*If this is your First-Time-Use of MAPS™ LTE X2 application, then we recommend you follow all the steps explained in MAPS-LTE-X2-Quick-Install-Guide to install MAPS™ LTE X2 application before proceeding with the steps below.*

## Verification

Functional verification of MAPS-LTE X2 application requires a system with 2 NIC cards for testing. MAPS-LTE X2 is configured as **Source eNodeB (Evolved Node B)** on one NIC and as **Target eNodeB (Evolved Node B)** on the other.

Note down the IP address of NIC1 and NIC2, in this example the IP addresses used and configured are:
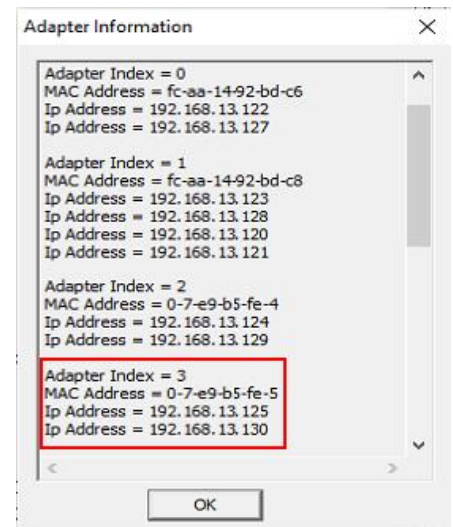- NIC1 IP address is 192.xx.xx.120, and configured as Source eNodeB
- NIC2 IP address is 192.xx.xx.125, and configured as Target eNodeB

*\*Note:* In this test scenario, we have configured MAPS™ LTE X2 as Source eNodeB generating calls and Target eNodeB to receive calls.
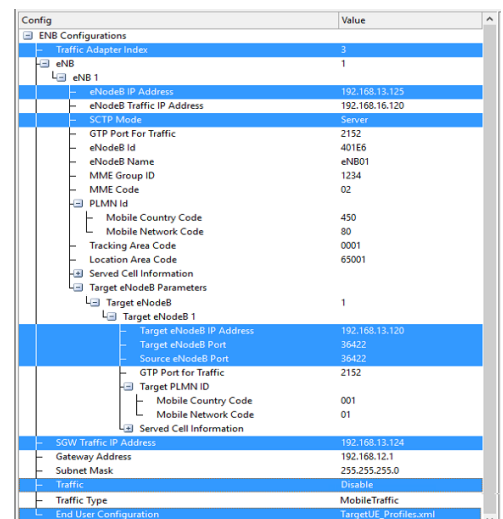
## First MAPS™ LTE X2 (GUI) – (Target eNodeB)

- Right-click on the **MAPS-LTEX2_64** application using shortcut icon created on the desktop and select **'Run as Administrator'**. This instance of MAPS™ is configured for *Call Reception.*

- Once the **MAPS-LTEX2** instance is invoked, by default, **Testbed Setup** window is displayed. Click 📁 icon and select **Target_eNB** configuration file. Verify and validate the following parameter values:
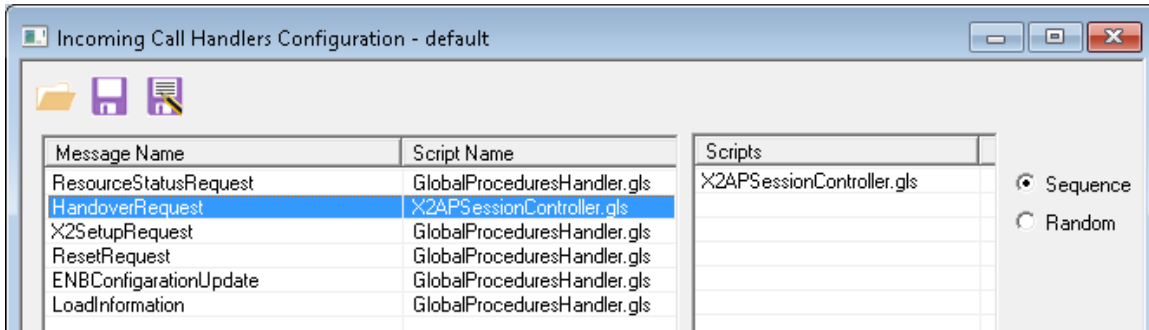
  

  - The **Display Adapter Info** option from the **Help** menu displays all the network adapters available in the system. Choose and set the **Adapter Index** value displayed against the IP address in use.

  - Set **eNodeB IP Address** to 192.xx.xx.125 (NIC2 IP address)

  - Set SCTP Mode to Server

  - Set **Target eNodeB IP Address** to 192.xx.xx.120 (NIC1 IP address)

  - By default, **Target eNodeB Port** is set to **36422**

  - By default, **Source eNodeB Port** is set to **36422**

  - Scroll down and set Traffic = Disabled

  - By default, **End User Configuration** is set to **TargetUE_Profiles.xml**
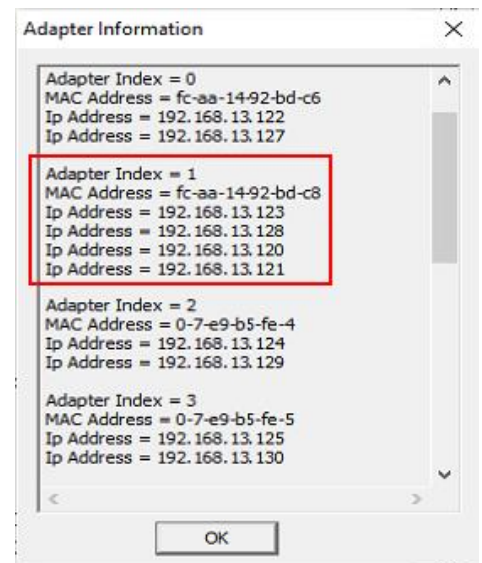
  - Click 💾 **Save** to save the configuration.

- On the same **MAPS-LTEX2 (Target eNB)** main window, from **Configuration** menu → select **Incoming Call Handler Configuration** and invoke the window. Verify that **X2APSessionController.gls** script is set against **HandoverRequest** to handle UE signaling procedure. Exit from the window.
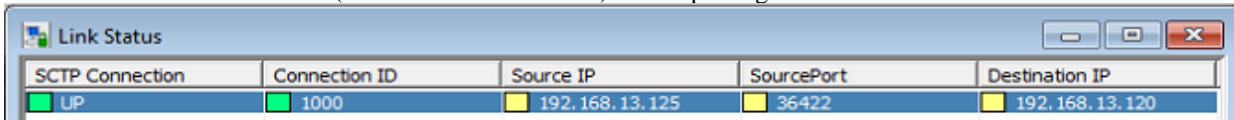


## Second MAPS™ LTEX2 (GUI) – (Source eNodeB)

- Right-click on the **MAPS-LTEX2_64** application using shortcut icon created on the desktop and select 'Run as Administrator'. This instance of MAPS™ is configured for *Call Generation.*

- Once the **MAPS-LTEX2** instance is invoked, by default, **Testbed Setup** window is displayed. Click icon and select **Source_eNB** configuration file. Verify and validate the following parameter values:

  ➢ The **Display Adapter Info** option from the **Help** menu displays all the network adapters available in the system. Choose and set the **Adapter Index** value displayed against the IP address in use.

  ➢ Set **eNodeB IP Address** to 192.xx.xx.120 (NIC1 IP address)

  ➢ Set SCTP Mode to Client

  ➢ Set **Target eNodeB IP Address** to 192.xx.xx.125 (NIC2 IP address)

  ➢ By default, **Target eNodeB Port** is set to **36422**

  ➢ By default, **Source eNodeB Port** is set to **36422**

  ➢ Scroll down and set Traffic = Disabled

  ➢ By default, **End User Configuration** is set to **SourceUE_Profiles.xml**
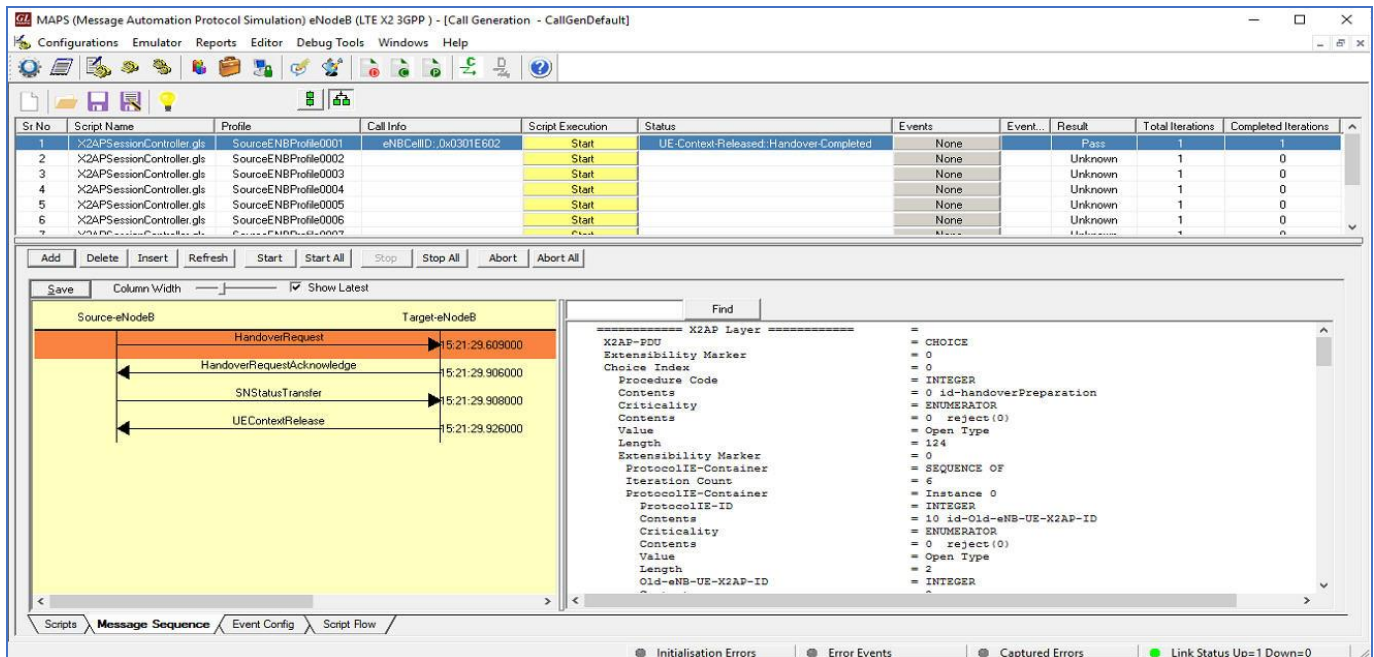
  ➢ Click on Save to save the configuration.

- **Start** the testbed on both the MAPS instances (Source eNodeB and Target eNodeB).

- On both the MAPS instances main window, from **Reports** menu → select **Link Status** option to verify the link status. Verify that the **SCTP Link** Status is **UP** (indicated in Green color) before placing the call.



- *Note: Fails to start SCTP Services and associated SCTP Link status is Down*, then **Turn OFF Windows Firewall** (navigate to Control Panel → Systems & Security → Windows Firewall, click Turn Off Windows Firewall for all networks).

- On both instances of **MAPS-LTEX2** (Source eNodeB and Target eNodeB) main window, click **Call Reception** icon and observe that the **Check_SCTP_Status.gls** script is activated.

- In the **MAPS-LTEX2** (Source eNodeB) instance, click the **Call Generation** icon on main window, and invoke the **Call Generation** window.

- By default, you will observe multiple call instances loaded with **X2APSessionController.gls** script and **SourceENBProfile00\*\*** profiles.

- Select the call instance loaded with **X2APSessionController.gls** script and **SourceENBProfile0001** profile in the Call Generation window, and click [ Start ] button to initiate the call generation.

- Wait for the calls to terminate, and verify the call flow under the **Message Sequence** tab at both generation and reception end.

- Select any message in the ladder diagram and observe the respective decode message on the right pane for the respective message.



- Return to instance of **MAPS-LTEX2** (Target eNodeB), in the **Call Reception** window, observe that the calls are automatically received running the Rx script.