Lab 2: Deploying a 3rd UE

In this lab, participants will deploy a third User Equipment (UE) that connects to an existing 5G slice. This exercise focuses on configuring slice-related parameters and verifying connectivity. By the end of this lab, participants will understand how to add a new UE, configure it for a specific slice, and observe its connectivity through the 5G core components.

Background - Understanding SNSSAI

Single Network Slice Selection Assistance Information (S-NSSAI) is used to identify and select the appropriate network slice for a session. It consists of two key components:

- Slice/Service Type (SST)
- Slice Differentiator (SD)

How S-NSSAI Works

- When a UE initiates a connection, it includes S-NSSAI information in the initial signaling message (e.g., registration request).
- The network processes the provided S-NSSAI, matches it to available slice instances, and selects the most suitable slice based on the UE's requirements.

Configure Slice Information for the 3rd UE

Exercise: Define slice parameters for UE3

Based on your understanding of the core, fill out the details such as `SST`, `SD` and `DNN/APN` below for the 3rd subscriber to connect to `Slice 1`.

Subscriber 3

```
IMSI: 001010000000003
Key: 465B5CE8B199B49FAA5F0A2EE238A6BD
OPC: E8ED289DEBA952E4283B54E88E6183CB
SST: ?
SD: ?
DNN/APN: ?
Type: ipv4
```

Next, open the Open5GS WebUI (http://localhost:30300) and add a new subscriber with the details specified above.

Deploy UE3 using UERANSIM (1/2)

Deploy UE3 using UERANSIM. We will start by uncommenting UE3 in the UERANSIM configuration files to enable its deployment.

Exercise: Enable UE3 in UERANSIM Deployment

1. Open the `kustomization.yaml` file located in `ueransim/ueransim-ue/`.
2. Uncomment the ue3 entry in the resources section to enable its deployment.

```
resources:
  - ue1
  - ue2
  # - ue3
```

3. Don't forget to save the file after this change.

Deploy UE3 using UERANSIM (2/2)

Open the `configmap.yaml` for UE3 (located in `ueransim/ueransim-ue/ue3`), and check that the `Key` and `OPC` match the values used when adding UE3 to the core in the WebUI.

Redeploy `ueransim-ue` as shown below.

```
kubectl apply -k ueransim/ueransim-ue -n open5gs
```

Ensure that UE3 is deployed using the `kubectl get pods -n open5gs` command.

Check Deployment and Connectivity

1. Verify UE3 Deployment: Confirm that a PDU session is established by checking UE3 logs.
2. Test connectivity: Ping `google.ca` from UE1 and UE3 and observe if both UEs' traffic appears in UPF1 logs.

Question: Do you see pings from both UE1 and UE3 reaching UPF1?

Next Steps

Congratulations! This concludes the morning session of Day 1!

You've successfully done the following:

- Learned how the core is configured.
- Learned how to add subscribers to specific slices.

What's Next?

In the afternoon session, we will dive into **network slice monitoring** with Monarch.