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:
  - PKS122 (MAPS™ MEGACO)
  - 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™ MEGACO** 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™ MEGACO 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™ MEGACO configured as MGC (PC #1)

- Invoke **MAPS™ MEGACO** application installed on the PC.
- The Protocol Selection window is prompted with the following settings:
  - Protocol Standard as **MEGACO**
  - 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™ MEGACO configured as MG1 (PC #2)

- • Invoke **MAPS™ MEGACO** application installed on the PC.

- • The Protocol Selection window is prompted with the following settings:
  - ➢ Protocol Standard as **MEGACO**
  - ➢ 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™ MEGACO configured as MG2 (PC #2)

- • Invoke another instance of **MAPS™ MEGACO** application installed on the PC.

- • The Protocol Selection window is prompted with the following settings:
  - ➢ Protocol Standard as **MEGACO**
  - ➢ 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 / 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, *MEGACOCallControl-TGW.gls* script and *TGWProfie0** 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™ MEGACO 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 MEGACO protocol.

- Observe the RTP packets received on each port of the GL's HD card logged in the RTP Core console

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Troubleshoot

- ***"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
  - ➢ 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™ MEGACO* 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  N/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  N/A
  3  0      SFP-CU    1G Full    0      0.00M      0.00M  9018  N/A



                          TX RMON1 counters
  Packets          : 0x0000000000000000  Octets          : 0x0000000000C000000
  Broadcast        : 0x0000000000000000  Multicast       : 0x0000000000C000000
  64 octets        : 0x0000000000000000  65-127 octets   : 0x0000000000C000000
  128-255 octets   : 0x0000000000000000  256-511 octets  : 0x0000000000C000000
  512-1023 octets  : 0x0000000000000000  1024-1518 octets: 0x0000000000C000000
  Undersize        : 0x0000000000000000  Oversize        : 0x0000000000C000000
  Fragments        : 0x0000000000000000  Collisions      : 0x0000000000C000000
  Drop events      : 0x0000000000000000  Crc/Align errors: 0x0000000000C000000
  Jabbers          : 0x0000000000000000


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

- 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.