

Software and License Installation

***Note1:** If you have purchased MAPS™ HD product, you will receive a network appliance with all the necessary PC hardware interfaces, Operating System, required MAPS™ applications, GL's HD NICs, and licenses pre-installed. And therefore, you will need to only plug-in the monitor, and connect the network appliance to the power outlet. Then connect the USB Hardware Dongle you have received with the shipment, and proceed to verification steps.

- PC Requirements
 - Windows® 7 and above Operating System (64 bit Only).
 - Core i7 (or equivalent), 32 GB Memory, GL's HD NIC (**4x 1 Gbps / 2x10 Gbps NIC ports**), Regular PC NIC, and USB 2.0 Ports.
- NOW PLUG-IN the USB Hardware Dongle to the PC to the USB 2.0 port of your computer. A red light should appear on the dongle indicating that the device is functioning correctly and ready to use.
- You can verify if the purchased 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:
 - PKS124 (MAPS™ MGCP)
 - PKS102 (RTP Traffic)
 - PKS109 (HD RTP Traffic) ****Note2**

****Note2:** Additional licenses may be required for optional codecs and other traffic options. Please verify that all licenses purchased are displayed using the **appl_list.exe** utility.

Verification

The configuration explained below allows **MAPS™ MGCP** application to act as **MGC** (Media Gateway Controller) as well as **MG** (Media Gateway). This example requires 2 Pcs, PC 1 is configured as MGC and PC 2 is having dual NIC which is configured as MG1 and MG2 to control TGW (Trunking Gateway). MAPS™ MGCP configured as MGC is connected to the third-party Media Gateway. MGC accepts registrations from the MG and both the MG1 and MG2 on PC2 will handle the RTP traffic (Auto Traffic Files/Digits/Tones, User Defined Traffic, and IVR).

GL's HD card connections verification:

Verify that network cables are properly connected. Make sure that the cable connectors are pushed in correctly. You should feel and hear a small click while plugging the cables. Also, you can use the monitoring tool (refer to [Troubleshoot](#) section) to check the Ethernet links UP or DOWN status.

MAPS™ MGCP configured as MGC (PC #1)

- Invoke **MAPS™ MGCP** application installed on the PC.
- The Protocol Selection window is prompted with the following settings:
 - Protocol Standard as **MGCP**
 - Protocol Version as **IETF**
 - Select Node as **Media Gateway Controller**
 - Click **OK**
- On the Test Bed Default window, load **TestBedDefault** configuration and check for the settings as below:
 - Set the **MGC IP** to 192.xx.xx.39 (PC IP address where MGC is running)
 - Set **MGC Port** to **2427**

MG1 (Trunking Gateway 1)

- Verify that the **MG IP** is set to the Third-party Media Gateway IP address (Ex: (192.xx.xx.220))
- Set **MG Port** to **2427**

MG2 (Trunking Gateway 2)


- Verify that the **MG IP** is set to the Third-party Media Gateway IP address (Ex: (192.xx.xx.221))
- Set **MG Port** to **2427**


MAPS™ MGCP configured as MG1 (PC #2)

- Invoke **MAPS™ MGCP** application installed on the PC.
- The Protocol Selection window is prompted with the following settings:
 - Protocol Standard as **MGCP**
 - Protocol Version as **IETF**
 - Select Node as **Media Gateway**
 - Click **OK**
- On the Test Bed Default window, load **TestBedDefault** configuration and check for the settings as below:
 - Set the MG IP to 192.xx.xx.154 (PC IP address where MG is running)
 - Set MG Port to 2427
 - Set the MGC IP address where the MGC is running.
 - Set MGC Port to 2427
 - Enable RTP Traffic
 - Set Enable RTP Session as True
 - Choose RTP Hardware Interface Type as “GL’s High Density Interface Card” (If you have purchased PKS109 - HD RTP Traffic License)
 - Set the Media IP address same as MG IP address (192.xx.xx.220)

MAPS™ MGCP configured as MG2 (PC #2)

- Invoke another instance of **MAPS™ MGCP** application installed on the PC.
- The Protocol Selection window is prompted with the following settings:
 - Protocol Standard as **MGCP**
 - Protocol Version as **IETF**
 - Select Node as **Media Gateway**
 - Click **OK**
- On the Test Bed Default window, load **TestBedDefault** configuration and check for the settings as below:
 - Set the **MG IP** to 192.xx.xx.155 (PC IP address where MG is running)
 - Set **MG Port** to **2427**
 - Set the **MGC IP** address where the **MGC** is running.
 - Set **MGC Port** to **2427**
 - Enable RTP Traffic
 - Set Enable RTP Session as **True**
 - Choose RTP Hardware Interface Type as “GL’s High Density Interface Card” (If you have purchased PKS109 - HD RTP Traffic License)
 - Set the Media IP address same as MG IP address (192.xx.xx.221)
- Select **Editor** → **Profile Editor** and load **MG_Profiles** on both **MG1** and **MG2**. Make sure that options are set as shown below.
 - **Codec Options:** PCMU
 - Specify the Packetization Time in Msec
 - Traffic Type as **Auto Traffic File**
 - Traffic Direction as **Tx** only
 - Impairment Type **None**

- Click **Start** to start MG and MGC testbed setup on both the PCs. Verify that the SIP and RTP core console window is displayed properly.
- On PC2, Click **Call Reception** icon  on both MG1, MG2 and observe the **RTP_Stats_Display.gls** script activated in the Call Reception window.
- On PC1, from **Emulator-> Load Generation** from main menu
- By default, **MGCPControl-TGW.gls** script and **TGWProfile0*** profiles are loaded.
 - Total calls to Generate by default is set to ‘*’, (indicates no limit)
 - Maximum Active calls to 2000.
 - Fixed statistical distribution pattern
- Click **Start** button to initiate the bulk call generation.

- On both the MG1 & MG2 MAPS™ MGCP instances, click  icon and open **Call Reception**.
- Observe that the calls are automatically received at the **Call Reception (MG1 & MG2)** window running the Rx script.
- To verify results, invoke **Statistics** window from **Reports** menu, to view the number of calls passed/failed, which are also plotted as pie-graph, Calls per sec graph, and Simultaneous calls per sec graph. Switch to Message Stats tab to view the statistics of the messages sent/received related to MGCP protocol.
- Observe the RTP packets received on each port of the GL’s HD card logged in the RTP Core console

Troubleshoot

- **“Security Error: Application is not licensed”**, if you see this error when you run MAPS™ MGCP 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
 - Go to **C:\Program Files\GL Communications Inc\GLDONGLE**
 - Run **appl_list.exe**. Verify that there is a line in the table reading **PKS124 MAPS™ MGCP** with the serial number you noted above.

- 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 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.

- Verify Physical Connection
 - Check manually the LEDs on the HD card connected, if the GL’s HD Interface card is located at local system
 - To verify from remote location, run **Monitoring.exe** utility, which displays the link status SFP Type connection and the auto negotiated link speed.
 - Important Column Description:
 - P - Port number
 - A - Adapter number
 - Type - Connection type
 - Link - Link speed (Down indicates cable is unplugged or SFP module is incompatible)

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monitoring (v. 2.9.1.32-9d272)
P  A      Type      Link      Down      Rx      Tx      Max      Temp.
0  0      SFP-CU     1G Full   0         0.00M   0.00M   9018   K/A
1  0      SFP-SX-DD     Down     1         0.00M   0.00M   9018   42.70 C
2  0      SFP-CU     1G Full   0         0.00M   0.00M   9018   K/A
3  0      SFP-CU     1G Full   0         0.00M   0.00M   9018   K/A

TX RMON1 counters
Packets      : 0x0000000000000000  Octets      : 0x0000000000000000
Broadcast    : 0x0000000000000000  Multicast   : 0x0000000000000000
64 octets    : 0x0000000000000000  65-127 octets : 0x0000000000000000
128-255 octets : 0x0000000000000000  256-511 octets : 0x0000000000000000
512-1023 octets : 0x0000000000000000  1024-1518 octets: 0x0000000000000000
Undersize    : 0x0000000000000000  Oversize    : 0x0000000000000000
Fragments    : 0x0000000000000000  Collisions   : 0x0000000000000000
Drop events   : 0x0000000000000000  Crc/Align errors: 0x0000000000000000
Jabbers      : 0x0000000000000000

Reset  Tx/Rx  0RMON  1ExtRMON  2Checksum  3Decode  4Drop  5IPF
Quit  Sensors  Color stat  XTimeSync  IEEE 1588 PTP  DStream  FDump

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- If you cannot resolve the issues, please contact the appointed technical support person. If you do not know the technical support contact, please reach us at info@gl.com.