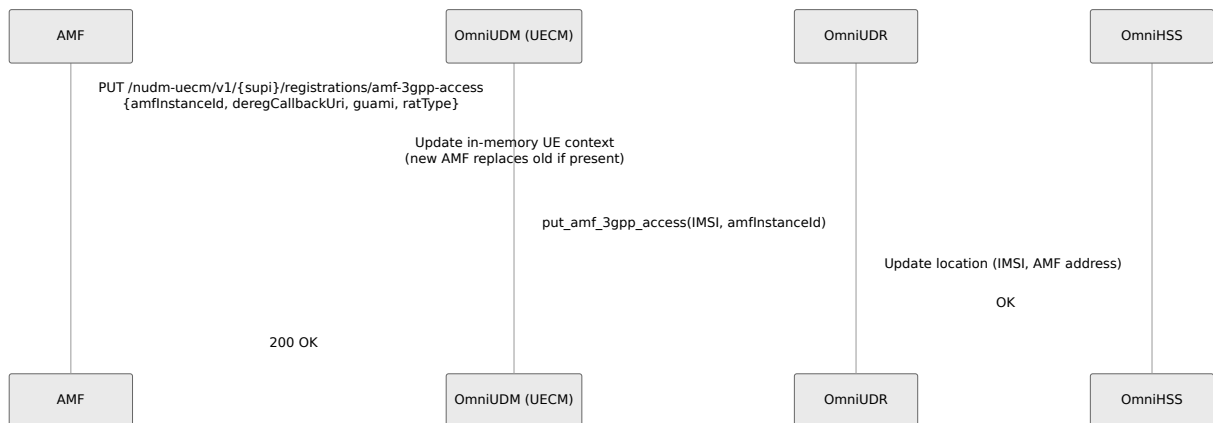
□□□

□□	□ □	□□□	□□
sbi_scheme	□ □ □	"http"	SBI HTTP □□□□ URI □□
sbi_addr	□ □ □	"127.0.0.12"	SBI HTTP □□□□□ □ IP □□
sbi_port	□ □	7777	SBI HTTP □□□□□ □ TCP □□
nrf_uri	□ □ □	"http://127.0.0.10:7777"	NRF □□□ URI□□□□ NF □□□□□
mcc	□ □ □	"999"	□□ PLMN □□□□□ □□□□□□□□□□□□□□ □□□□□
mnc	□ □ □	"70"	□□ PLMN □□□□□ □□
heartbeat_interval	□ □ (□ □)	10000	OmniUDM □□ NRF □□ PATCH □ □□□□
udr_uri	□ □ □	"http://127.0.0.22:7777"	□□ UDR (OmniUDR) □□□□ URI□UDM □□ SBI □□ UDR □□□□



5.3 UE Registration (AMF → UDM)

AMF → UDM → UE



5.4 UE Registration (SDM)

UE → AMF

7. Prometheus ☐☐

UDM ☐☐

☐☐	☐☐	☐☐	☐☐
<code>omni_udm.auth.requests.count</code>	counter	supi, result	☐☐☐☐ ☐☐☐☐
<code>omni_udm.uecm.amf_registration.count</code>	counter	supi	AMF ☐☐☐☐
<code>omni_udm.auth.result.count</code>	counter	supi, result	☐☐☐☐ ☐☐☐☐
<code>omni_udm.auth_vector_generations.total</code>	counter	result	☐☐☐☐ ☐☐☐☐ ☐☐☐☐
<code>omni_udm.uecm_registrations.total</code>	counter	result	☐ UECM AMF ☐☐
<code>omni_udm.sdm_queries.total</code>	counter	data_type	☐ SDM ☐☐☐☐
<code>omni_udm.active_ue_contexts.count</code>	gauge	--	☐☐ UE ☐☐☐☐ ☐☐
<code>omni_udm.nrf.registration.status</code>	gauge	nf_type	NRF ☐☐☐☐ (1=☐ ☐☐,

00	00	00	00
			0=00 0)

BEAM VM 00

00	00	00
<code>beam.memory.total</code>	gauge	0 BEAM 000000
<code>beam.memory.processes</code>	gauge	Erlang 00000000
<code>beam.memory.processes_used</code>	gauge	0000000000
<code>beam.memory.system</code>	gauge	0000 (ETS, atoms, code)
<code>beam.memory.atom</code>	gauge	000000
<code>beam.memory.atom_used</code>	gauge	00000000
<code>beam.memory.binary</code>	gauge	000000
<code>beam.memory.code</code>	gauge	00000
<code>beam.memory.ets</code>	gauge	ETS 0000
<code>beam.processes.count</code>	gauge	Erlang 000000
<code>beam.ports.count</code>	gauge	Erlang 000000
<code>beam.atom.count</code>	gauge	000000
<code>beam.vm.uptime</code>	gauge	VM 00000000

8. 404

404

OmniUDM SBI

1. `udr_uri` OmniUDM
2. OmniUDR OmniHSS IMSI
3. AMF/AUSF SUCI OmniUDM UDR SUCI SUCI IMSI

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AUSF RES* HRES* HXRES* UE Milenage (Ki, OPc) OmniHSS RAND/AUTN

SQN

UE AUTS AMF `resynchronizationInfo` OmniAMF AMF-H7 AUSF UDM/UDM UDR/HSS SQN

AMF NSSAI

`GET /nudm-sdm/v2/{supi}/nssai` NSSAI (`sst=1`, `sst=2`) (UDM-C4) NSSAI `NudmSDM.get_nssai/1` OmniHSS NSSAI UDM-C4

UE

UE (UDM-M6) AMF `PUT /nudm-uecm/v1/{supi}/registrations/amf-3gpp-access` UE UE

SDM

SDM callbackReference URI OmniUDM Task.start
SDM notification to {uri} failed GET /nudm-
sdm/v2/{supi}/sdm-subscriptions/{id} (UDM-L3) SBI

SMF

SMF SMF PDU SMF AMF PDU
SM