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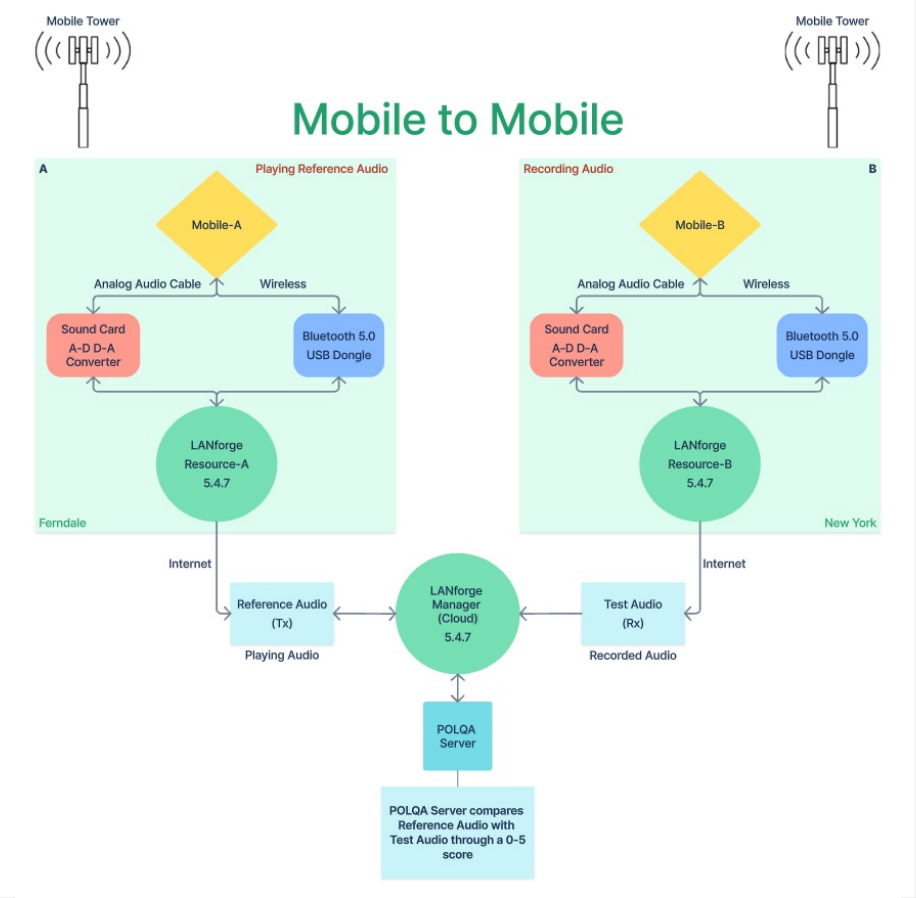
Mobile-Mobile Audio Quality Testing using POLQA/PESQ

Goal: Evaluate the voice call quality made between two Mobile phones through POLQA scoring server. PESQ can also be used in place of POLQA here.



Consider an example: LANforge-A (resource) makes a Mobile phone call towards another Mobile device connected to LANforge-B (resource). Both the LANforge resources are connected together via LANforge manager (cloud). LANforge resource-A plays a reference audio file over the call through analog audio cable or bluetooth. The incoming call is being recorded by LANforge resource-B through analog audio cable or bluetooth. After the call completes, both the reference audio file and recorded audio file are evaluated by LANforge manager (cloud) through the POLQA server. The POLQA server scores the recording, based on audio quality loss during the call.

1. Requirements:
   A. LANforge systems (version 5.4.7). One manager and atleast one resource.
   B. LANforge licenses
   C. POLQA license and server
   D. POLQA standard reference audio files
   E. Mobile Phones having Bluetooth connection and active SIM cards.
   F. Bluetooth USB dongles
   G. Analog audio cables
   H. USB sound cards
   I. Internet access
   J. Mobile network
2. Configuration:
   A. Connection between one or more LANforge resource systems towards one LANforge manager (Cloud)

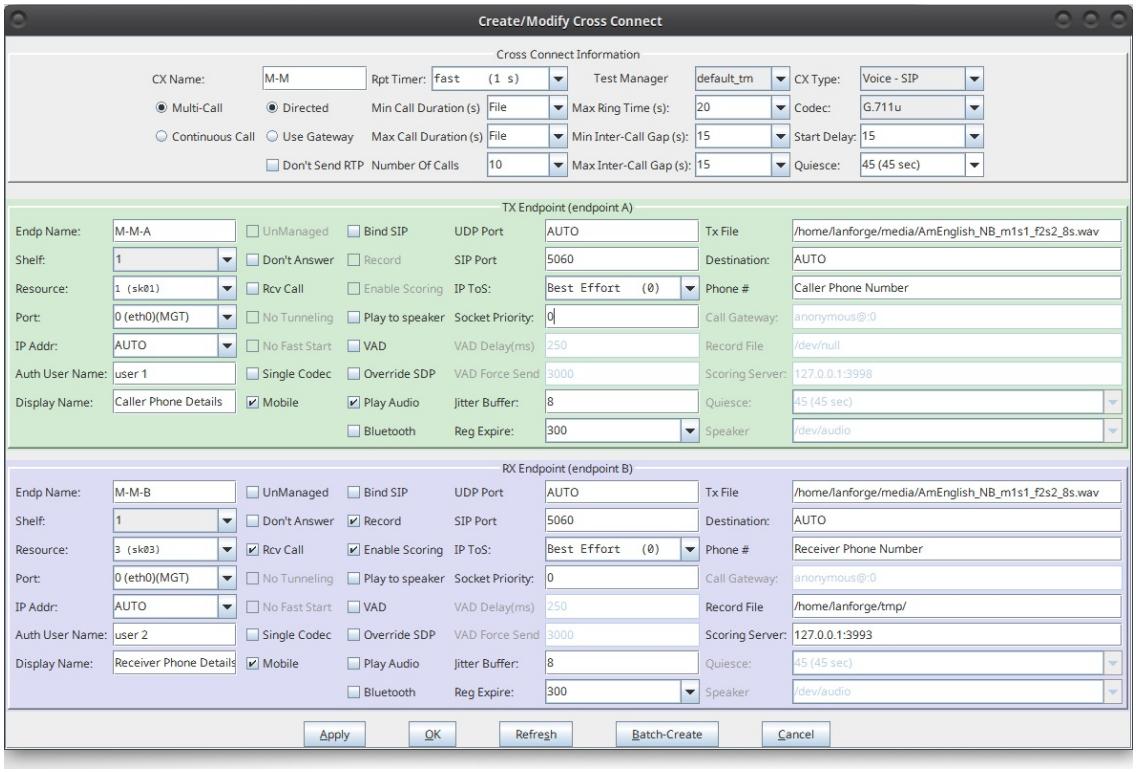
should be done till here.

B. LANforge licenses and POLQA licenses are installed.

C. Installation steps: Follow /home/lanforge/audio-bluetooth/README.txt on all LANforge resources.

D. After installation, please `reboot` all the LANforge systems.

E. On the LANforge manager (cloud), open the `GUI`.
In the VoIP/RTP tab, select **Create**.



A. Cross Connect details to be filled are:

I. **TX Endpoint A:** Mobile-A performs an outbound call towards Mobile-B. During this call, Mobile-A plays an audio Tx File over the call which is triggered from LANforge resource-A via analog cable or bluetooth connection.

i. `Phone:` Phone Number A

ii. `Auth User Name:` Mob User A

iii. `Resource:` LANforge resource-A (hostname sk01 from Ferndale location in this example)

iv. `Port:` Management Port with Internet access (eth0 in this example)

v. `Display Name:` Mobile A mac_address

vi. `Tx file:` reference audio file to be played on call

vii. Checkboxes:

i. `Mobile:` **True**

ii. `Rcv Call:` **False** (become a caller)

iii. `Bluetooth:` **True** (Play audio through Bluetooth channel optional)
`Bluetooth:` **False** (Play audio through analog audio cable)

iv. `Record:` **False**

v. `Enable Scoring:` **False**

vi. `Play Audio` **True**

II. **RX Endpoint B:** Mobile-B connected to LANforge resource-B receives an inbound call from Mobile-A. LANforge resource-B starts recording the active incoming audio call from Mobile-B via Bluetooth channel or analog audio cable option at the specified Record File location. The recorded file is then evaluated by POLQA server against the original Tx File.

i. `Phone:` Phone Number B

ii. `Auth User Name:` Mob User B

iii. `Resource:` LANforge resource-B (hostname sk03 from New York location in this example)

iv. `Port:` Management Port with Internet access (eth0 in this example)

v. `Display Name:` Mobile B mac_address

vi. `Tx file:` same audio file as TX Endpoint-A Tx File

vii. Checkboxes:

i. `Mobile:` **True**

ii. `Rcv Call:` **True** (become a receiver)

iii. `Bluetooth:` **True** (Record call through Bluetooth channel optional)
`Bluetooth:` **False** (Record call through analog audio cable)

iv. `Record:` **True**

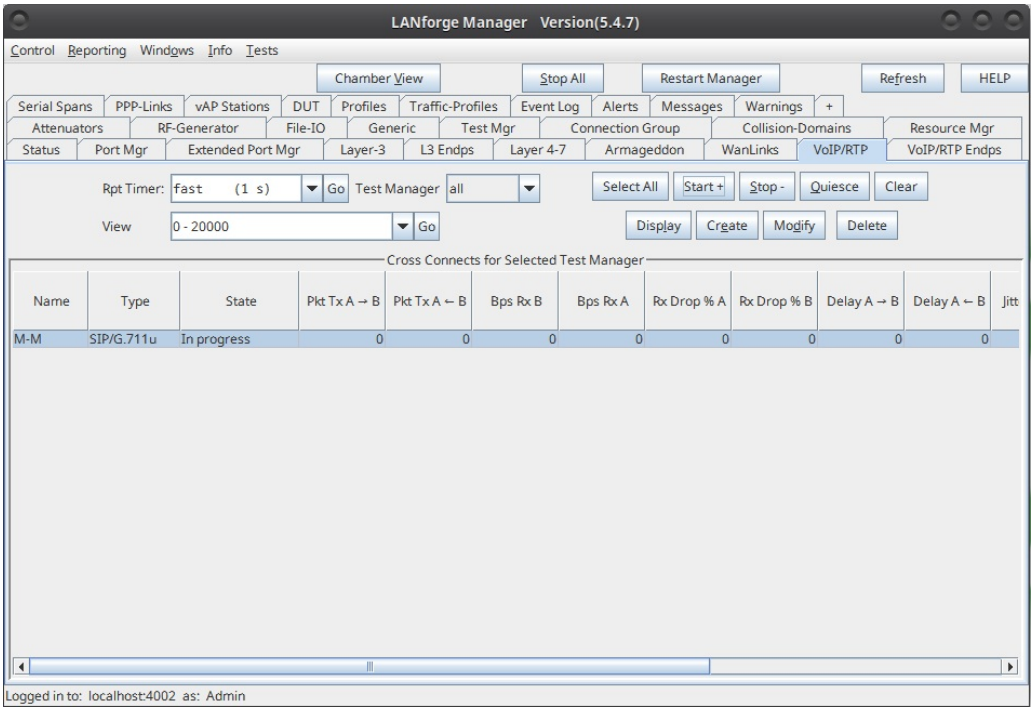
v. `Enable Scoring:` **True** (Enable POLQA scoring)

viii. `Record File:` Recording folder path

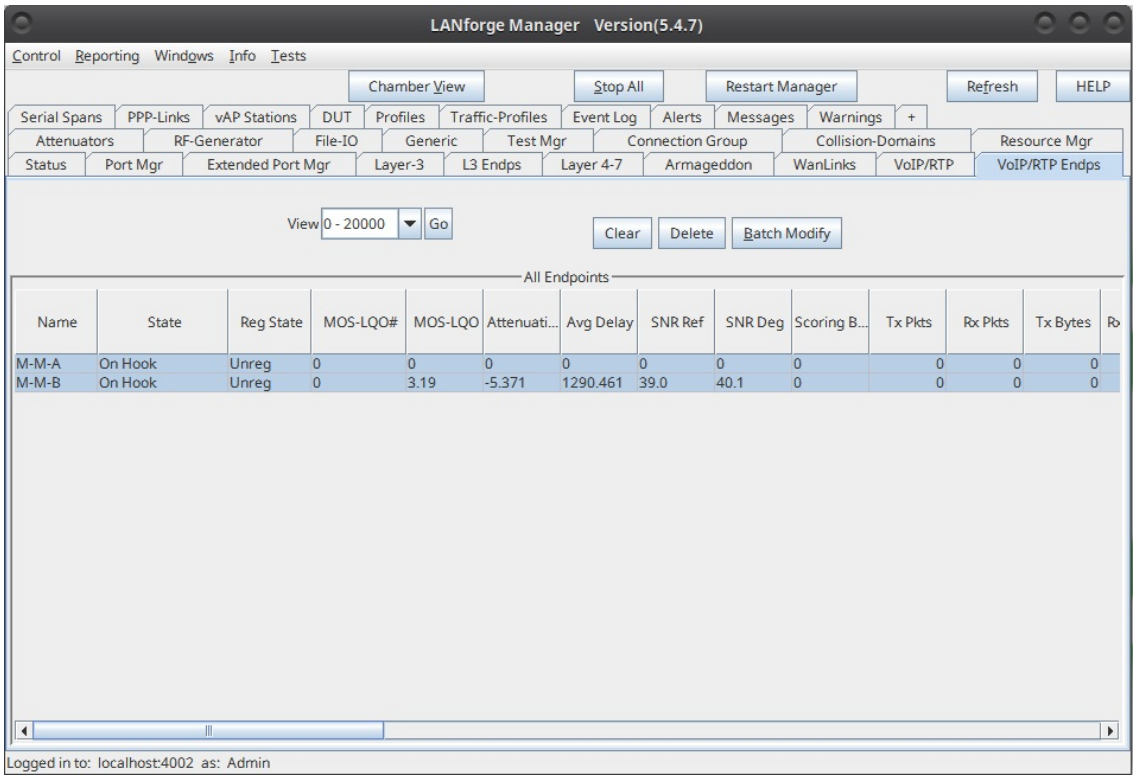
ix. `Scoring Server:` POLQA Server Address

B. Select `Apply`, `OK`, and **START** the test.

C.



F. Go To `VoIP/RTP Endps` tab to get the **POLQA Scores.**
(MOS-LQO, Attenuation AGC, Avg. Delay, SNR Reference, SNR Degraded).



3. Sample POLQA Score Report from POLQA server.

4. If you need assistance, you can contact us at support@candelatech.com