

5G simulation

```
p1@5G-RedCap:~/Desktop$ sudo apt-get update
[sudo] password for p1:
Hit:1 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:2 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Hit:3 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Reading package lists... Done
```

```
p1@5G-RedCap:~/Desktop$ sudo apt-get install gnupg curl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
gnupg is already the newest version (2.2.27-3ubuntu2.4).
gnupg set to manually installed.
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 194 kB of archives.
After this operation, 455 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 curl amd64 7.81.0-1ubuntu1.21 [194 kB]
Fetched 194 kB in 4s (46.4 kB/s)
Selecting previously unselected package curl.
(Reading database ... 180852 files and directories currently installed.)
Preparing to unpack .../curl_7.81.0-1ubuntu1.21_amd64.deb ...
Unpacking curl (7.81.0-1ubuntu1.21) ...
Setting up curl (7.81.0-1ubuntu1.21) ...
Processing triggers for man-db (2.10.2-1) ...
p1@5G-RedCap:~/Desktop$ curl -fsSL https://www.mongodb.org/static/pgp/server-8.0.asc | \
  sudo gpg -o /usr/share/keyrings/mongodb-server-8.0.gpg \
  --dearmor
```

```
p1@5G-RedCap:~/Desktop$ echo "deb [ arch=amd64,arm64 signed-by=/usr/share/keyrings/mongodb-server-8.0.gpg ] https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0 multiverse" | sudo tee /etc/apt/sources.list.d/mongodb-org-8.0.list
deb [ arch=amd64,arm64 signed-by=/usr/share/keyrings/mongodb-server-8.0.gpg ] https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0 multiverse
p1@5G-RedCap:~/Desktop$ sudo apt-get update
Hit:1 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:2 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Hit:3 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:5 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0 InRelease [3,005 B]
Get:6 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 Packages [55.5 kB]
Get:7 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 Packages [55.5 kB]
Fetched 114 kB in 7s (17.0 kB/s)
Reading package lists... Done
p1@5G-RedCap:~/Desktop$
```

```
p1@5G-RedCap:~/Desktop$ sudo apt-get install -y mongodb-org
[sudo] password for p1:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  mongodb-database-tools mongodb-mongosh mongodb-org-database mongodb-org-database-tools-extra mongodb-org-mongos mongodb-org-server mongodb-org-shell mongodb-org-tools
The following NEW packages will be installed:
  mongodb-database-tools mongodb-mongosh mongodb-org-database mongodb-org-database-tools-extra mongodb-org-mongos mongodb-org-server mongodb-org-shell mongodb-org-tools
0 upgraded, 9 newly installed, 0 to remove and 0 not upgraded.
Need to get 191 MB of archives.
After this operation, 678 MB of additional disk space will be used.
Get:1 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 mongodb-database-tools amd64 100.13.0 [58.9 MB]
Get:2 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 mongod-mongosh amd64 2.5.10 [59.0 MB]
Get:3 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 mongodb-org-shell amd64 8.0.16 [2,986 B]
Get:4 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 mongodb-org-server amd64 8.0.16 [42.6 MB]
Get:5 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 mongodbs-org-mongos amd64 8.0.16 [32.0 MB]
Get:6 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 mongodb-org-database-tools-extra amd64 8.0.16 [7,788 B]
Get:7 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 mongodb-org-database amd64 8.0.16 [3,422 B]
Get:8 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 mongodb-org-tools amd64 8.0.16 [2,770 B]
Get:9 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0/multiverse amd64 mongodbs-org-8.0.16 [2,800 B]
Fetched 191 MB in 5min 49s (549 kB/s)
Selecting previously unselected package mongodb-database-tools.
(Reading database ... 180859 files and directories currently installed.)
Preparing to unpack .../mongodb-database-tools_100.13.0_amd64.deb ...
Unpacking mongodb-database-tools (100.13.0) ...
Selecting previously unselected package mongod-mongosh.
Preparing to unpack .../1-mongod-mongosh_2.5.10_amd64.deb ...
Unpacking mongod-mongosh (2.5.10) ...
Selecting previously unselected package mongodb-org-shell.
Preparing to unpack .../2-mongodb-org-shell_8.0.16_amd64.deb ...
Unpacking mongodb-org-shell (8.0.16) ...
Selecting previously unselected package mongodb-org-server.
Preparing to unpack .../3-mongodb-org-server_8.0.16_amd64.deb ...
Unpacking mongodb-org-server (8.0.16) ...
Selecting previously unselected package mongodb-org-mongos.
Preparing to unpack .../4-mongodb-org-mongos_8.0.16_amd64.deb ...
Unpacking mongodb-org-mongos (8.0.16) ...
Selecting previously unselected package mongodb-org-database-tools-extra.
Preparing to unpack .../5-mongodb-org-database-tools-extra_8.0.16_amd64.deb ...
Unpacking mongodb-org-database-tools-extra (8.0.16) ...
Selecting previously unselected package mongodb-org-database.
Preparing to unpack .../6-mongodb-org-database_8.0.16_amd64.deb ...
```

```

Unpacking mongodb-org (8.0.16) ...
Setting up mongodb-mongosh (2.1.10) ...
Setting up mongodb-org-audit (8.0.16) ...
Adding user 'mongodb' (UID 129) ...
Adding new user 'mongodb' (UID 129) with group 'nogroup' ...
Not creating home directory '/home/mongodb'.
Adding group 'mongodb' (GID 137) ...
Done.
Adding user 'mongodb' to group 'mongodb' ...
Adding user mongodb to group mongodb
Done.
Setting up mongodb-org-shell (8.0.16) ...
Setting up mongodb-base-tools (100.13.0) ...
Setting up mongodb-org-mongos (8.0.16) ...
Setting up mongodb-org-database-tools-extras (8.0.16) ...
Setting up mongodb-org-database (8.0.16) ...
Setting up mongodb-org-tools (8.0.16) ...
Setting up mongodb-org (8.0.16) ...
Processing triggers for libc-bin (2.19.0-2~1) ...
pi@5G-RedCap: ~$ sudo systemctl start mongod
pi@5G-RedCap: ~$ sudo systemctl status mongod
● mongod.service - MongoDB Database Server
   Loaded: loaded (/lib/systemd/system/mongod.service; disabled; vendor preset: enabled)
   Active: active (running) since Thu 2025-12-04 17:24:12 IST; 35s ago
     Docs: https://docs.mongodb.org/manual
 Main PID: 3492 (mongod)
    Memory: 89.0M
      CPU: 55.9ms
       CGrou...
CGrou...
   CGroup: /system.slice/mongod.service
           └─ 3492 /usr/bin/mongod --config /etc/mongod.conf

Dec 04 17:24:12 5G-RedCap systemd[1]: Started MongoDB Database Server.
Dec 04 17:24:12 5G-RedCap mongod[3492]: {"t": {"$date": "2025-12-04T11:54:12.254Z"}, "s": "I", "c": "CONTROL", "id": 7484500, "ctx": "main", "msg": "Environment variable MONGODB_CONFIG_OVERRIDE set."}
lines 1-12/12 (END)

```

```

p1@5G-RedCap:~/Desktop$ curl -fsSL https://deb.nodesource.com/setup_18.x | sudo -E bash -
[sudo] password for p1:

```

```

2025-12-04 17:28:32 - Installing pre-requisites
Hit:1 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:3 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0 InRelease
Hit:5 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20240203~22.04.1).
ca-certificates set to manually installed.
curl is already the newest version (7.81.0-1ubuntu1.21).
gnupg is already the newest version (2.2.27-3ubuntu2.4).
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 1,510 B of archives.
After this operation, 170 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 apt-transport-https all 2.4.14 [1,510 B]
Fetched 1,510 B in 1s (1,249 B/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 180919 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.4.14_all.deb ...
Unpacking apt-transport-https (2.4.14) ...
Setting up apt-transport-https (2.4.14) ...
Hit:1 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:2 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Get:3 https://deb.nodesource.com/node_18.x nodistro InRelease [12.1 kB]
Hit:4 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease
Get:5 https://deb.nodesource.com/node_18.x nodistro/main amd64 Packages [11.6 kB]
Hit:6 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:7 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0 InRelease
Fetched 23.7 kB in 3s (8,461 B/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.

```

```

2025-12-04 17:28:48 - Repository configured successfully.
2025-12-04 17:28:48 - To install Node.js, run: apt install nodejs -y
2025-12-04 17:28:48 - You can use N|solid Runtime as a node.js alternative
2025-12-04 17:28:48 - To install N|solid Runtime, run: apt install nsolid -y

```

```

p1@5G-RedCap:~/Desktop$ 

```

```
p1@5G-RedCap:~/Desktop$ sudo apt install nodejs
[sudo] password for p1:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  nodejs
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 29.7 MB of archives.
After this operation, 187 MB of additional disk space will be used.
Get:1 https://deb.nodesource.com/node_18.x nodistro/main amd64 nodejs amd64 18.20.8-1nodesource1 [29.7 MB]
Fetched 29.7 MB in 1min 29s (333 kB/s)
Selecting previously unselected package nodejs.
(Reading database ... 180923 files and directories currently installed.)
Preparing to unpack .../nodejs_18.20.8-1nodesource1_amd64.deb ...
Unpacking nodejs (18.20.8-1nodesource1) ...
Setting up nodejs (18.20.8-1nodesource1) ...
Processing triggers for man-db (2.10.2-1) ...
p1@5G-RedCap:~/Desktop$
```

```
p1@5G-RedCap:~/Desktop$ sudo add-apt-repository ppa:open5gs/latest
[sudo] password for p1:
PPA publishes dbgsym, you may need to include 'main/debug' component
Repository: 'deb https://ppa.launchpadcontent.net/open5gs/latest/ubuntu/ jammy main'
Description:
Open5GS is a C-language Open Source implementation of 5G Core and EPC, i.e. the core network of NR/LTE network (Release-17)
More info: https://launchpad.net/~open5gs/+archive/ubuntu/latest
Adding repository.
Press [ENTER] to continue or Ctrl-c to cancel.
Adding deb entry to /etc/apt/sources.list.d/open5gs-ubuntu-latest-jammy.list
Adding disabled deb-src entry to /etc/apt/sources.list.d/open5gs-ubuntu-latest-jammy.list
Adding key to /etc/apt/trusted.gpg.d/open5gs-ubuntu-latest.gpg with fingerprint CA542085D893C03492F35E1EACC46E8E238249B1
Hit:1 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:4 https://deb.nodesource.com/node_18.x nodistro InRelease
Hit:5 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:6 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0 InRelease
Get:7 https://ppa.launchpadcontent.net/open5gs/latest/ubuntu jammy InRelease [24.3 kB]
Get:8 https://ppa.launchpadcontent.net/open5gs/latest/ubuntu jammy/main amd64 Packages [3,348 B]
Get:9 https://ppa.launchpadcontent.net/open5gs/latest/ubuntu jammy/main Translation-en [2,192 B]
Fetched 29.9 kB in 4s (7,967 B/s)
Reading package lists... Done
p1@5G-RedCap:~/Desktop$
```

```
p1@5G-RedCap:~/Desktop$ sudo apt-get install -y software-properties-common
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
software-properties-common is already the newest version (0.99.22.9).
software-properties-common set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

```
p1@5G-RedCap:~/Desktop$ sudo apt-get -y update
Hit:1 https://deb.nodesource.com/node_18.x nodistro InRelease
Hit:2 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:3 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:5 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0 InRelease
Hit:6 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:7 https://ppa.launchpadcontent.net/open5gs/latest/ubuntu jammy InRelease
Reading package lists... Done
```

```
p1@5G-RedCap:~/Desktop$ sudo apt install -y open5gs
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libbson-1.0-0 libmongoc-1.0-0 libmongocrypt0 libscapl libsnappyv5 libtins4.0 open5gs-amf open5gs-ausf open5gs-bsf open5gs-common open5gs-hss open5gs-mme open5gs-nrf
  open5gs-nasf open5gs-pcf open5gs-scp open5gs-sepp open5gs-sgw open5gs-sgwu open5gs-smf open5gs-udm open5gs-udr open5gs-upf
Suggested packages:
  libapt-pkg
The following NEW packages will be installed:
  libbson-1.0-0 libmongoc-1.0-0 libmongocrypt0 libscapl libsnappyv5 libtins4.0 open5gs-amf open5gs-ausf open5gs-bsf open5gs-common open5gs-hss open5gs-mme
  open5gs-nrf open5gs-nasf open5gs-pcf open5gs-scp open5gs-sepp open5gs-sgw open5gs-sgwu open5gs-smf open5gs-udm open5gs-udr open5gs-upf
0 upgraded, 26 newly installed, 0 to remove and 0 not upgraded.
Need to get 5,298 kB of archives.
After this operation, 23.9 MB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 libbson-1.0-0 amd64 1.21.0-1build1 [83.7 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 libmicrohttpd12 amd64 0.9.75-3ubuntu1 [77.6 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy/universe amd64 libmongocrypt0 amd64 1.3.0-1ubuntu1 [93.9 kB]
Get:4 https://ppa.launchpadcontent.net/open5gs/latest/ubuntu jammy/main amd64 open5gs-common amd64 2.7.6-jammy [3,226 kB]
```

```
p1@5G-RedCap:/~$ sudo service open5gs* status
[sudo] password for p1:
● open5gs-sgwcd.service - Open5GS SGW-C Daemon
  Loaded: loaded (/lib/systemd/system/open5gs-sgwcd.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2025-12-04 17:40:19 IST; 1min 41s ago
    Main PID: 6932 (open5gs-sgwcd)
      Tasks: 2 (limit: 4542)
        Memory: 24.5M
          CPU: 65ms
        CGroup: /system.slice/open5gs-sgwcd.service
               └─6932 /usr/bin/open5gs-sgwcd -c /etc/open5gs/sgwcd.yaml

Dec 04 17:40:19 5G-RedCap systemd[1]: Started Open5GS SGW-C Daemon.
Dec 04 17:40:19 5G-RedCap open5gs-sgwcd[6932]: Open5GS daemon v2.7.6
Dec 04 17:40:19 5G-RedCap open5gs-sgwcd[6932]: 12/04 17:40:19.918: [app] INFO: Configuration: '/etc/open5gs/sgwcd.yaml' ('../.lib/app/ogs-init.c:144')
Dec 04 17:40:19 5G-RedCap open5gs-sgwcd[6932]: 12/04 17:40:19.918: [app] INFO: File Logging: '/var/log/open5gs/sgwcd.log' ('../.lib/app/ogs-init.c:147')
Dec 04 17:40:19 5G-RedCap open5gs-sgwcd[6932]: 12/04 17:40:19.994: [gtp] INFO: gtp_server() [127.0.0.3]:2123 ('../.lib/gtp/path.c:30')
Dec 04 17:40:19 5G-RedCap open5gs-sgwcd[6932]: 12/04 17:40:19.995: [pfcpc] INFO: pfcpc_server() [127.0.0.3]:8805 ('../.lib/pfcpc/path.c:30')
Dec 04 17:40:19 5G-RedCap open5gs-sgwcd[6932]: 12/04 17:40:19.998: [app] INFO: SGW-C initialized...done ('../.src/sgwc/app-init.c:31')
Dec 04 17:40:19 5G-RedCap open5gs-sgwcd[6932]: 12/04 17:40:19.998: [sgwc] INFO: PFCP associated [127.0.0.6]:8805 ('../.src/sgwc/pfcpc-sm.c:167')

● open5gs-mmed.service - Open5GS MME Daemon
  Loaded: loaded (/lib/systemd/system/open5gs-mmed.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2025-12-04 17:40:19 IST; 1min 42s ago
    Main PID: 6832 (open5gs-mmed)
      Tasks: 39 (limit: 4542)
        Memory: 7.9M
          CPU: 108ms
        CGroup: /system.slice/open5gs-mmed.service
               └─6832 /usr/bin/open5gs-mmed -c /etc/open5gs/mme.yaml
```

```
Dec 04 17:40:19 5G-RedCap open5gs-mmed[6832]: Open5GS daemon v2.7.6
Dec 04 17:40:19 5G-RedCap open5gs-mmed[6832]: 12/04 17:40:19.440: [app] INFO: Configuration: '/etc/open5gs/mme.yaml' ('../.lib/app/ogs-init.c:144')
Dec 04 17:40:19 5G-RedCap open5gs-mmed[6832]: 12/04 17:40:19.440: [app] INFO: File Logging: '/var/log/open5gs/mme.log' ('../.lib/app/ogs-init.c:147')
Dec 04 17:40:19 5G-RedCap open5gs-mmed[6832]: 12/04 17:40:19.440: [metrics] INFO: metrics_server() [http://127.0.0.2]:9090 ('../.lib/metrics/prometheus/context.c:300')
Dec 04 17:40:19 5G-RedCap open5gs-mmed[6832]: 12/04 17:40:19.471: [app] INFO: Polling freediameter stats every 60000000 usecs ('../.lib/diameter/common/stats.c:77')
Dec 04 17:40:19 5G-RedCap open5gs-mmed[6832]: 12/04 17:40:19.471: [gtp] INFO: gtp_server() [127.0.0.2]:2123 ('../.lib/gtp/path.c:30')
Dec 04 17:40:19 5G-RedCap open5gs-mmed[6832]: 12/04 17:40:19.472: [gtp] INFO: gtp_connect() [127.0.0.3]:2123 ('../.lib/gtp/path.c:60')
Dec 04 17:40:19 5G-RedCap open5gs-mmed[6832]: 12/04 17:40:19.472: [mme] INFO: slap_server() [127.0.0.2]:36412 ('../.src/mme/slap-sctp.c:62')
Dec 04 17:40:19 5G-RedCap open5gs-mmed[6832]: 12/04 17:40:19.472: [sctp] INFO: MME initialize...done ('../.src/mme/app-init.c:33')
Dec 04 17:40:19 5G-RedCap open5gs-mmed[6832]: 12/04 17:40:19.476: [diam] INFO: CONNECTED TO 'hss.localdomain' (SCTP,soc#15): ('../.lib/diameter/common/logger.c:81')

● open5gs-seppd.service - Open5GS SEPP Daemon
  Loaded: loaded (/lib/systemd/system/open5gs-seppd.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2025-12-04 17:40:17 IST; 1min 43s ago
lines 1-43
```

```
p1@5G-RedCap:/~$ sudo apt-get install net-tools
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 204 kB of archives.
After this operation, 819 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 net-tools amd64 1.60+git20181103.0eebece-lubuntu5.4 [204 kB]
Fetched 204 kB in 1s (152 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 186550 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20181103.0eebece-lubuntu5.4_amd64.deb ...
Unpacking net-tools (1.60+git20181103.0eebece-lubuntu5.4) ...
Setting up net-tools (1.60+git20181103.0eebece-lubuntu5.4) ...
Processing triggers for man-db (2.10.2-1) ...
```

```
p1@5G-RedCap:~/Desktop$ ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
        inet 192.168.182.142 netmask 255.255.255.0 broadcast 192.168.182.255
        inet6 fe80::91af:4672:a440:5b69 prefixlen 64 scopeid 0x20<link>
          ether 00:0c:29:44:2e:49 txqueuelen 1000 (Ethernet)
            RX packets 164219 bytes 237171351 (237.1 MB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 16840 bytes 1073536 (1.0 MB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
        inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0x10<host>
          loop txqueuelen 1000 (Local Loopback)
            RX packets 12465 bytes 1302892 (1.3 MB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 12465 bytes 1302892 (1.3 MB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

ogstun: flags=4305<UP,POINTOPOINT,RUNNING,NOARP,MULTICAST> mtu 1400
        inet 10.45.0.1 netmask 255.255.0.0 destination 10.45.0.1
        inet6 2001:db8:cafe::1 prefixlen 48 scopeid 0x0<global>
        inet6 fe80::fca9:c229:66fc:c032 prefixlen 64 scopeid 0x20<link>
          unspec 00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00 txqueuelen 500 (UNSPEC)
            RX packets 0 bytes 0 (0.0 B)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 8 bytes 448 (448.0 B)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

```
p1@5G-RedCap:~/Desktop$ curl -fsSL https://open5gs.org/open5gs/assets/webui/install | sudo -E bash -
[sudo] password for p1:

## Populating apt-get cache...

+ apt-get update
Hit:1 https://deb.nodesource.com/node_18.x nodistro InRelease
Hit:2 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:3 https://repo.mongodb.org/apt/ubuntu jammy/mongodb-org/8.0 InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu jammy InRelease
Hit:5 https://ppa.launchpadcontent.net/open5gs/latest/ubuntu jammy InRelease
Hit:6 http://in.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:7 http://in.archive.ubuntu.com/ubuntu jammy-backports InRelease
Reading package lists... Done

## Download the Open5GS Source Code (v2.7.0)...

+ curl -sLf 'https://github.com/open5gs/open5gs/archive/v2.7.0.tar.gz' | tar zxf -
## Build the Open5GS WebUI...

+ cd ./open5gs-2.7.0/webui && npm clean-install && npm run build
npm warn EBADENGINE Unsupported engine {
npm warn EBADENGINE   package: 'react-jsonschema-form@0.50.1',
npm warn EBADENGINE   required: { node: '>=6', npm: '^2.14.7' },
npm warn EBADENGINE   current: { node: 'v18.20.8', npm: '10.8.2' }
npm warn EBADENGINE }

added 813 packages, and audited 814 packages in 25s

19 packages are looking for funding
  run `npm fund` for details

100 vulnerabilities (8 low, 8 moderate, 41 high, 43 critical)
```

```
> open5gs@2.7.0 build
> next build

> Using external babel configuration
> Location: "/home/p1/Desktop/open5gs-2.7.0/webui/.babelrc"

## Install the Open5GS WebUI...

+ mkdir -p /usr/lib/node_modules
+ mv ./open5gs-2.7.0/webui /usr/lib/node_modules/open5gs
+ chown -R open5gs:open5gs /usr/lib/node_modules/open5gs
+ cat << EOF > /lib/systemd/system/open5gs-webui.service
[Unit]
Description=Open5GS WebUI
Wants=mongod.mongodb.service mongod.service

[Service]
Type=simple
WorkingDirectory=/usr/lib/node_modules/open5gs
Environment=NODE_ENV=production
ExecStart=/usr/bin/node server/index.js
Restart=always
RestartSec=2

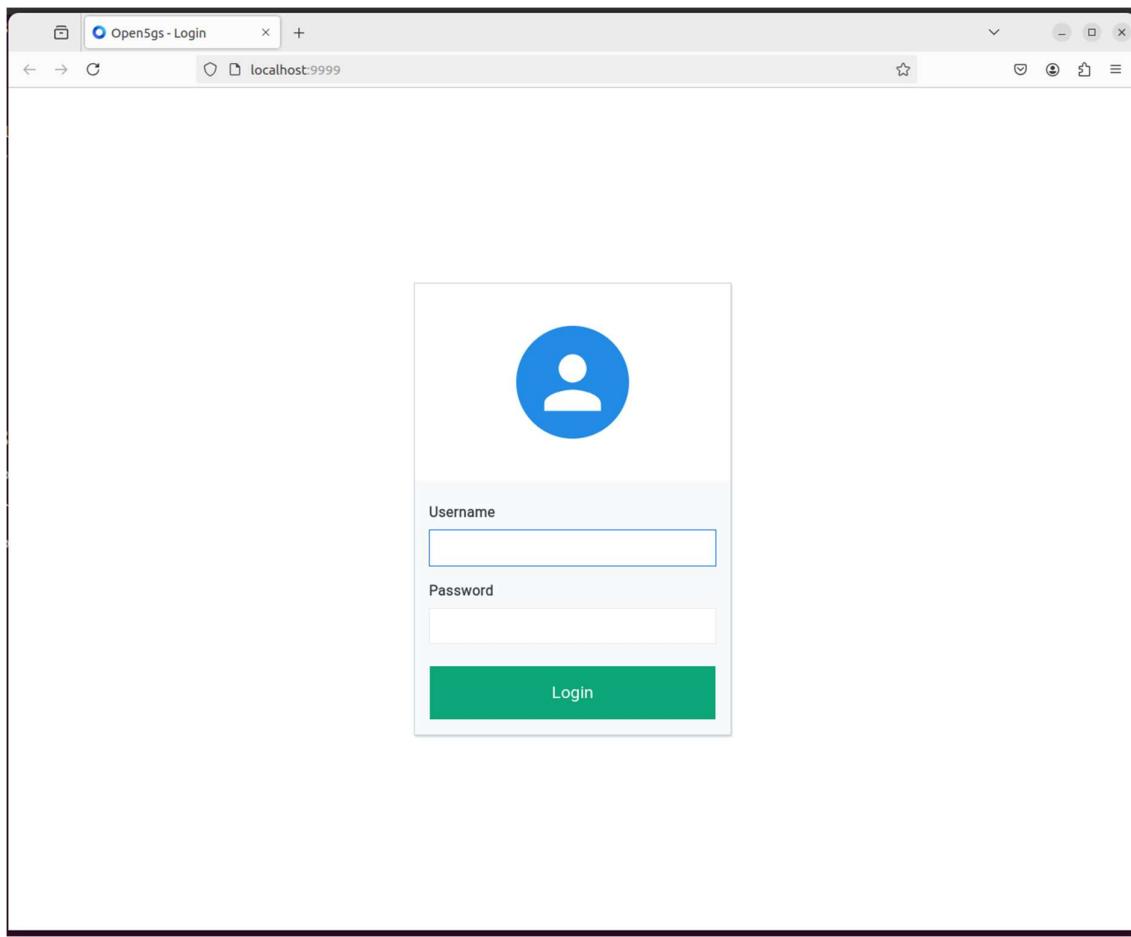
[Install]
WantedBy=multi-user.target
EOF
+ systemctl daemon-reload
+ systemctl enable open5gs-webui
Created symlink /etc/systemd/system/multi-user.target.wants/open5gs-webui.service → /lib/systemd/system/open5gs-webui.service.
+ deb-systemd-invoke start open5gs-webui

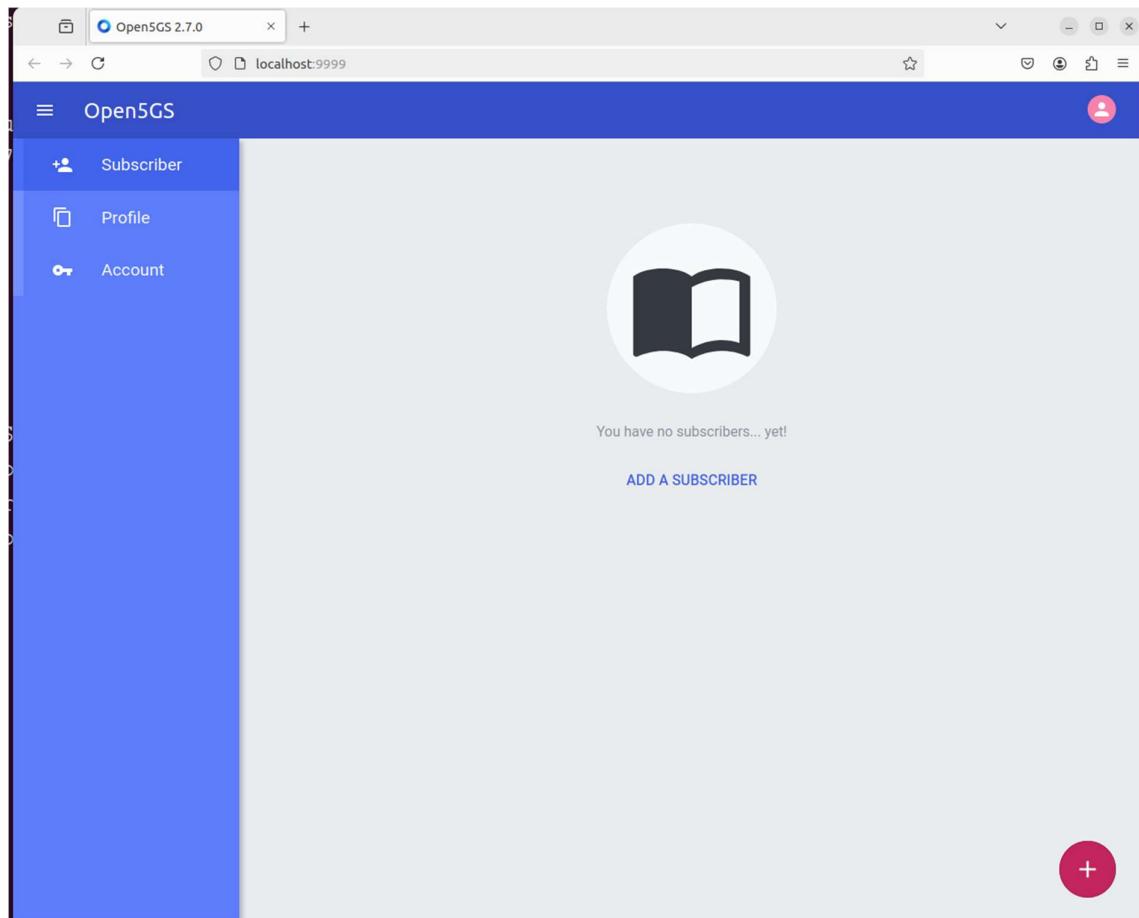
## Default Administrator Account [Username:admin, Password:1423]...

+ mongosh open5gs ./open5gs-2.7.0/docs/assets/webui/mongo-init.js
+ rm -rf ./open5gs-2.7.0
p1@5G-RedCap:~/Desktop$
```

```
p1@5G-RedCap:~/Desktop$ sudo systemctl status open5gs-webui
[sudo] password for p1:
● open5gs-webui.service - Open5GS WebUI
   Loaded: loaded (/lib/systemd/system/open5gs-webui.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2025-12-04 17:56:00 IST; 7min ago
     Main PID: 9009 (node)
        Tasks: 11 (limit: 4542)
       Memory: 46.0M
          CPU: 929ms
        CGroup: /system.slice/open5gs-webui.service
                  └─9009 /usr/bin/node server/index.js

Dec 04 17:56:00 5G-RedCap systemd[1]: Started Open5GS WebUI.
Dec 04 17:56:01 5G-RedCap node[9009]: (node:9009) DeprecationWarning: collection.ensureIndex is deprecated. Use createIndexes instead.
Dec 04 17:56:01 5G-RedCap node[9009]: (Use `node --trace-deprecation ...` to show where the warning was created)
Dec 04 17:56:01 5G-RedCap node[9009]: > Ready on http://localhost:9999
p1@5G-RedCap:~/Desktop$
```





```
p1@5G-RedCap:~/Desktop$ sudo apt install make gcc g++ liblksctp-dev lksctp-tools iproute2
[sudo] password for p1:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
iproute2 is already the newest version (5.15.0-ubuntu2).
iproute2 set to manually installed.
The following additional packages will be installed:
binutils binutils-common binutils-x86_64-linux-gnu g++-11 gcc-11 libasan6 libbinutils libc-dev-bin libc-devtools libbc6-dev libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libgcc-11-dev
liblsm liblsm0 liblsm1-dev libquadmath0 libstdc++-11-dev libtirpc-dev libtsan0 libubsan1 linux-libc-dev manpages-dev rpcsvc-proto
Suggested packages:
liblsm liblsm1 liblsm1-dev libquadmath0 libstdc++-11-dev libtirpc-dev libtsan0 libubsan1 linux-libc-dev lksctp-tools make manpages-dev rpcsvc-proto
The following NEW packages will be installed:
binutils binutils-common binutils-x86_64-linux-gnu g++-11 gcc-11 libasan6 libbinutils libc-dev-bin libc-devtools libbc6-dev libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libgcc-11-dev
liblsm liblsm0 liblsm1-dev libquadmath0 libstdc++-11-dev libtirpc-dev libtsan0 libubsan1 linux-libc-dev manpages-dev rpcsvc-proto
0 upgraded, 31 newly installed, 0 to remove and 0 not upgraded.
Need to get 52.9 MB of archives.
After this operation, 181 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 binutils-common amd64 2.38-4ubuntu2.11 [233 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libbinutils amd64 2.38-4ubuntu2.11 [698 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 liblsm liblsm0 liblsm1-dev libquadmath0 libstdc++-11-dev libtirpc-dev libtsan0 libubsan1 linux-libc-dev manpages-dev rpcsvc-proto
Get:4 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 liblsm liblsm0 liblsm1-dev libquadmath0 libstdc++-11-dev libtirpc-dev libtsan0 libubsan1 linux-libc-dev lksctp-tools make manpages-dev rpcsvc-proto
Get:5 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 liblsm liblsm1-dev libquadmath0 libstdc++-11-dev libtirpc-dev libtsan0 libubsan1 linux-libc-dev manpages-dev rpcsvc-proto
0 upgraded, 31 newly installed, 0 to remove and 0 not upgraded.
Need to get 52.9 MB of archives.
After this operation, 181 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 binutils amd64 2.38-4ubuntu2.11 [2,324 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 binutils-x86_64-linux-gnu amd64 2.38-4ubuntu2.11 [3,200 B]
Get:3 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 liblsm liblsm0 amd64 12.3.0-1ubuntu1-22.04.2 [48.3 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 liblsm liblsm1-dev amd64 12.3.0-1ubuntu1-22.04.2 [30.2 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libasan6 libasan amd64 11.4.0-1ubuntu1-22.04.2 [2,283 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libasan6 libasan1 amd64 12.3.0-1ubuntu1-22.04.2 [1,069 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 liblsm liblsm0 amd64 12.3.0-1ubuntu1-22.04.2 [2,262 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 liblsm liblsm1-dev amd64 12.3.0-1ubuntu1-22.04.2 [2,262 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libasan6 libasan1 amd64 12.3.0-1ubuntu1-22.04.2 [1,069 kB]
Get:10 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libasan6 libasan1 amd64 12.3.0-1ubuntu1-22.04.2 [1,069 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libasan6 libasan1 amd64 12.3.0-1ubuntu1-22.04.2 [1,069 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libasan1 amd64 12.3.0-1ubuntu1-22.04.2 [976 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libquadmath0 libquadmath0 amd64 12.3.0-1ubuntu1-22.04.2 [154 kB]
Get:14 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgcc-11-dev amd64 11.4.0-1ubuntu1-22.04.2 [2,517 kB]
Get:15 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 gcc amd64 4.11.2.0-1ubuntu1 [5,112 B]
Get:16 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libc-dev-bin amd64 2.35-1ubuntu3.11 [20.3 kB]
Get:17 http://in.archive.ubuntu.com/ubuntu jammy-updates/main amd64 linux-libc-dev amd64 5.15.0-163.173 [1,326 kB]
Get:18 http://in.archive.ubuntu.com/ubuntu jammy/main amd64 libcrypt-dev amd64 1:4.4.27-1 [112 kB]
```

```
p1@5G-RedCap:~/Desktop$ sudo snap install cmake --classic
cmake 4.2.0 from Crascit** installed
p1@5G-RedCap:~/Desktop$ sudo apt install git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
git-man liberror-perl
```

```
p1@5G-RedCap:~/Desktop$ git clone https://github.com/aligungr/UERANSIM
Cloning into 'UERANSIM'...
remote: Enumerating objects: 15912, done.
remote: Counting objects: 100% (2745/2745), done.
remote: Compressing objects: 100% (672/672), done.
remote: Total 15912 (delta 2409), reused 2073 (delta 2073), pack-reused 13167 (from 1)
Receiving objects: 100% (15912/15912), 5.12 MiB | 669.00 KiB/s, done.
Resolving deltas: 100% (12619/12619), done.
```

```
p1@5G-RedCap:~/Desktop$ cd UERANSIM/
p1@5G-RedCap:~/Desktop/UERANSIM$ make
rm -fr logs # Old version log files
mkdir -p build
rm -fr build/*
# cmake -DCMAKE_BUILD_TYPE=Debug -G "CodeBlocks - Unix Makefiles" . -B cmake-build-deb
cmake -DCMAKE_BUILD_TYPE=Release -G "CodeBlocks - Unix Makefiles" . -B cmake-build-rel
CMake Deprecation Warning:
  Support for "Extra Generators" like

    CodeBlocks

is deprecated and will be removed from a future version of CMake. IDEs may
use the cmake-file-api(7) to view CMake-generated project build trees.

-- The C compiler identification is GNU 11.4.0
-- The CXX compiler identification is GNU 11.4.0
-- Detecting C compiler ABI info
-- Detecting C compiler ABI info - done
-- Check for working C compiler: /usr/bin/cc - skipped
-- Detecting C compile features
```

```
[100%] Building CXX object src/ue/CMakeFiles/ue.dir/tun/tun.cpp.o
[100%] Building CXX object src/ue/CMakeFiles/ue.dir/types.cpp.o
[100%] Building CXX object src/ue/CMakeFiles/ue.dir/ue.cpp.o
[100%] Linking CXX static library libue.a
gmake[3]: Leaving directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
[100%] Built target ue
gmake[3]: Entering directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
gmake[3]: Leaving directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
gmake[3]: Entering directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
[100%] Building CXX object CMakeFiles/nr-ue.dir/src/ue.cpp.o
[100%] Linking CXX executable nr-ue
gmake[3]: Leaving directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
[100%] Built target nr-ue
gmake[3]: Entering directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
gmake[3]: Leaving directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
gmake[3]: Entering directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
[100%] Building CXX object CMakeFiles/devbnd.dir/src/binder.cpp.o
[100%] Linking CXX shared library libdevbnd.so
gmake[3]: Leaving directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
[100%] Built target devbnd
gmake[3]: Entering directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
gmake[3]: Leaving directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
gmake[3]: Entering directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
[100%] Building CXX object CMakeFiles/nr-cli.dir/src/cli.cpp.o
[100%] Linking CXX executable nr-cli
gmake[3]: Leaving directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
[100%] Built target nr-cli
gmake[2]: Leaving directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
gmake[1]: Leaving directory '/home/p1/Desktop/UERANSIM/cmake-build-release'
cp cmake-build-release/nr-gnb build/
cp cmake-build-release/nr-ue build/
cp cmake-build-release/nr-cli build/
cp cmake-build-release/libdevbnd.so build/
cp tools/nr-binder build/
UERANSIM successfully built.
p1@5G-RedCap:~/Desktop/UERANSIM$
```

```
p1@5G-RedCap:~/Desktop/UERANSIM$ ls
build cmake-build-release CMakeLists.txt config CONTRIBUTING.md LICENSE makefile README.md src tools
p1@5G-RedCap:~/Desktop/UERANSIM$ cd config/
p1@5G-RedCap:~/Desktop/UERANSIM/config$ ls
custom-gnb.yaml custom-ue.yaml free5gc-gnb.yaml free5gc-ue.yaml open5gs-gnb.yaml open5gs-ue.yaml
p1@5G-RedCap:~/Desktop/UERANSIM/config$ ../build/nr-gnb -c open5gs-gnb.yaml
UERANSIM v3.2.7
[2025-12-04 18:33:15.200] [sctp] [info] Trying to establish SCTP connection... (127.0.0.5:38412)
[2025-12-04 18:33:15.202] [sctp] [info] SCTP connection established (127.0.0.5:38412)
[2025-12-04 18:33:15.203] [sctp] [debug] SCTP association setup ascId[9]
[2025-12-04 18:33:15.203] [ngap] [debug] Sending NG Setup Request
[2025-12-04 18:33:15.224] [ngap] [debug] NG Setup Response received
[2025-12-04 18:33:15.224] [ngap] [info] NG Setup procedure is successful
```

```
p1@5G-RedCap:~/Desktop$ sudo service open5gs-amfd status
[sudo] password for p1:
● open5gs-amfd.service - Open5GS AMF Daemon
  Loaded: loaded (/lib/systemd/system/open5gs-amfd.service; enabled; vendor preset: enabled)
    Active: active (running) since Thu 2025-12-04 17:40:13 IST; 55min ago
      Main PID: 5986 (open5gs-amfd)
        Tasks: 2 (limit: 4542)
       Memory: 18.4M
          CPU: 274ms
        CGroup: /system.slice/open5gs-amfd.service
              └─ 5986 /usr/bin/open5gs-amfd -c /etc/open5gs/amf.yaml

Dec 04 17:40:24 5G-RedCap open5gs-amfd[5986]: 12/04 17:40:24.510: [sbi] INFO: Setup NF EndPoint (addr) [127.0.0.12:7777] (./lib/sbi/context.c:2113)
Dec 04 17:40:24 5G-RedCap open5gs-amfd[5986]: 12/04 17:40:24.510: [sbi] INFO: Setup NF EndPoint (addr) [127.0.0.12:7777] (./lib/sbi/context.c:2113)
Dec 04 17:40:24 5G-RedCap open5gs-amfd[5986]: 12/04 17:40:24.958: [sbi] INFO: [3057df02-d10a-41f0-a54e-df97a83elef1] (NRF-notify) NF registered (./lib/sbi/nnrf-handler.c:1140)
Dec 04 17:40:24 5G-RedCap open5gs-amfd[5986]: 12/04 17:40:24.958: [sbi] INFO: [3057df02-d10a-41f0-a54e-df97a83elef1] (NRF-notify) NF Profile updated (type:PCF) (./lib/sbi/nnrf-handler.c:1140)
Dec 04 17:40:24 5G-RedCap open5gs-amfd[5986]: 12/04 17:40:24.958: [sbi] INFO: Setup NF EndPoint(addr) [127.0.0.13:80] (./lib/sbi/context.c:2374)
Dec 04 17:40:24 5G-RedCap open5gs-amfd[5986]: 12/04 17:40:24.958: [sbi] INFO: Setup NF EndPoint (addr) [127.0.0.13:7777] (./lib/sbi/context.c:2113)
Dec 04 18:33:15 5G-RedCap open5gs-amfd[5986]: 12/04 18:33:15.205: [amf] INFO: gNB-N2 accepted(127.0.0.1) in master_sm module (./src/amf/amf-sm.c:894)
Dec 04 18:33:15 5G-RedCap open5gs-amfd[5986]: 12/04 18:33:15.213: [amf] INFO: [Added] Number of gNBs is now 1 (./src/amf/context.c:1277)
Dec 04 18:33:15 5G-RedCap open5gs-amfd[5986]: 12/04 18:33:15.215: [amf] INFO: gNB-N2[127.0.0.1] max_num_of_ostreams : 10 (./src/amf/amf-sm.c:941)
lines 1-20/20 (END)
```

```

p1@5G-RedCap:~/Desktop$ cd /etc/open5gs/
p1@5G-RedCap:/etc/open5gs$ ls
amf.yaml    bsf.yaml   hss.yaml   nrf.yaml   pcf.yaml   scp.yaml   sepp2.yaml   sgwu.yaml   tls        udr.yaml
ausf.yaml   hnet       mme.yaml   nssf.yaml  pcrf.yaml  sepp1.yaml   sgwc.yaml   smf.yaml   udm.yaml   upf.yaml
p1@5G-RedCap:/etc/open5gs$ ls -lrt
total 140
-rw-r--r-- 1 root root  2479 Jul 19 06:23 upf.yaml
-rw-r--r-- 1 root root  4580 Jul 19 06:23 udr.yaml
-rw-r--r-- 1 root root  6478 Jul 19 06:23 udm.yaml
-rw-r--r-- 1 root root 11280 Jul 19 06:23 smf.yaml
-rw-r--r-- 1 root root 1481 Jul 19 06:23 sgwu.yaml
-rw-r--r-- 1 root root 1923 Jul 19 06:23 sgwc.yaml
-rw-r--r-- 1 root root 8142 Jul 19 06:23 sepp2.yaml
-rw-r--r-- 1 root root 7998 Jul 19 06:23 sepp1.yaml
-rw-r--r-- 1 root root 5463 Jul 19 06:23 scp.yaml
-rw-r--r-- 1 root root 4825 Jul 19 06:23 pcrf.yaml
-rw-r--r-- 1 root root 10393 Jul 19 06:23 pcf.yaml
-rw-r--r-- 1 root root 5536 Jul 19 06:23 nssf.yaml
-rw-r--r-- 1 root root 2845 Jul 19 06:23 nrf.yaml
-rw-r--r-- 1 root root 7211 Jul 19 06:23 mme.yaml
-rw-r--r-- 1 root root 485 Jul 19 06:23 hss.yaml
-rw-r--r-- 1 root root 4544 Jul 19 06:23 bsf.yaml
-rw-r--r-- 1 root root 4565 Jul 19 06:23 ausf.yaml
-rw-r--r-- 1 root root 7165 Jul 19 06:23 amf.yaml
drwxr-xr-x 2 root root 4096 Dec  4 17:40 hnet
drwxr-xr-x 2 root root 4096 Dec  4 17:40 tls

```

- The directory contains YAML configuration files for various **5G Core network functions**, such as:
 - UPF (User Plane Function)** → upf.yaml
 - AMF (Access and Mobility Management Function)** → amf.yaml
 - SMF (Session Management Function)** → smf.yaml
 - PCF (Policy Control Function)** → pcf.yaml
 - NSSF (Network Slice Selection Function)** → nssf.yaml
 - HSS (Home Subscriber Server)** → hss.yaml
 - SGWC/SGWU (Serving Gateway Control/User Plane)** → sgwc.yaml, sgwu.yaml

```
p1@5G-RedCap:/etc/open5gs$ grep -i "addr" *.yaml
amf.yaml:      - address: 127.0.0.5
amf.yaml:      - address: 127.0.0.5
amf.yaml:      - address: 127.0.0.5
amf.yaml:#   o Bind to the address on the eth0 and advertise as open5gs-amf.svc.local
amf.yaml:#   o Specify a custom port number 7777 while binding to the given address
amf.yaml:#      - address: amf.localdomain
amf.yaml:#      - address: 127.0.0.5
amf.yaml:#      - address: 127.0.0.5
amf.yaml:#      - address: amf.localdomain
ausf.yaml:      - address: 127.0.0.11
ausf.yaml:#   o Bind to the address on the eth0 and advertise as open5gs-ausf.svc.local
ausf.yaml:#   o Specify a custom port number 7777 while binding to the given address
ausf.yaml:#      - address: ausf.localdomain
ausf.yaml:#      - address: 127.0.0.11
ausf.yaml:#      - address: 127.0.0.11
ausf.yaml:#      - address: ausf.localdomain
ausf.yaml:#      - address: ausf.localdomain
ausf.yaml:#      - address: ausf.localdomain
ausf.yaml:#      - address: ausf.localdomain
ausf.yaml:#      - address: 127.0.0.15
bsf.yaml:      - address: 127.0.0.15
bsf.yaml:#   o Bind to the address on the eth0 and advertise as open5gs-bsf.svc.local
bsf.yaml:#   o Specify a custom port number 7777 while binding to the given address
bsf.yaml:#      - address: bsf.localdomain
bsf.yaml:#      - address: 127.0.0.15
bsf.yaml:#      - address: 127.0.0.15
bsf.yaml:#      - address: bsf.localdomain
bsf.yaml:#      - address: bsf.localdomain
bsf.yaml:#      - address: bsf.localdomain
hss.yaml:      - address: 127.0.0.8
mme.yaml:      - address: 127.0.0.2
mme.yaml:      - address: 127.0.0.2
mme.yaml:      - address: 127.0.0.3
mme.yaml:      - address: 127.0.0.4
mme.yaml:      - address: 127.0.0.2
mme.yaml:#   o Listen on address available in `eth0` interface
```

```
mme.yaml:      - address: 127.0.0.2
mme.yaml:      - address: 127.0.0.2
mme.yaml:          - address: 127.0.0.3
mme.yaml:          - address: 127.0.0.4
mme.yaml:          - address: 127.0.0.2
mme.yaml:#    o Listen on address available in `eth0` interface
mme.yaml:#      - address: 127.0.0.2
mme.yaml:#      - address: ::1
mme.yaml:#          - address: 127.0.0.3
mme.yaml:#          - address: 127.0.2.2
mme.yaml:#          - address: 127.0.0.3
mme.yaml:#          - address: 127.0.2.2
mme.yaml:#          - address: 127.0.0.4
mme.yaml:#          - address: 127.0.0.5
mme.yaml:#          - address: 127.0.0.4
mme.yaml:#          - address: 127.0.2.4
mme.yaml:#          - address: 127.0.0.4
mme.yaml:#          - address: 127.0.2.4
mme.yaml:#          - address:
mme.yaml:#          - address:
mme.yaml:#          - address: msc.open5gs.org # SCTP server address configured on the MSC/VLR
mme.yaml:#          local_address: 127.0.0.2 # SCTP local IP addresses to be bound in the MME
mme.yaml:#      - address:      # SCTP server address configured on the MSC/VLR
mme.yaml:#          local_address: # SCTP local IP addresses to be bound in the MME
nrf.yaml:      - address: 127.0.0.10
nrf.yaml:#    o Bind to the address on the eth0 and advertise as open5gs-nrf.svc.local
nrf.yaml:#    o Specify a custom port number 7777 while binding to the given address
nrf.yaml:#      - address: nrf.locacldomain
nrf.yaml:#      - address: 127.0.0.10
nrf.yaml:#      - address: 127.0.0.10
nrf.yaml:#      - address: nrf.locacldomain
nrf.yaml:#      - address: nrf.locacldomain
nrf.yaml:#      - address: nrf.locacldomain
nssf.yaml:      - address: 127.0.0.14
nssf.yaml:#    o Bind to the address on the eth0 and advertise as open5gs-nssf.svc.local
nssf.yaml:#    o Specify a custom port number 7777 while binding to the given address
nssf.yaml:#      - address: nssf.locacldomain
nssf.yaml:#      - address: 127.0.0.14
nssf.yaml:#      - address: 127.0.0.14
nssf.yaml:#      - address: nssf.locacldomain
nssf.yaml:#      - address: nssf.locacldomain
nssf.yaml:#      - address: nssf.locacldomain
pcf.yaml:      - address: 127.0.0.13
pcf.yaml:      - address: 127.0.0.13
```

```
pcf.yaml:#   o Bind to the address on the eth0 and advertise as open5gs-pcf.svc.local
pcf.yaml:#   o Specify a custom port number 7777 while binding to the given address
pcf.yaml:#       - address: pcf.localdomain
pcf.yaml:#       - address: 127.0.0.13
pcf.yaml:#       - address: 127.0.0.13
pcf.yaml:#       - address: pcf.localdomain
pcf.yaml:#       - address: pcf.localdomain
pcf.yaml:#       - address: pcf.localdomain
pcrf.yaml:    - address: 127.0.0.9
scp.yaml:     - address: 127.0.0.200
scp.yaml:#   o Bind to the address on the eth0 and advertise as open5gs-scp.svc.local
scp.yaml:#   o Specify a custom port number 7777 while binding to the given address
scp.yaml:#       - address: scp.localdomain
scp.yaml:#       - address: 127.0.0.200
scp.yaml:#       - address: 127.0.0.200
scp.yaml:#       - address: scp.localdomain
scp.yaml:#       - address: scp.localdomain
scp.yaml:#       - address: scp.localdomain
sep1.yaml:    - address: 127.0.1.250
sep1.yaml:    address: 127.0.1.251
sep1.yaml:    address: 127.0.1.252
sep1.yaml:#    - address: 127.0.1.250
sep1.yaml:#    - address: 127.0.1.250
sep1.yaml:#    - address: 127.0.1.251
sep1.yaml:#    - address: 127.0.1.251
sep1.yaml:#    - address: 127.0.1.251
sep1.yaml:#    - address: 127.0.1.252
sep1.yaml:#    - address: 127.0.1.250
sep1.yaml:#    - address: 127.0.1.251
sep1.yaml:#    - address: 127.0.1.250
sep1.yaml:#    - address: 127.0.1.251
sep1.yaml:#    - address: 127.0.1.250
sep1.yaml:#    - address: 127.0.1.251
sep1.yaml:#    - address: 127.0.1.252
sep1.yaml:#    - address: 127.0.1.250
sep1.yaml:#    - address: 127.0.1.251
sep1.yaml:#    - address: 127.0.1.252
sep2.yaml:    - address: 127.0.2.250
```

```
sepp2.yaml:#      address: 127.0.2.251
sepp2.yaml:#      - address: 127.0.2.250
sepp2.yaml:#          address: 127.0.2.251
sepp2.yaml:#              address: 127.0.2.252
sepp2.yaml:#      - address: 127.0.2.250
sepp2.yaml:#          address: 127.0.2.251
sepp2.yaml:#              address: 127.0.2.252
sgwc.yaml:      - address: 127.0.0.3
sgwc.yaml:      - address: 127.0.0.3
sgwc.yaml:          - address: 127.0.0.6
sgwc.yaml:#      - address: 127.0.0.3
sgwc.yaml:#      - address: fd69:f21d:873c:fa::2
sgwc.yaml:#  o Override PFCP address to be advertised to SGW-U in PFCP association
sgwc.yaml:#      - address: 127.0.0.6
sgwc.yaml:#      - address: 127.0.0.12
sgwc.yaml:#          - address: 127.0.0.6
sgwc.yaml:#          - address: 127.0.0.12
sgwc.yaml:#          - address: 127.0.0.6
sgwc.yaml:#          - address: 127.0.0.12
sgwu.yaml:      - address: 127.0.0.6
sgwu.yaml:#      - address: 127.0.0.3
sgwu.yaml:#      - address: 127.0.0.6
sgwu.yaml:#  o Override PFCP address to be advertised to SGW-C in PFCP association
sgwu.yaml:#  o Override SGW-U GTP-U address to be advertised inside S1AP messages
sgwu.yaml:#      - address: 127.0.0.6
sgwu.yaml:#      - address: 127.0.10.4
smf.yaml:      - address: 127.0.0.4
smf.yaml:      - address: 127.0.0.4
smf.yaml:          - address: 127.0.0.7
smf.yaml:          - address: 127.0.0.4
smf.yaml:          - address: 127.0.0.4
smf.yaml:          - address: 127.0.0.4
smf.yaml:#  o Bind to the address on the eth0 and advertise as open5gs-smf.svc.local
smf.yaml:#  o Specify a custom port number 7777 while binding to the given address
smf.yaml:#      - address: smf.localdomain
smf.yaml:#      - address: 127.0.0.4
smf.yaml:#      - address: 127.0.0.4
smf.yaml:#      - address: smf.localdomain
smf.yaml:#      - address: smf.localdomain
smf.yaml:#      - address: smf.localdomain
smf.yaml:#  o Override PFCP address to be advertised to UPF in PFCP association
smf.yaml:#      - address: 127.0.0.7
```

```

smf.yaml:      - address: 127.0.0.4
smf.yaml:      - address: 127.0.0.4
smf.yaml:      - address: 127.0.0.4
smf.yaml:#   o Bind to the address on the eth0 and advertise as open5gs-smf.svc.local
smf.yaml:#   o Specify a custom port number 7777 while binding to the given address
smf.yaml:#       - address: smf.localdomain
smf.yaml:#       - address: 127.0.0.4
smf.yaml:#       - address: 127.0.0.4
smf.yaml:#       - address: smf.localdomain
smf.yaml:#       - address: smf.localdomain
smf.yaml:#       - address: smf.localdomain
smf.yaml:#   o Override PFCP address to be advertised to UPF in PFCP association
smf.yaml:#       - address: 127.0.0.7
smf.yaml:#       - address: 127.0.0.12
smf.yaml:#       - address: 127.0.0.7
smf.yaml:#       - address: 127.0.0.12
smf.yaml:#       - address: 127.0.0.7
smf.yaml:#       - address: 127.0.0.12
smf.yaml:#       - address: 127.0.0.4
smf.yaml:#       - address: fd69:f21d:873c:fa::3
smf.yaml:#       - address: 127.0.0.4
smf.yaml:#       - address: ::1
udm.yaml:      - address: 127.0.0.12
udm.yaml:#   o Bind to the address on the eth0 and advertise as open5gs-udm.svc.local
udm.yaml:#   o Specify a custom port number 7777 while binding to the given address
udm.yaml:#       - address: udm.localdomain
udm.yaml:#       - address: 127.0.0.12
udm.yaml:#       - address: 127.0.0.12
udm.yaml:#       - address: udm.localdomain
udm.yaml:#       - address: udm.localdomain
udm.yaml:#       - address: udm.localdomain
udm.yaml:#       - address: 127.0.0.20
udr.yaml:#   o Bind to the address on the eth0 and advertise as open5gs-udr.svc.local
udr.yaml:#   o Specify a custom port number 7777 while binding to the given address
udr.yaml:#       - address: udr.localdomain
udr.yaml:#       - address: 127.0.0.20
udr.yaml:#       - address: 127.0.0.20
udr.yaml:#       - address: udr.localdomain
udr.yaml:#       - address: udr.localdomain
udr.yaml:#       - address: udr.localdomain
upf.yaml:      - address: 127.0.0.7
upf.yaml:#       - address: 127.0.0.4
upf.yaml:      - address: 127.0.0.7

upf.yaml:      - address: 127.0.0.7
upf.yaml:#   o Override PFCP address to be advertised to SMF in PFCP association
upf.yaml:#   o Override SGW-U GTP-U address to be advertised inside S1AP messages
upf.yaml:#       - address:
upf.yaml:#           - address: 127.0.10.4
upf.yaml:# $ sudo ip addr add 10.45.0.1/16 dev ogstun
upf.yaml:# $ sudo ip addr add 2001:db8:cafe::1/48 dev ogstun2
upf.yaml:# $ sudo ip addr add 10.46.0.1/16 dev ogstun3
upf.yaml:# $ sudo ip addr add 2001:db8:babe::1/48 dev ogstun3

```

Show Applications **idCap**: /etc/open5gs\$

Checking the contents of amr.yaml

1. Logger Configuration

- **Log File Path:** /var/log/open5gs/amf.log → Logs related to AMF are stored here.
- **Logging Levels:** Can be set to different levels like fatal, error, warn, info, debug, or trace (default: info).

```
logger:  
  file:  
    path: /var/log/open5gs/amf.log
```

2. Global Settings

- **Max UE (User Equipment):** 1024 devices can be handled (adjustable based on memory).
- **Max Peer Connections:** 64 peers.

```
global:  
  max:  
    ue: 1024 # The number of UE can be increased depending on memory size.
```

3. AMF Configuration

SBI (Service-Based Interface) Configuration

- **SBI Server Address:** 127.0.0.5 (localhost).
- **SBI Port:** 7777 (used for communication with other 5GC components).

```
amf:  
  sbi:  
    server:  
      - address: 127.0.0.5  
        port: 7777
```

Client Configuration (Commented Out)

- **NRF (Network Repository Function) & SCP (Service Communication Proxy):** These are commented out, meaning AMF is not currently registering itself with an NRF or SCP.

```
client:  
#     nrf:  
#         - uri: http://127.0.0.10:7777  
scp:  
    - uri: http://127.0.0.200:7777
```

4. NGAP (Next Generation Application Protocol) Server

- **NGAP Server:** Used to handle signalling between gNB (5G base station) and AMF.
- **IP Address:** 127.0.0.5.

```
ngap:  
server:  
    - address: 127.0.0.5
```

5. Metrics Server

- **Metrics Server Address:** 127.0.0.5
- **Port:** 9090 (used for monitoring).

```
metrics:  
server:  
    - address: 127.0.0.5  
    port: 9090
```

6. GUAMI (Globally Unique AMF Identifier)

- **PLMN ID (Public Land Mobile Network):**
 - **MCC (Mobile Country Code):** 999 (Test network).
 - **MNC (Mobile Network Code):** 70 (Test network).

6. GUAMI (Globally Unique AMF Identifier)

- **PLMN ID (Public Land Mobile Network):**
 - **MCC (Mobile Country Code):** 999 (Test network).
 - **MNC (Mobile Network Code):** 70 (Test network).
- **AMF ID:** Identifies the AMF region and set.

```
guami:  
  - plmn_id:  
    mcc: 999  
    mnc: 70  
    amf_id:  
      region: 2  
      set: 1
```

7. TAI (Tracking Area Identifier)

- **PLMN ID:** Same as GUAMI.
- **TAC (Tracking Area Code):** 1 (Defines the coverage area for mobility management).

```
tai:  
  - plmn_id:  
    mcc: 999  
    mnc: 70  
    tac: 1
```

8. Supported PLMNs

- **Supported PLMN:** AMF supports the PLMN with MCC 999 and MNC 70.

```
plmn_support:  
  - plmn_id:  
    mcc: 999  
    mnc: 70
```

- This is the **AMF configuration file** for Open5GS.
- **AMF handles mobility management and NAS signalling in a 5G core network.**
- It listens on 127.0.0.5:7777 and interacts with NGAP and metrics services.
- It is configured for a **test PLMN (MCC: 999, MNC: 70)**.

```
p1@5G-RedCap:/etc/open5gs$ more amf.yaml
logger:
  file:
    path: /var/log/open5gs/amf.log
#  level: info  # fatal|error|warn|info(default)|debug|trace

global:
  max:
    ue: 1024 # The number of UE can be increased depending on memory size.
#    peer: 64

amf:
  sbi:
    server:
      - address: 127.0.0.5
        port: 7777
    client:
#      nrf:
#        - uri: http://127.0.0.10:7777
      scp:
        - uri: http://127.0.0.200:7777
  ngap:
    server:
      - address: 127.0.0.5
  metrics:
    server:
      - address: 127.0.0.5
        port: 9090
  guami:
    - plmn_id:
        mcc: 999
        mnc: 70
    amf_id:
      region: 2
      set: 1
  tai:
    - plmn_id:
        mcc: 999
        mnc: 70
```

```
p1@5G-RedCap: $ cd Desktop/
p1@5G-RedCap:~/Desktop$ cd UERANSIM/
p1@5G-RedCap:~/Desktop/UERANSIM$ cd config
p1@5G-RedCap:~/Desktop/UERANSIM/config$ ls
custom-gnb.yaml  custom-ue.yaml  free5gc-gnb.yaml  free5gc-ue.yaml  open5gs-gnb.yaml  open5gs-ue.yaml
```

```

p1@5G-RedCap:~/Desktop/UERANSIM/config$ cp open5gs-gnb.yaml gnb2.yaml
p1@5G-RedCap:~/Desktop/UERANSIM/config$ cp open5gs-ue.yaml ue2.yaml
p1@5G-RedCap:~/Desktop/UERANSIM/config$ ls -lrt
total 32
-rw-rw-r-- 1 p1 p1 2027 Dec  4 18:23 open5gs-ue.yaml
-rw-rw-r-- 1 p1 p1  784 Dec  4 18:23 open5gs-gnb.yaml
-rw-rw-r-- 1 p1 p1 2067 Dec  4 18:23 free5gc-ue.yaml
-rw-rw-r-- 1 p1 p1  803 Dec  4 18:23 free5gc-gnb.yaml
-rw-rw-r-- 1 p1 p1 2046 Dec  4 18:23 custom-ue.yaml
-rw-rw-r-- 1 p1 p1  794 Dec  4 18:23 custom-gnb.yaml
-rw-rw-r-- 1 p1 p1  784 Dec  4 18:51 gnb2.yaml
-rw-rw-r-- 1 p1 p1 2027 Dec  4 18:52 ue2.yaml
p1@5G-RedCap:~/Desktop/UERANSIM/config$ █

```

gnb2.yaml

~/Desktop/UERANSIM/config

Save

gnb2.yaml ue2.yaml

```

1 mcc: '999'          # Mobile Country Code value
2 mnc: '70'            # Mobile Network Code value (2 or 3 digits)
3
4 nci: '0x000000010'   # NR Cell Identity (36-bit)
5 idLength: 32         # NR gNB ID length in bits [22...32]
6 tac: 1               # Tracking Area Code
7
8 linkIp: 127.0.0.1    # gNB's local IP address for Radio Link Simulation (Usually same with local IP)
9 ngapIp: 127.0.0.1    # gNB's local IP address for N2 Interface (Usually same with local IP)
10 gtpIp: 127.0.0.1     # gNB's local IP address for N3 Interface (Usually same with local IP)
11
12 # List of AMF address information
13 amfConfigs:
14   - address: 127.0.0.5
15     port: 38412
16
17 # List of supported S-NSSAIs by this gNB
18 slices:
19   - sst: 1
20
21 # Indicates whether or not SCTP stream number errors should be ignored.
22 ignoreStreamIds: true

```

YAML Tab Width: 8 Ln 1, Col 1 INS

The screenshot shows a YAML editor window with two tabs: "gnb2.yaml" and "ue2.yaml". The "gnb2.yaml" tab is active, displaying the following configuration:

```
gnb2.yaml
~/Desktop/UERANSIM/config

1 mcc: '999'          # Mobile Country Code value
2 mnc: '70'            # Mobile Network Code value (2 or 3 digits)
3
4 nci: '0x000000010'   # NR Cell Identity (36-bit)
5 idLength: 32         # NR gNB ID length in bits [22...32]
6 tac: 1                # Tracking Area Code
7
8 linkIp: 127.0.0.201  # gNB's local IP address for Radio Link Simulation (Usually same with local IP)
9 ngapIp: 127.0.0.200  # gNB's local IP address for N2 Interface (Usually same with local IP)
10 gtpIp: 127.0.0.100| # gNB's local IP address for N3 Interface (Usually same with local IP)
11
12 # List of AMF address information
13 amfConfigs:
14   - address: 127.0.0.5
15     port: 38412
16
17 # List of supported S-NSSAI by this gNB
18 slices:
19   - sst: 1
20
21 # Indicates whether or not SCTP stream number errors should be ignored.
22 ignoreStreamIds: true
```

The "gtpIp" line is highlighted in red, indicating an error or warning. The status bar at the bottom shows "Saving file "/home/p1/Desktop/UERANSIM/config/gnb2.yaml"..." and "YAML Tab Width: 8 Ln 10, Col 19 INS".

The Wireshark Network Analyzer

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Apply a display filter ... <Ctrl-/>

Welcome to Wireshark

Capture

...using this filter: Enter a capture filter ... All interfaces shown

ens33	
ogstun	
any	
Loopback: lo	
bluetooth-monitor	
nflog	
nfqueue	
dbus-system	
dbus-session	
(Cisco remote capture: ciscodump)	
(DisplayPort AUX channel monitor capture: dpauxmon)	
(Random packet generator: randpkt)	
(systemd Journal Export: sdjournal)	
(SSH remote capture: sshdump)	
(UDP Listener remote capture: udpdump)	

Learn

User's Guide · Wiki · Questions and Answers · Mailing Lists

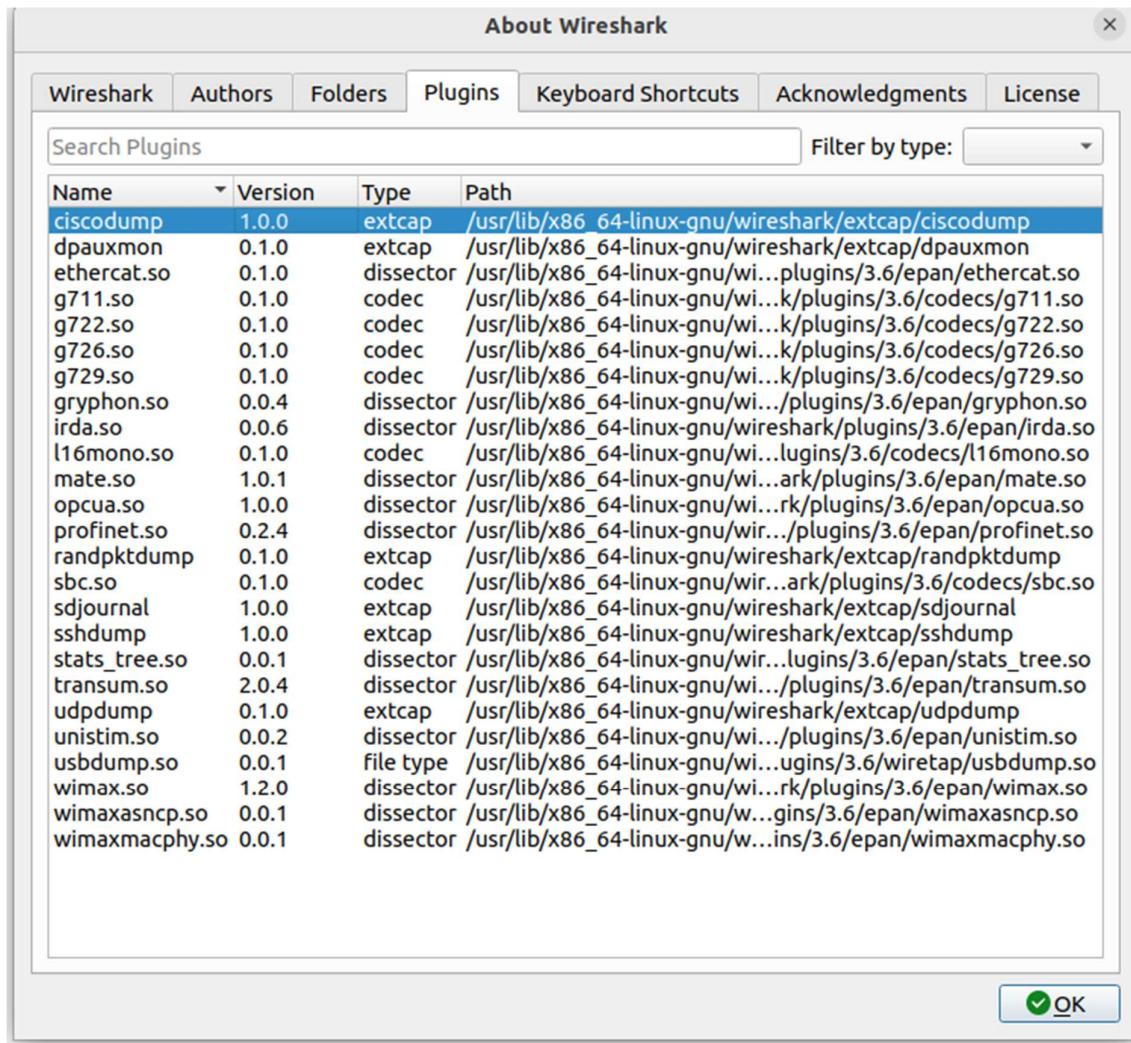
You are running Wireshark 3.6.2 (Git v3.6.2 packaged as 3.6.2-2).

Ready to load or capture No Packets Profile: Default

ip.addr == 127.0.0.5

No.	Time	Source	Destination	Protocol	Length	Info
5	0.574468691	127.0.0.5	127.0.0.1	SCTP	106	HEARTBEAT
6	0.574558016	127.0.0.1	127.0.0.5	SCTP	106	HEARTBEAT_ACK
45	5.182272834	127.0.0.5	127.0.0.100	SCTP	106	HEARTBEAT
46	5.182330149	127.0.0.100	127.0.0.5	SCTP	106	HEARTBEAT_ACK
81	7.231268502	127.0.0.5	127.0.0.1	SCTP	106	HEARTBEAT
82	7.231396735	127.0.0.1	127.0.0.5	SCTP	106	HEARTBEAT_ACK
205	11.326344864	127.0.0.5	127.0.0.100	SCTP	106	HEARTBEAT
206	11.326894908	127.0.0.100	127.0.0.5	SCTP	106	HEARTBEAT_ACK

```
p1@5G-RedCap:~/Desktop/UERANSIM/config$ ./build/nr-gnb -c gnb2.yaml
UERANSIM v3.2.7
[2025-12-04 19:18:30.101] [sctp] [info] Trying to establish SCTP connection... (127.0.0.5:38412)
[2025-12-04 19:18:30.104] [sctp] [info] SCTP connection established (127.0.0.5:38412)
[2025-12-04 19:18:30.104] [sctp] [debug] SCTP association setup ascId[11]
[2025-12-04 19:18:30.104] [ngap] [debug] Sending NG Setup Request
[2025-12-04 19:18:30.112] [ngap] [debug] NG Setup Response received
[2025-12-04 19:18:30.112] [ngap] [info] NG Setup procedure is successful
```

```
p1@5G-RedCap:/usr/lib/x86_64-linux-gnu/wireshark/plugins$ sudo cp -R ~/Desktop/RLS-wireshark-dissector/ RLS-wireshark-dissector
p1@5G-RedCap:/usr/lib/x86_64-linux-gnu/wireshark/plugins$ ls
3.6 RLS-wireshark-dissector
p1@5G-RedCap:/usr/lib/x86_64-linux-gnu/wireshark/plugins$ ls -lrt
total 8
drwxr-xr-x 5 root root 4096 Dec  4 19:01 3.6
drwxr-xr-x 6 root root 4096 Dec  4 19:34 RLS-wireshark-dissector
p1@5G-RedCap:/usr/lib/x86_64-linux-gnu/wireshark/plugins$
```

Create Subscriber

Subscriber Configuration

IMSI*

* is required



Subscriber Key (K)*

465B5CE8 B199B49F AA5F0A2E E238A6BC

Authentication Management Field (AMF)*

8000

USIM Type

OPc

Operator Key (OPc/OP)*

E8ED289D EBA952E4 283B54E8 8E6183CA

UE-AMBR Downlink*

1

Unit

Gbps

UE-AMBR Uplink*

1

Unit

Gbps

[CANCEL](#) [SAVE](#)

[Open](#) [New](#)

```

1 # IMSI number of the UE. IMSI = [MCC|MNC|MSISDN] (In total 15 digits)
2 supi: 'imsi-999700000000001'
3 # Mobile Country Code value of HPLMN
4 mcc: '999'
5 # Mobile Network Code value of HPLMN (2 or 3 digits)
6 mnc: '70'
7 # SUCI Protection Scheme : 0 for Null-scheme, 1 for Profile A and 2 for Profile B
8 protectionScheme: 0
9 # Home Network Public Key for protecting with SUCI Profile A
10 homeNetworkPublicKey: '5a8d38864820197c3394b92613b20b91633cbd897119273bf8e4a6f4eec0a650'
11 # Home Network Public Key ID for protecting with SUCI Profile A
12 homeNetworkPublicKeyId: 1
13 # Routing Indicator
14 routingIndicator: '0000'
15
16 # Permanent subscription key
17 key: '465B5CE8B199B49FAA5F0A2EE238A6BC'
18 # Operator code (OP or OPC) of the UE
19 op: 'E8ED289DEBA952E4283B54E88E6183CA'
20 # This value specifies the OP type and it can be either 'OP' or 'OPC'
21 opType: 'OPC'
22 # Authentication Management Field (AMF) value
23 amf: '8000'
24 # IMEI number of the device. It is used if no SUPI is provided
25 imei: '356938035643803'
26 # IMEISV number of the device. It is used if no SUPI and IMEI is provided
27 imeisv: '4370816125816151'
28
29 # Network mask used for the UE's TUN interface to define the subnet size
30 tunNetmask: '255.255.255.0'
31

```

OpenSGS 2.7.0

localhost:9999

OpenSGS

- Subscriber
- Profile
- Account

99970000000001

gnb2.yaml

```

1 # MCC value
2 # MNC value
3 # Cell ID
4 # TAC
5 # Length of TAC
6 # Tracking Area Code
7 # S-TMSI
8 # gNB's local IP address for Radio Link Simulation (Usually same with local IP)
9 # gNB's local IP address for NG Interface (Usually same with local IP)
10 # gNB's local IP address
11 # List of AMF address information
12 # address
13 # port
14 # List of supported 3-MSCs by this gNB
15 # Allocated
16 # Port
17 # Indicates whether or not SCTP stream number errors should be ignored.
18 ignoreStreamId: true

```

ue2.yaml

```

1 # IMSI number of the UE. IMSI = [MCC|MNC|MSISDN] (In total 15 digits)
2 supi: 'imsi-999700000000001'
3 # Mobile Country Code value of HPLMN
4 mcc: '999'
5 # Mobile Network Code value of HPLMN (2 or 3 digits)
6 mnc: '70'
7 # SUCI Protection Scheme : 0 for Null-scheme, 1 for Profile A and 2 for Profile B
8 protectionScheme: 0
9 # Home Network Public Key for protecting with SUCI Profile A
10 homeNetworkPublicKey: '5a8d38864820197c3394b92613b20b91633cbd897119273bf8e4a6f4eec0a650'
11 # Home Network Public Key ID for protecting with SUCI Profile A
12 homeNetworkPublicKeyId: 1
13 # Routing Indicator
14 routingIndicator: '0000'
15
16 # Permanent subscription key
17 key: '465B5CE8B199B49FAA5F0A2EE238A6BC'
18 # Operator code (OP or OPC) of the UE
19 op: 'E8ED289DDEBA952E4283B54E88E6183CA'
20 # This value specifies the OP type and it can be either 'OP' or 'OPC'
21 opType: 'OPC'
22 # Authentication Management Field (AMF) value
23 amf: '8000'
24 # IMEI number of the device. It is used if no SUPI is provided
25 imei: '356938035643803'
26 # IMEISV number of the device. It is used if no SUPI and IMEI is provided
27 imeisv: '4370816125816151'
28
29 # Network mask used for the UE's TUN interface to define the subnet size
30 tunNetmask: '255.255.255.0'
31
32 # List of gNB IP addresses for Radio Link Simulation
33 gnbSearchList:
34 - 127.0.0.201
35
36 # UAC Access Identities Configuration
37 uacAic:
38   mps: false
39   mcs: false

```