

## Generating Traffic for VoIP Testing

**Goal:** Set up and run VoIP traffic.

In this example, LANforge-FIRE is used to set up two VoIP test calls that may be used as a basis for VoIP load testing or VoIP Gateway testing.

- **Test 1:** Directed VoIP call where a LANforge endpoint calls another LANforge endpoint.
- **Test 2:** Gateway VoIP call where two LANforge endpoints register with a VoIP Gateway so that the call from one endpoint to the other goes through the gateway. The VoIP Gateway used in this example is Asterisk.

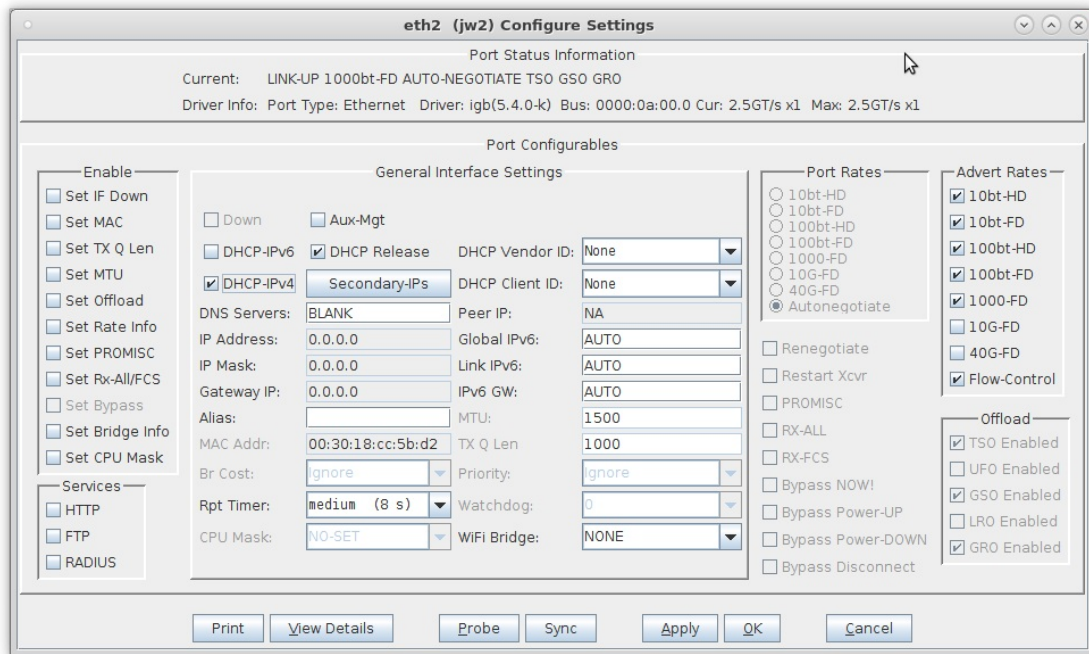
1. Set up the LANforge physical connections. The same two ports are used for both tests. Connect eth1 and eth2 from the LANforge-FIRE system to a network switch that is also connected to the VoIP Gateway. This example assumes that your VoIP Gateway is set up properly. If you need assistance, you can contact us at [support@candelatech.com](mailto:support@candelatech.com) or you can find a basic Asterisk setup at this link: [LANforge FAQ: How do I configure Asterisk for SIP Phones?](#)
2. Set up the LANforge ports so that they have valid IP addresses and IP masks.
  - A. Go to the Port Manager

The screenshot shows the LANforge Manager Port Manager interface. The window title is "LANforge Manager Version(5.3.6)". The interface includes a menu bar (Control, Reporting, Tear-Off, Info, Plugins) and several buttons (Stop All, Restart Manager, Refresh, HELP). Below the menu bar are tabs for Layer-4, Generic, Test Mgr, Test Group, Resource Mgr, Event Log, Alerts, Port Mgr, vAP Stations, and Messages. The Port Mgr tab is active, showing a table of Ethernet interfaces. The table has columns for Port, Phase, Down, IP, SEC, Alias, Parent Dev, RX Bytes, RX Pkts, Pps RX, bps RX, TX Bytes, TX Pkts, and Pps TX. The data is as follows:

Port	Pha...	Down	IP	SEC	Alias	Parent Dev	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX
1.1.0			192.168.100.103	0	eth0		2,932,930	26,466	5	4,888	14,454,099	18,373	2
1.1.1			0.0.0.0	0	eth1		342	1	0	0	0	0	0
1.1.2			0.0.0.0	0	eth2		5,194,004,...	3,431,073	1	1,043	5,194,040,...	3,430,775	0
1.1.3			0.0.0.0	0	eth3		5,194,253,...	3,432,951	3	3,460	5,193,974,...	3,430,725	0
1.1.4			0.0.0.0	0	eth4		350	5	0	0	0	0	0
1.1.5			0.0.0.0	0	eth5		0	0	0	0	350	5	0

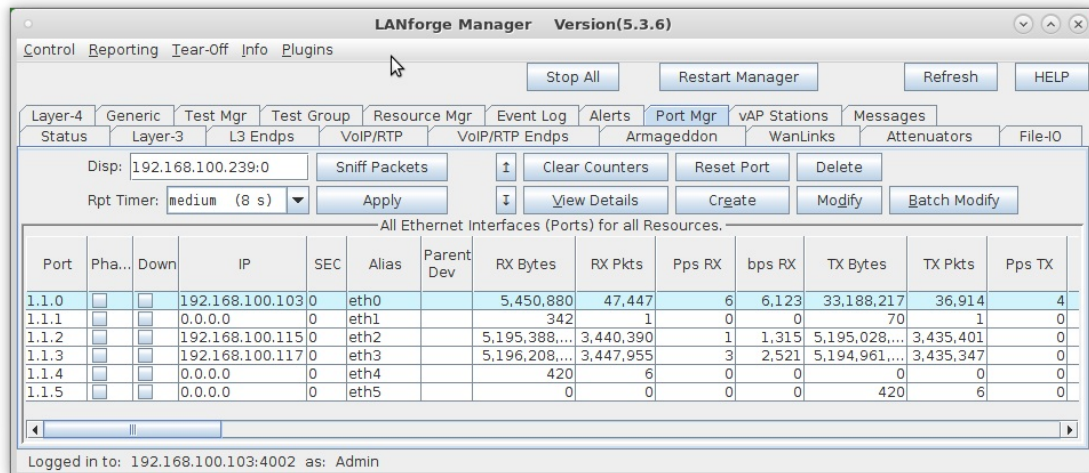
At the bottom of the window, it says "Logged in to: 192.168.100.103:4002 as: Admin".

B. Modify eth2 and eth3 to set a valid network IP address and mask



A. If your network has DHCP service, you can select the 'DHCP-IPv4' checkbox so that each port is a DHCP client and will acquire its IP address from your DHCP server

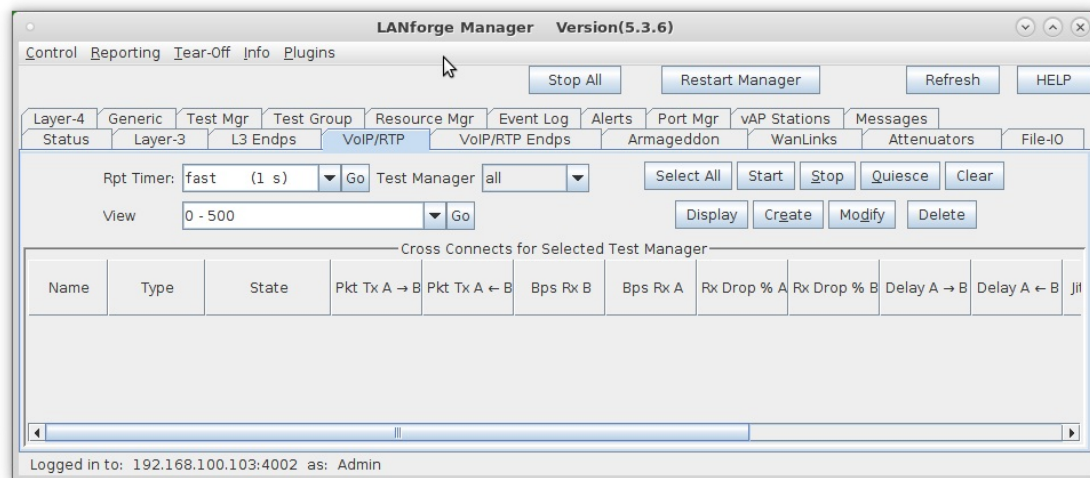
C. Verify the port configuration



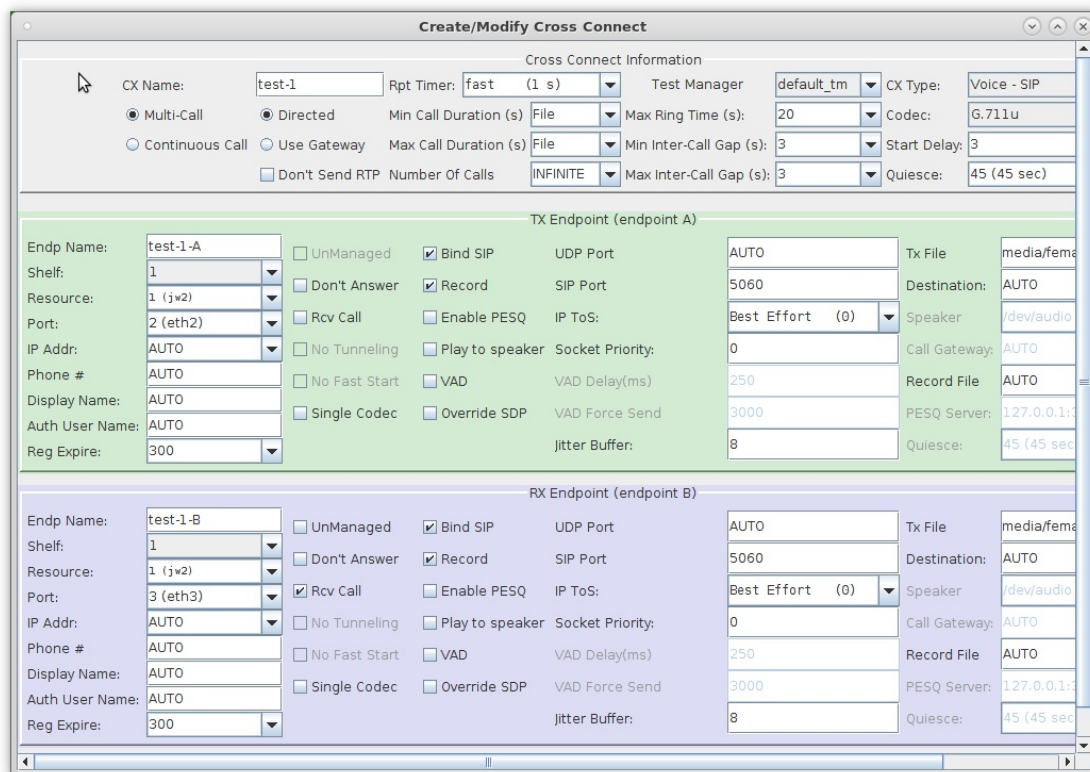
For more information see [LANforge User's Guide: Ports \(Interfaces\)](#)

3. Set up Test 1, a Directed VoIP call.

A. Go to the **VoIP/RTP** tab



B. Click the **Create** button:



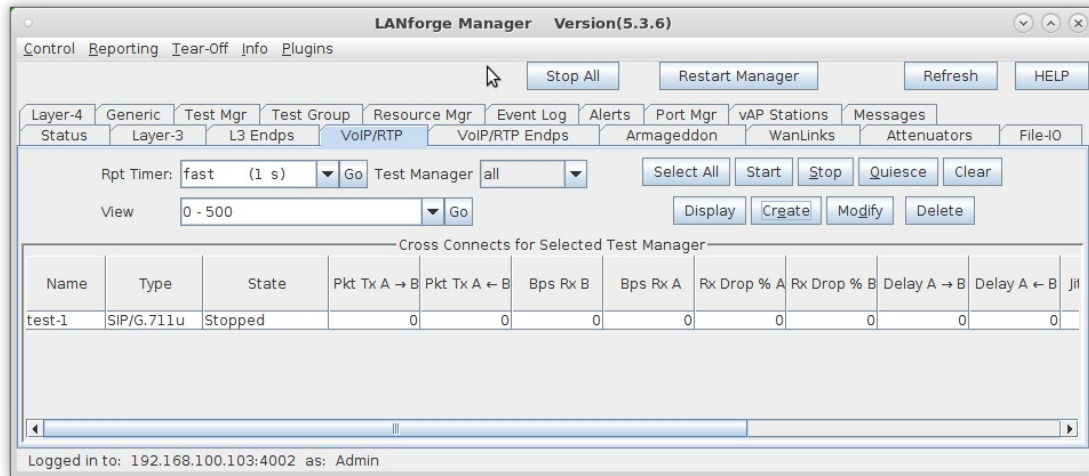
- Enter test-1 in the **CX Name** field
- Select the **Multi-Call** and **Directed** buttons
- Endpoint A is on port eth2 in this example. If you have a PESQ licensed server available, you can select Record and Enable PESQ.
- Endpoint B is on port eth3. If you are using PESQ, be sure to enter a Record File and the IP address and port of your PESQ licensed server. Be sure to select the **Rcv Call** checkbox for this endpoint to receive the call.
- Click **OK** to create the VoIP Directed call

C. Verify that the test call is created

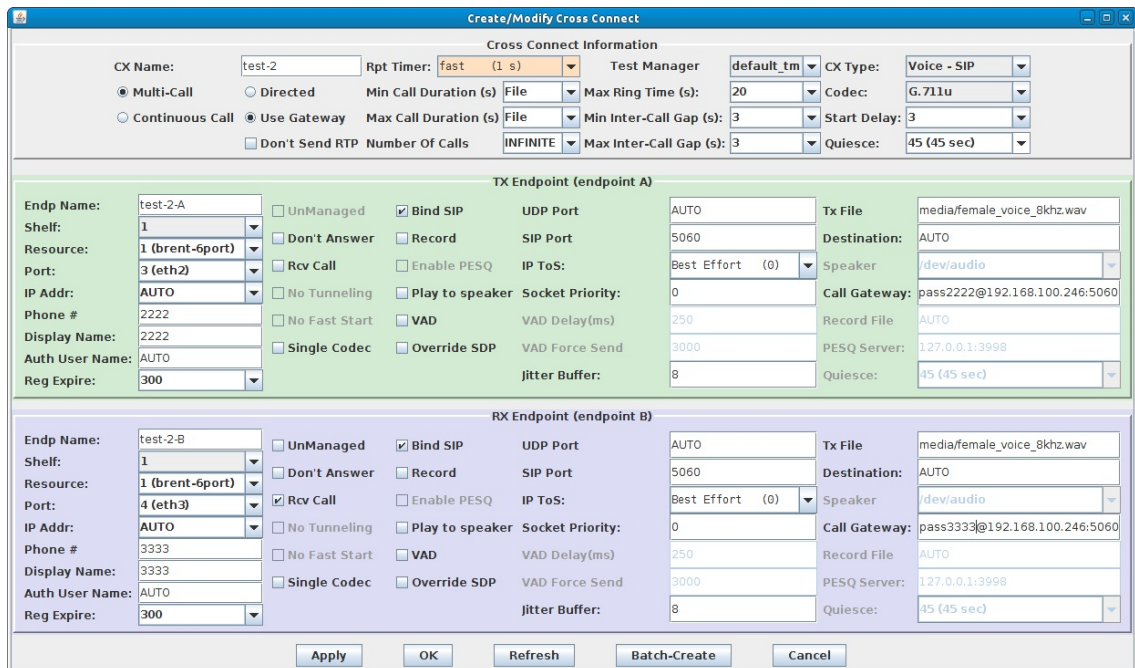
For more information see [LANforge User's Guide: VoIP Call Generator](#)

4. Set up Test 2, a Gateway VoIP call.

A. Go to the VoIP/RTP tab



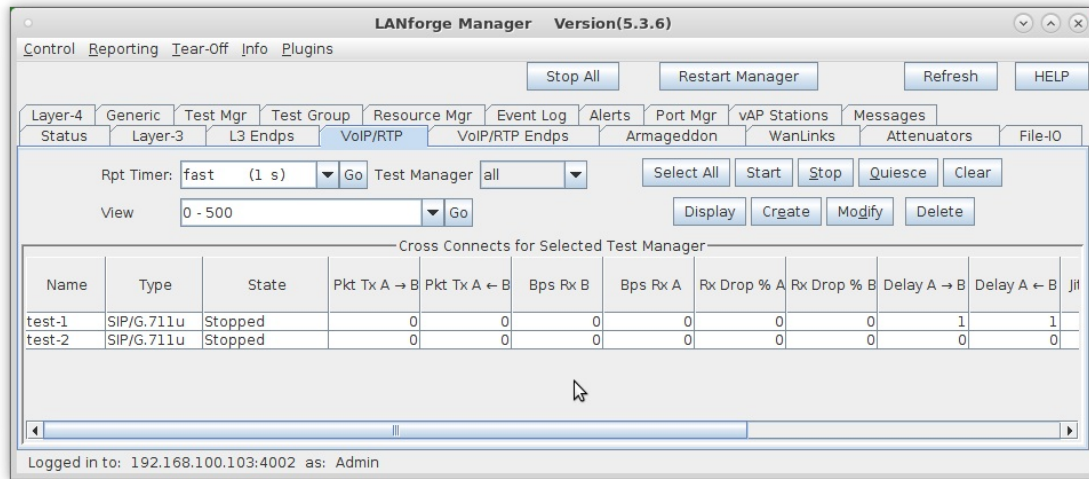
B. Click the Create button:



- Enter test-2 in the **CX Name** field
- Select the **Multi-Call** and **Use Gateway** buttons
- Endpoint A is on port eth2 in this example. Be sure to enter the proper username and password for the endpoint so that it can authenticate with the VoIP Gateway if necessary.
- Endpoint B is on port eth3. Be sure to select the **Rcv Call** checkbox for this endpoint to receive the call.
- Click **OK** to create the VoIP Gateway call



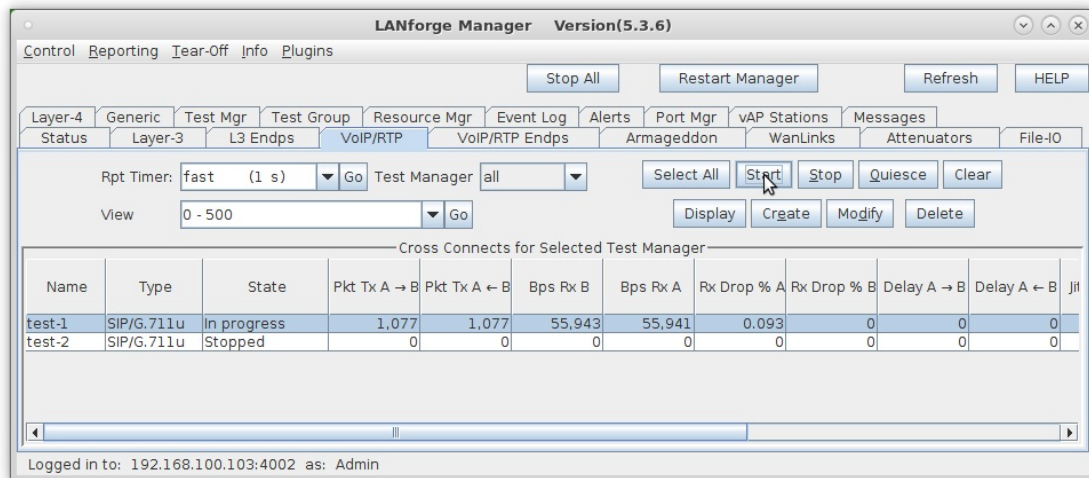
C. Verify that the test call is created



For more information see [LANforge User's Guide: VoIP Call Generator](#)

5. Run test-1 and test-2 individually.

A. Select test-1 and click the **Start** button



B. Go to the **VoIP/RTP Endps** tab to see detailed results:

Name	State	Reg State	PESQ	Tx Pkts	Rx Pkts	Tx Bytes	Rx Bytes	Dropped	OOO Pkts	Dup Pkts	jB Silence	jB Under
test-1-A	In progress	Unreg	7: 4.21	13,551	13,558	2,168,1...	2,169,2...	0	0	0	0	0
test-1-B	In progress	Unreg	7: 4.21	13,561	13,551	2,169,7...	2,168,1...	0	0	0	0	0
test-2-A	Stopped	Unreg	0: 0	0	0	0	0	0	0	0	0	0
test-2-B	Stopped	Unreg	0: 0	0	0	0	0	0	0	0	0	0

- A. The PESQ score will be reported after the first successful call is completed and updated after each subsequent call
- B. **NOTE:** Endpoints are unregistered while the call is in progress because they are not calling through the VoIP gateway

C. Stop test-1, select test-2 and click **Start**

Name	Type	State	Pkt Tx A → B	Pkt Tx A ← B	Bps Rx B	Bps Rx A	Rx Drop % A	Rx Drop % B	Delay A → B	Delay A ← B	Jit
test-1	SIP/G.711u	Stopped	15,752	15,762	57,886	57,923	0.07	0	0	0	0
test-2	SIP/G.711u	In progress	1,185	1,185	56,531	56,531	0.084	0	0	0	0

D. Go to the **VoIP/RTP Endps** tab to see detailed results:

Calls Attempted	Calls Completed	Calls Failed	CF 404	CF 408	CF Busy	CF Cancel...	Calls Ans...	Destination Addr	Source Addr	Elapsed
0	0	0	0	0	0	0	0	02161386	4826976	348
0	0	0	0	0	0	0	0	04826976	2161386	348
4	3	0	0	0	0	0	0	09201601	9502721	114
0	3	0	0	0	0	0	0	49502721	9201601	114

- A. PESQ remains 0:0 when it is disabled for the call in progress
- B. **NOTE:** Endpoints are registered with the VoIP gateway while the call is in progress
- C. Calls Attempted, Calls Completed and Calls Failed can be viewed by scrolling to the right on the **VoIP/RTP Endps** tab

For more information see [LANforge User's Guide: VoIP Call Generator](#)

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