

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:
 - PKS120 (MAPS™ SIP)
 - 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

Functional verification requires a PC with 2 NIC cards and 1 GL's HD card installed. Normal NIC is used for SIP Signaling and to invoke RTP cores (communication between MAPS™ and RtpCore) and GL's HD card is used to pump and receive RTP Traffic. Ensure that the MAPS™ SIP application and the above listed licenses are installed on the test PC. The GL's HD card ports and the PC NIC are connected to a managed switch using Ethernet cables.

Make a copy of installed MAPS-SIP folder from installation path. Invoke 2 instances of MAPS™ SIP application one from each folder. One from default installed directory (to act as UAC) and other one from copied folder (to act as UAS). The configurations below allow MAPS™ SIP to act as User Agent Client (UAC) and User Agent Server. (UAS) for generating and receiving bulk calls and to handle high density traffic.

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™ SIP HD (First instance)

- First instance of MAPS™ SIP is configured to act as UAS (**Call Reception**).
- On the Test Bed Default window,
 - Verify that **TestBedDefault** configuration loads with **UA_IPV4_Profiles.xml** as the default profile.
 - RTP Core Configurations:
 - **Number of RTP-Cores:** Set to 2. For the above test setup, each instance of MAPS™ SIP is configured with 2 RTP-Cores.
 - **RTP Core IP:** Specify the RTP Core IP address. (This is IP address assigned to normal NIC and is used for communication between MAPS™ SIP HD and RTP core).
 - **RTP Core Id:** To be used by MAPS™ to identify each RTPCore invoked. Assign unique RTP Core IDs.

- **Adapter Index:** Indicates the port number on the GL's HD interface. (Index value 0 for Port 0, Index value 1 for Port 1)
- Click **Save** and replace the **TestBedDefault** configuration file
- Invoke **Profile Editor** from “**Editor**” menu and load “**UA_IPV4_Profiles**”. Edit **Profile0001**, which uses RTPCore ID 1 to assign the media IP address 192.168.1.5 for the attached GL's HD interface port 0
 - Edit **RTP IP Address** -> **192.xx.xx.5** (IP assigned to Port 0 attached to RTPCore ID 1)
 - RtpCoreID -----> 1
 - Edit **Contact Address** ---> **0001@192.xx.xx.xx** (0001@IP0 of NIC 1)
 - Edit **Address of Record** ---> **0001@192.xx.xx.xx** (0001@IP0 of NIC 1)
 - Edit **To Address** --->**0001@ 192.xx.xx.xx** (0001@IP of NIC 2)
 - By default, traffic is enabled and is set to **Auto Traffic File** type
- Similarly, edit **Profile0002**, which uses RTPCore ID 2 to assign the media IP address 192.168.1.6 for the attached GL's HD interface port 1
 - Edit **RTP IP Address** -> **192.xx.xx.6** (IP assigned to Port 1 attached to RTPCore ID 2)
 - RtpCoreID -----> 2
 - Edit **Contact Address** ---> **0002@192.xx.xx.xx** (0002@IP0 of NIC 1)
 - Edit **Address of Record** ---> **0002@192.xx.xx.xx** (0002@IP0 of NIC 1)
 - Edit **To Address** --->**0002@192.xx.xx.xx** (0002@IP of NIC 2)
 - By default, traffic is enabled and is set to **Auto Traffic File** type
- Save the configuration to “**UA_IPV4_Profiles**”
- Select **Configuration > Incoming Call Handler Configuration** from the main menu. Verify that the **SipCallControl.gls** script is loaded against the **INVITE** message in the **Incoming Call Handler Configuration** window.

MAPS™ SIP HD (Second instance)

- On HD PC2, MAPS™ SIP is configured to act as UAC (**Call Generation**).
- On the Test Bed Default window,
 - Verify that **TestBedDefault** configuration loads with **UA_IPV4_Profiles.xml** as the default profile.
 - RTP Core Configurations:
 - **Number of RTP-Cores:** Set to 2. For the above test setup, each instance of MAPS™ SIP is configured with 2 RTP-Cores.
 - **RTP Core IP:** Specify the RTP Core IP address. (This is IP address assigned to normal NIC and is used for communication between MAPS™ SIP HD and RTP core).
 - **RTP Core Id:** To be used by MAPS™ to identify each RTPCore invoked. Assign unique RTP Core IDs.
 - **Adapter Index:** Indicates the port number on the GL's HD interface. (Index value 2 for Port2, Index value 3 for Port3)
 - Click **Save** and replace the **TestBedDefault** configuration file
- Open **Profile Editor** from “**Editor**” menu and load “**UA_IPV4_Profiles**”. Edit **Profile0001**, which uses RTPCore ID 3 to assign the media IP address 192.168.1.7 for the attached GL's HD interface port 2
 - Edit **RTP IP Address** -> **192.xx.xx.7** (IP assigned to Port 2 attached to RTPCore ID 3)
 - RtpCoreID -----> 3
 - Edit **Contact Address** ---> **0001@192.xx.xx.xx** (0001@IP1 of NIC 2)
 - Edit **Address of Record** ---> **0001@192.xx.xx.xx** (0001@IP1 of NIC 2)
 - Edit **To Address** --->**0001@192.xx.xx.xx** (0001@IP of NIC 1)
 - By default, traffic is enabled and is set to **Auto Traffic File** type
- Similarly, edit **Profile0002**, which uses RTPCore ID 4 to assign the media IP address 192.168.1.8 for the attached GL's HD interface port 3
 - Edit **RTP IP Address** -> **192.xx.xx.8** (IP assigned to Port 3 attached to RTPCore ID 4)
 - RtpCoreID -----> 4

- Edit *Contact Address* ---> *0002@192.xx.xx.xx* (0002@IP1 of NIC 2)
- Edit *Address of Record* ---> *0002@192.xx.xx.xx* (0002@IP1 of NIC 2)
- Edit *To Address* --->*0002@192.xx.xx.xx* (0002@IP of NIC 1)
- By default, traffic is enabled and is set to *Auto Traffic File* type
- Save the configuration to “**UA_IPV4_Profiles**”
- **Start** both the testbed and wait for 4 RTP-Core console windows to appear. If the RTP Core console does not invoke with the MAPS™ TestBed start-up, refer to [Troubleshoot](#) section explained in this document.
- In MAPS™ SIP (UAC), select **Emulator > Load Generation** from main menu.
 - Load **Fixed** pattern from the drop-down list.
 - Total calls to Generate by default is set to ‘*’, indicates no limit
 - Maximum Active calls to 10000
 - Call Rate is set to 250
 - Add **SipCallControl.gls** script
 - Add **Profile0001 & Profile0002** profiles.
 - Click **Start** button to initiate bulk call generation.
- In MAPS™ SIP (UAS), click  icon and open **Call Reception** at the **UAS end** to observe the bulk calls being received running the **SipCallControl.gls** answer script.
- From **Reports** menu -> invoke **Statistics** window, observe the Call Statistics, Call Success Ratio, Call Graph and the Message Stats
- **QoS Statistics** for each port is calculated for the received traffic, which is logged in the text file saved in the installation directory
- Also, the RTP packets received on each port of the GL’s HD card is logged in the RTP Core console.

Troubleshoot

- “**Security Error: Application is not licensed**” error 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 *PKS120 MAPS™ SIP, PKS109 MAPS™ SIP HD* 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 *PKS102 RTP Soft Core* and *PKS109 MAPS™ SIP HD* are listed.
 - Verify that the SIP IP Address and RTP IP Address in the testbed configuration is 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.