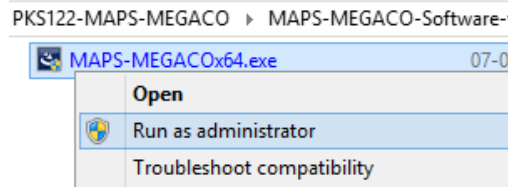


Software and License Installation

DO NOT CONNECT USB DONGLE TO THE PC FIRST. Perform Software installation first, followed by License installation and then plug-in the USB hardware dongle to the PC.

- PC Requirements
 - Windows® 7 and above Operating System (**64 bit Only**).
 - Core i3 to i7 (or equivalent), 4 GB Memory, NIC, and USB 2.0 Ports.
- Plug-in the **USB Installation Stick** (pen drive) to the PC. This is provided with the shipment package by GL Communications.
- Navigate to **PKS122-MAPS-MEGACO\MAPS-MEGACO-Software-verXX** folder, right-click on **MAPS-MEGACox64.exe** and select **Run as Administrator**. Follow the onscreen instructions and complete the installation.



- Navigate back to root directory in USB installation stick (pen drive) to **GL-Dongle License Installer** folder, execute **GLDongleLicenseInstaller_x64.exe**. Follow the onscreen instructions and complete the installation.
- NOW PLUG-IN the USB Dongle to the PC to the USB 2.0 port of your computer. Windows® should install all required drivers automatically. A red light should appear on the dongle indicating that the device is functioning correctly and ready to use.
- It is recommended to reboot the system after the software installation. If you had problems with installation so far, refer to [Troubleshoot](#) section explained in this document.
- You can verify if the required licenses are installed. Navigate to **C:\Program Files\GL Communications Inc\GLDONGLE** directory, execute **appl_list.exe** and confirm that the following licenses are listed:
 - PKS122 (MAPS for Megaco)
 - PKS102 (PacketGen RTP Soft Core) *

***Note:** Additional licenses may be required for optional codec. Please verify that all licenses purchased are displayed using the **appl_list.exe** utility.

Verification



For functional verification of MAPS™ MEGACO user needs to have 3 PCs with single NIC or 2 PCs with 1 PC is having dual NIC.

The configuration explained below allows **MAPS™ MEGACO** application to act as **MGC** (Media Gateway Controller) as well as **MG** (Media Gateway) nodes.

MAPS™ MEGACO configured as MGC


- Click on **MAPS-MEGACO** application shortcut icon created on the desktop and select ‘Run as Administrator’. This instance of MAPS™ is configured for *Call Generation*.

- While invoking the second MAPS-MEGACO instance, verify the following in the Protocol Selection window
 - Protocol Standard as **MEGACO**
 - Protocol Version as **IETF**
 - Select Node as **Media Gateway Controller**
 - Click **OK**


- By default, Testbed Setup window is displayed. Click  and select **TestBedDefault** configuration and check for the parameter default values as listed below:
 - Set TransportType as **TCP**, it can be UDP*, TCP, or SCTP
 - ***Note:** If the Transport Type selected as UDP, ensure that proper UDP port numbers are specified.
 - Set **SCTP or TCP Node Type** to **Server**
 - Set **MGC IP** to Local PC (PC #1) IP address (for example, 192.168.12.75)
 - Set MG1 IP address to IP address of PC #2 (for example, 192.168.12.180)
 - Set **MG Port** to **2944**
 - Set **MGC Port** to **2944**
 - Set MG Name as “MG1”
 - Set MG2 IP address to IP address of PC #3 (for example, 192.168.12.133)
 - Set **MG Port** to **2944**
 - Set **MGC Port** to **2944**
 - Set MG Name as “MG2”
 - Click on the **Save**  button.

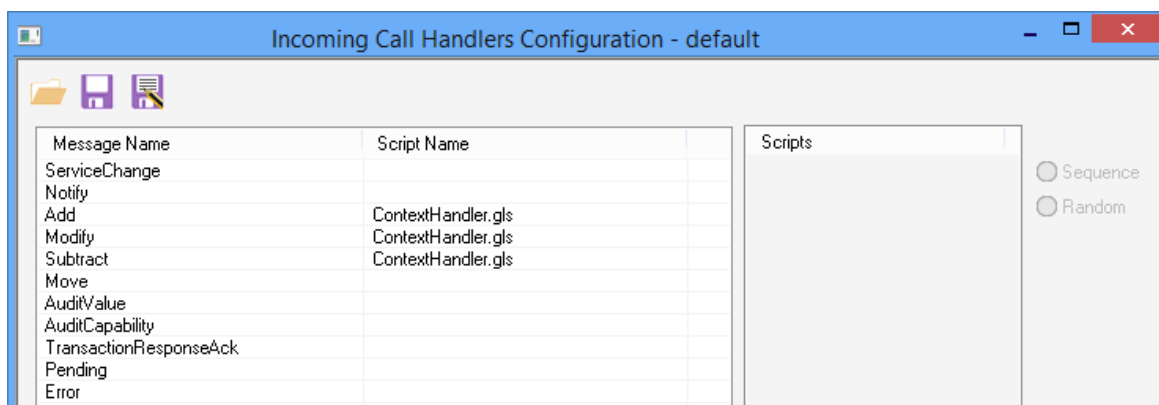
- **Start** the testbed setup on MGC instance.


MAPS™ MEGACO configured as MG #1

- Click on **MAPS-MEGACO** application shortcut icon created on the desktop and select 'Run as Administrator'. This instance of MAPS™ is configured for **Call Reception**.
- While invoking the first MAPS-MEGACO instance, verify the following in the Protocol Selection window -
 - Protocol Standard as **MEGACO**
 - Protocol Version as **IETF**
 - Select Node as **Media Gateway**
 - Click **OK**
- By default, Testbed Setup window is displayed. Click  and select **TestBedDefault** configuration, click on **OK** and check for the parameter default values as listed below:
 - Set **Enable RTP Simulation = True**
 - Set **RTP Hardware Interface Type = PC NIC**
 - Set **Media IP Address** to IP address of PC #2 (for example, 192.168.12.180)
 - Set TransportType as **TCP**, it can be **UDP***, **TCP**, or **SCTP**


***Note:** If the Transport Type selected as UDP, ensure that proper UDP port numbers are specified.

 - Set **SCTP or TCP Node Type** to **Client**
 - Set **MG IP** to IP address of PC #2 (for example, 192.168.12.180)
 - Set **MG Port** to **2944**
 - Set **MGC IP** to IP address of PC #1 (for example, 192.168.12.75)
 - Set **MGC Port** to **2944**
 - Click on the **Save**  button.
- From MAPS-MEGACO (MG) main window, select **Configuration > Incoming Call Handler Configuration**. Verify that **ContextHandler.gls** script is loaded against **ADD, MODIFY, SUBTRACT** messages. Exit from the window.




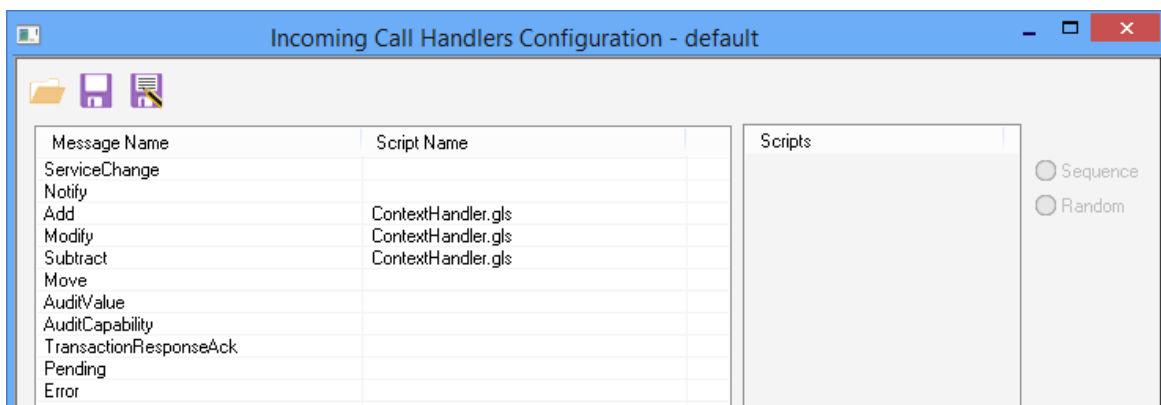
- From MAPS-MEGACO (MG) main window, select **Editor > Profile Editor**. By default, **MG_Profiles** is loaded in the window. Verify the **following settings**:
 - Set Codec Options = PCMU
 - Set Traffic Type = Auto Traffic File
 - Set Traffic Direction = TxOnly
 - Click on the **Save**  button. Exit from the Profile Editor window.


MAPS™ MEGACO configured as MG #2




- Click on **MAPS-MEGACO** application shortcut icon created on the desktop and select ‘Run as Administrator’. This instance of MAPS™ is configured for *Call Reception*.
- While invoking the first MAPS-MEGACO instance, verify the following in the Protocol Selection window -
 - Protocol Standard as **MEGACO**
 - Protocol Version as **IETF**
 - Select Node as **Media Gateway**
 - Click **OK**
- By default, Testbed Setup window is displayed. Click  and select **TestBedDefault** configuration, click on **OK** and check for the parameter default values as listed below:
 - Set **Enable RTP Simulation = True**
 - Set **RTP Hardware Interface Type = PC NIC**
 - Set **Media IP Address** to IP address of PC #3 (for example, 192.168.12.133)
 - Set TransportType as **TCP**, it can be UDP*, TCP, or SCTP

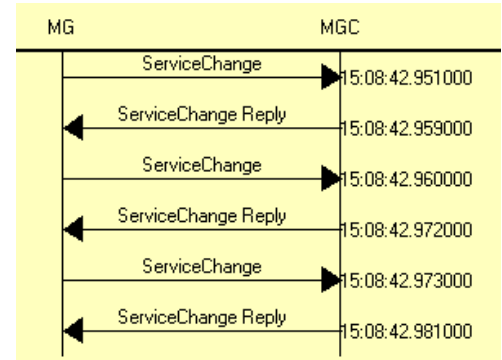
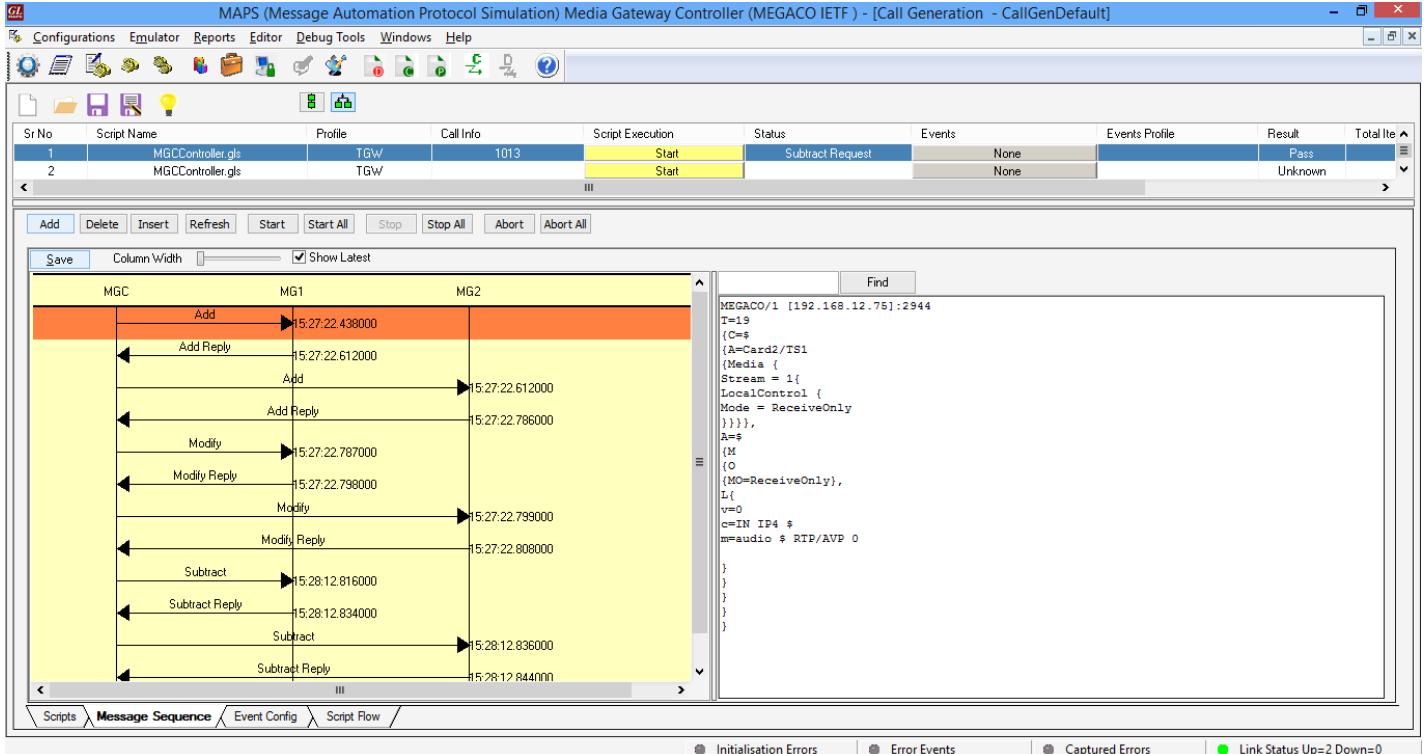
***Note:** If the Transport Type selected as UDP, ensure that proper UDP port numbers are specified.

 - Set **SCTP or TCP Node Type** to **Client**
 - Set **MG IP** to IP address of PC #3 (for example, 192.168.12.133)
 - Set **MG Port** to **2944**
 - Set **MGC IP** to IP address of PC #1 (for example, 192.168.12.75)
 - Set **MGC Port** to **2944**
 - Click on the **Save**  button.
- From MAPS-MEGACO (MG) main window, select **Configuration > Incoming Call Handler Configuration**. Verify that **ContextHandler.gls** script is loaded against **ADD, MODIFY, SUBTRACT** messages. Exit from the window.



- From MAPS-MEGACO (MG) main window, select **Editor > Profile Editor**. By default, **MG_Profiles** is loaded in the window. Verify the **following settings**:
 - Set Codec Options = PCMU
 - Set Traffic Type = Auto Traffic File
 - Set Traffic Direction = TxOnly
 - Click on the **Save**  button. Exit from the Profile Editor window.

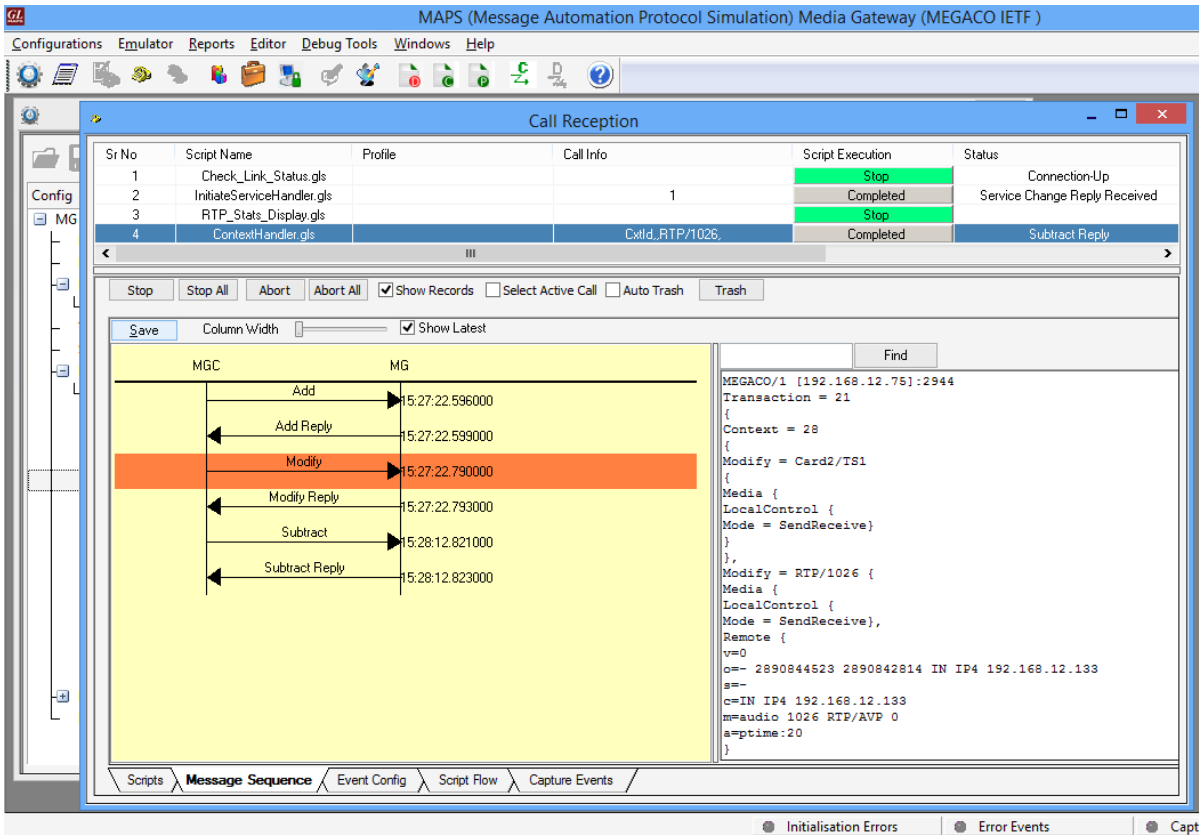
- Now, start Testbed Setup on both **MG1** and **MG2**. Once all the instances are started, execute Link Status under Report menu and observe that Link Status is “UP” in all 3 instances.
- Upon starting **MG1** and **MG2**, **Service Change** message will be sent from both MG1 and MG2 to MGC. Similarly, **Service Change** reply will be sent from MGC to both the MG.
- Click on **Call Reception**  icon in **MG1** and **MG2** and observe the **Service Change** messages. Refer to the below figure. Similarly, user can observe Service Change messages on **MGC**.
- From the MAPS-MEGACO (MGC) main window, click the **Call Generation**  icon and invoke the **Call Generation** window.
- By default, you will observe call instances loaded with **MGCCController.gls** script and **TGW** profile displayed in the Call Generation window. Select the call instance and click **Start** button to execute the script.
- On the MAPS-MEGACO MG1 and MG2 main window, click **Call Reception**  icon and observe the calls being received running the **ContextHandler.gls** answer scripts.
- Once call gets terminated, verify the **Message Sequence Flow** by selecting the call objects 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.

The screenshot displays the MAPS (Message Automation Protocol Simulation) Media Gateway Controller (MEGACO IETF) interface. The main window shows a table of call instances with columns for Sr No, Script Name, Profile, Call Info, Script Execution, Status, Events, Events Profile, Result, and Total Items. Two instances are listed, both using the MGCCController.gls script and TGW profile, with a status of 'Start' and 'Subtract Request'.

Below the table, a ladder diagram illustrates the message sequence flow between MGC, MG1, and MG2. The diagram shows messages such as 'Add', 'Add Reply', 'Modify', 'Modify Reply', 'Subtract', and 'Subtract Reply' with their respective timestamps. The right pane displays the decode message for the selected 'Subtract' message, showing the MEGACO/1 [192.168.12.75]:2944 message structure.

MGC Call Generation



MG Call Reception

Troubleshoot

- **“Unknown device” error while installing USB Dongle.** If you see this error, ensure you have installed the GL Dongle License Installer software first and then plugged the USB Dongle to the PC. The USB Dongle will then be recognized as “SafeNetInc. USB Key” and appropriate drivers will get installed automatically. If problem still persists, plug the USB Dongle to a different USB 2.0 port and try again.
- **“Security Error: Application is not licensed”,** if you see this error when you run MAPS™ Megaco it indicates a problem with either your dongle or license file.
 - First verify that the dongle is plugged in and the red light is on
 - Navigate to **C:\Program Files\GL Communications Inc\GLDONGLE**
 - Run **haspinfohl.exe**. Verify that Status is **OK** and make a note of the Serial #.
 - Run **appl_list.exe**. Verify that there is a line in the table reading **PKS122 MAPS for Megaco** with the serial number you noted above.
 - If the dongle does not appear in **haspinfohl.exe**, verify that it appears as a USB device in the **Windows Device Manager**. If it does not appear even in the device manager, remove the dongle and plug it into a different USB port, preferably one directly on the motherboard.
- If the SIP/RTP Core console does not invoke with the MAPS™ TestBed start-up, check for the following:
 - RTP Soft Core licenses may not be installed for the dongle used. Run **appl_list.exe** available in the **C:\Program Files\GL Communications Inc\GLDONGLE** directory. Verify that there is a line in the table reading **PKS102 PacketGen RTP Soft Core** with the serial number you noted above.
 - Verify that the MGC IP Address and RTP IP Address in the testbed parameters are configured with the proper system IP address.
- If you cannot resolve the issues, please contact GL Communications at info@gl.com for technical support.