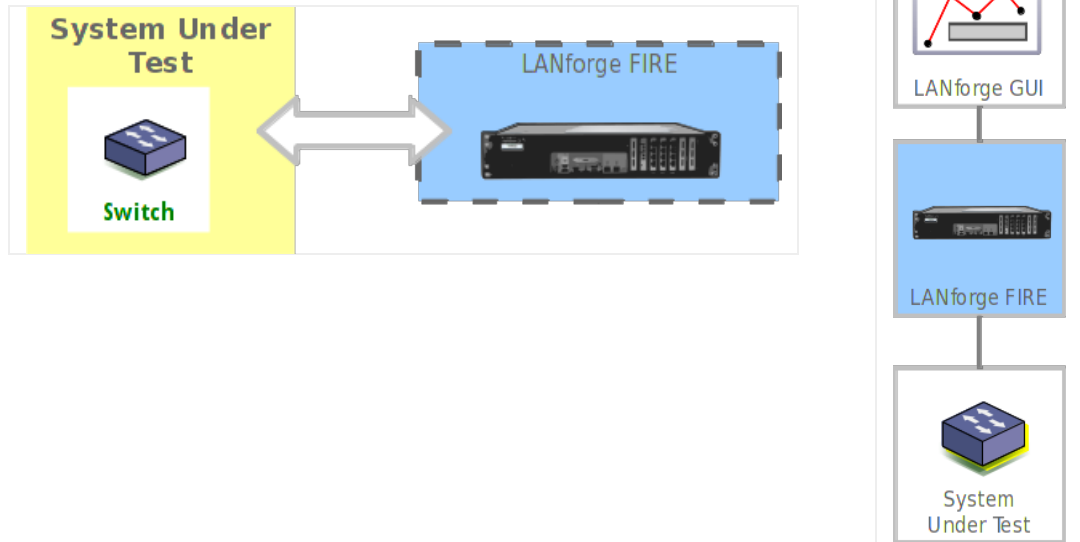


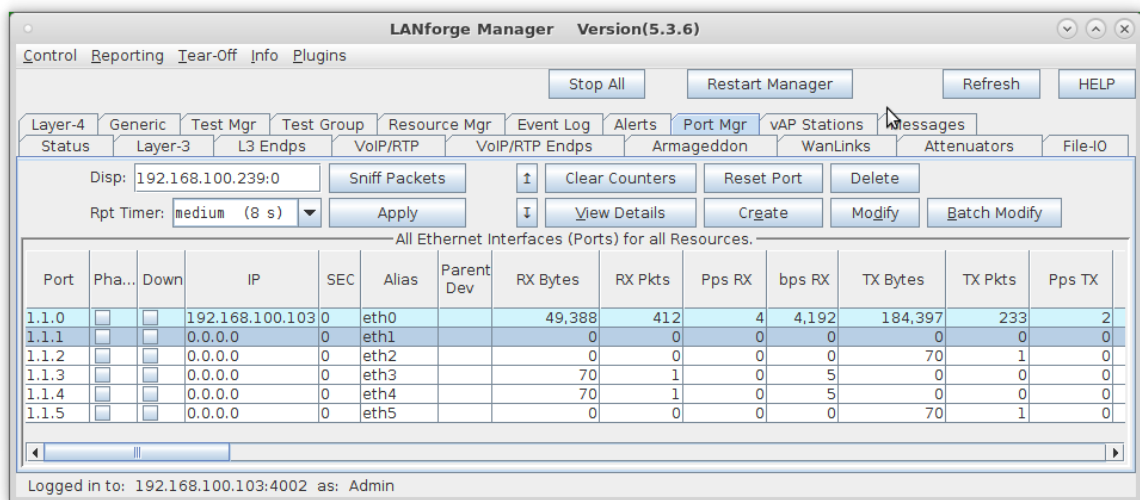
## Generating Traffic to a Switched Network

**Goal:** Set up and run traffic on a flat network.

In this test scenario, LANforge-FIRE is used to generate traffic between two ports on the same subnet (switch) in order to test throughput.



1. Connect two available data generating ports of your LANforge server to the DUT. In this example, the DUT is a switch.
2. Set up the LANforge ports so that they have valid IP addresses. This example uses static IP addresses, but you can also use DHCP if your network supports that.
  - A. Go to the Port Manager



LANforge Manager Version(5.3.6)

Control Reporting Tear-Off Info Plugins

Stop All Restart Manager Refresh HELP

Layer-4 Generic Test Mgr Test Group Resource Mgr Event Log Alerts Port Mgr vAP Stations Messages

Status Layer-3 L3 Endps VoIP/RTP VoIP/RTP Endps Armageddon WanLinks Attenuators File-IO

Disp: 192.168.100.239:0 Sniff Packets Clear Counters Reset Port Delete

Rpt Timer: medium (8 s) Apply View Details Create Modify Batch Modify

All Ethernet Interfaces (Ports) for all Resources.

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		49,388	412	4	4,192	184,397	233	2
1.1.1			0.0.0.0	0	eth1		0	0	0	0	0	0	0
1.1.2			0.0.0.0	0	eth2		0	0	0	0	70	1	0
1.1.3			0.0.0.0	0	eth3		70	1	0	5	0	0	0
1.1.4			0.0.0.0	0	eth4		70	1	0	5	0	0	0
1.1.5			0.0.0.0	0	eth5		0	0	0	0	70	1	0

Logged in to: 192.168.100.103:4002 as: Admin

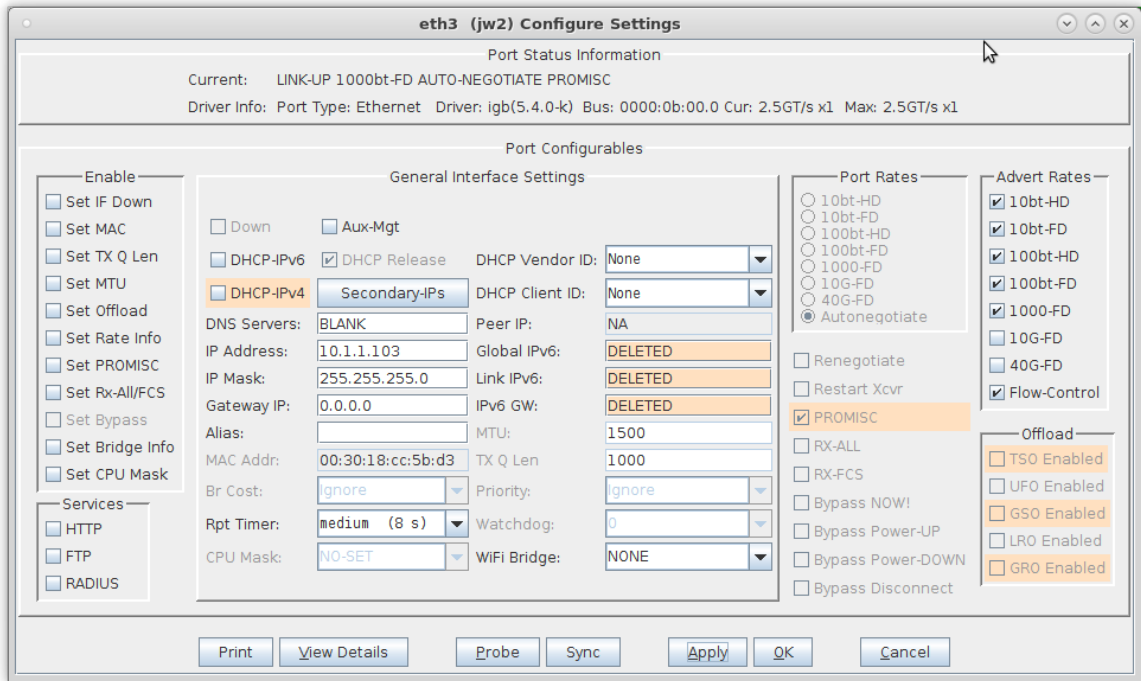
B. Modify port for Endpoint A (eth2)

The screenshot shows the 'eth2 (jw2) Configure Settings' window. At the top, it displays 'Port Status Information' with the current status 'LINK-UP 1000bt-FD AUTO-NEGOTIATE TSO GSO GRO' and driver info 'Port Type: Ethernet Driver: igb(5.4.0-k) Bus: 0000:0a:00.0 Cur: 2.5GT/s x1 Max: 2.5GT/s x1'. Below this is the 'Port Configurables' section, which is divided into several panels:

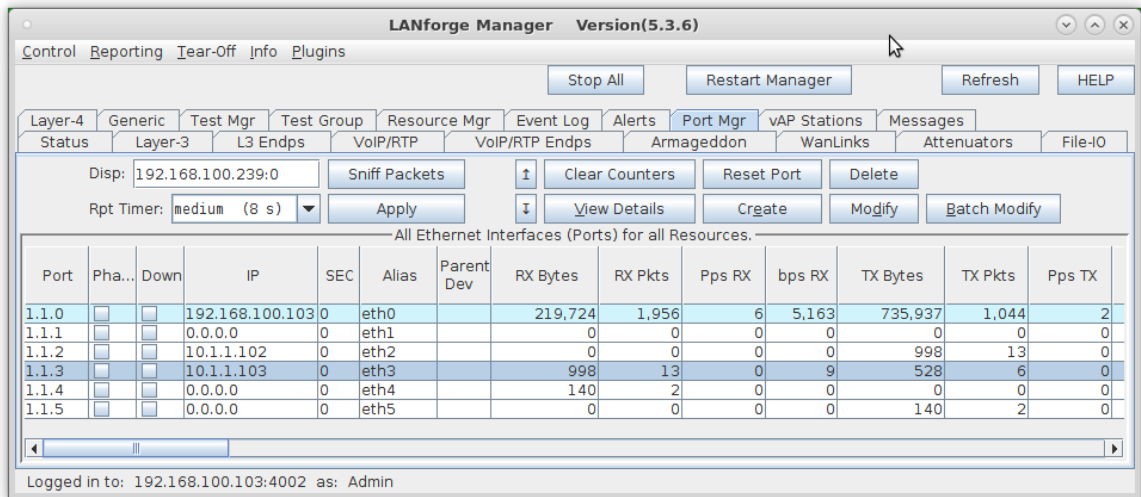
- Enable:** A list of checkboxes for various settings like 'Set IF Down', 'Set MAC', 'Set TX Q Len', 'Set MTU', 'Set Offload', 'Set Rate Info', 'Set PROMISC', 'Set Rx-All/FCS', 'Set Bypass', 'Set Bridge Info', and 'Set CPU Mask'. There is also a 'Services' section with checkboxes for 'HTTP', 'FTP', and 'RADIUS'.
- General Interface Settings:** A central panel with various fields and checkboxes. It includes 'Down' and 'Aux-Mgt' checkboxes, 'DHCP-IPv6' and 'DHCP Release' checkboxes, and a 'Secondary-IPs' button. Fields include 'DNS Servers: BLANK', 'IP Address: 10.1.1.102', 'IP Mask: 255.255.255.0', 'Gateway IP: 0.0.0.0', 'MAC Addr: 00:30:18:cc:5b:d2', 'Rpt Timer: medium (8 s)', and 'CPU Mask: NO-SET'. Other fields include 'DHCP Vendor ID: None', 'DHCP Client ID: None', 'Peer IP: NA', 'Global IPv6: AUTO', 'Link IPv6: AUTO', 'IPv6 GW: AUTO', 'MTU: 1500', 'TX Q Len: 1000', 'Priority: ignore', 'Watchdog: 0', and 'WiFi Bridge: NONE'.
- Port Rates:** A panel with radio buttons for '10bt-HD', '10bt-FD', '100bt-HD', '100bt-FD', '1000-FD', '10G-FD', and '40G-FD'. The 'Autonegotiate' option is selected. There are also checkboxes for 'Renegotiate', 'Restart Xcvr', 'PROMISC', 'RX-ALL', 'RX-FCS', 'Bypass NOW!', 'Bypass Power-UP', 'Bypass Power-DOWN', and 'Bypass Disconnect'.
- Advert Rates:** A panel with checkboxes for '10bt-HD', '10bt-FD', '100bt-HD', '100bt-FD', '1000-FD', '10G-FD', '40G-FD', and 'Flow-Control'. The 'Flow-Control' checkbox is checked.
- Offload:** A panel with checkboxes for 'TSO Enabled', 'UFO Enabled', 'GSO Enabled', 'LRO Enabled', and 'GRO Enabled'. The 'TSO Enabled', 'GSO Enabled', and 'GRO Enabled' checkboxes are checked.

At the bottom of the window, there are buttons for 'Print', 'View Details', 'Probe', 'Sync', 'Apply', 'OK', and 'Cancel'.

C. Modify port for Endpoint B (eth3)



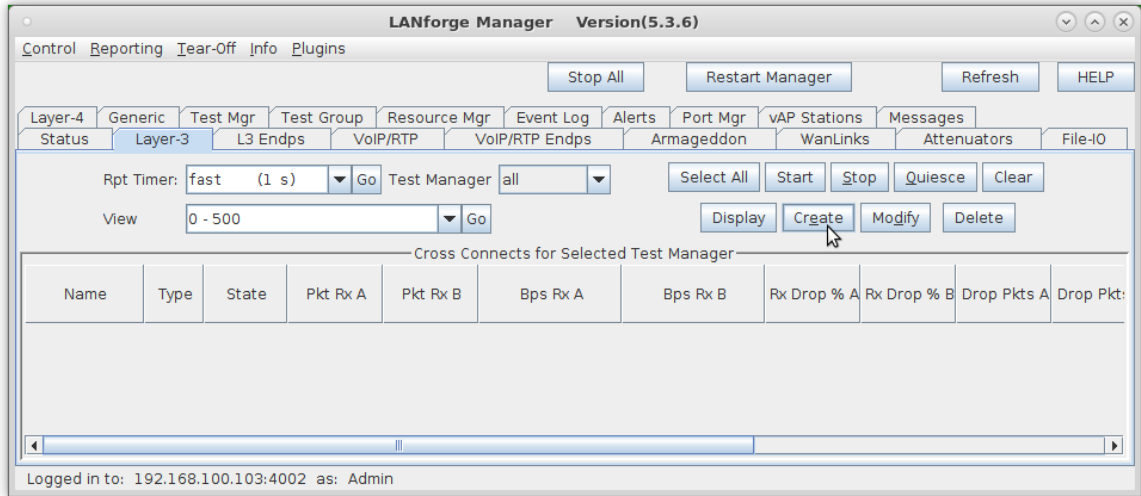
D. Verify the port configuration



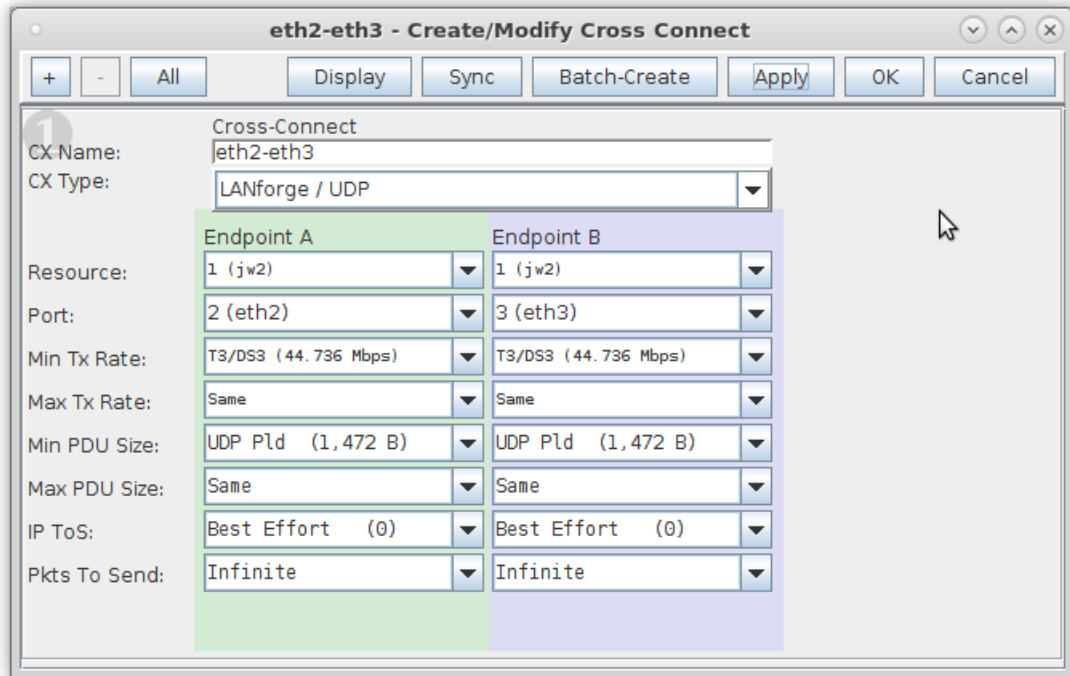
For more information see [LANforge User's Guide: Ports \(Interfaces\)](#)

3. Create a Layer-3 connection using the two configured ports.

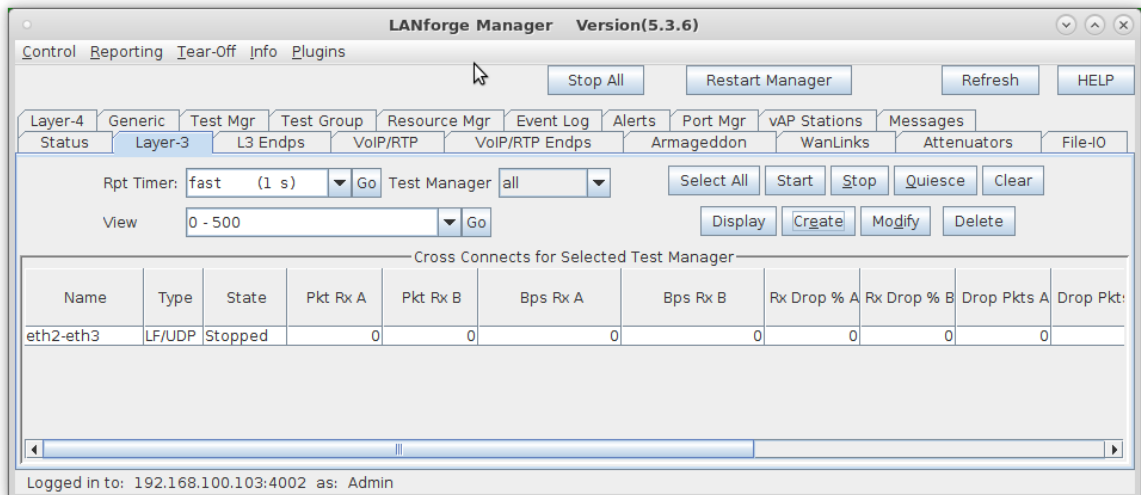
A. Go to the **Layer-3** tab



B. Create a new Cross-Connect

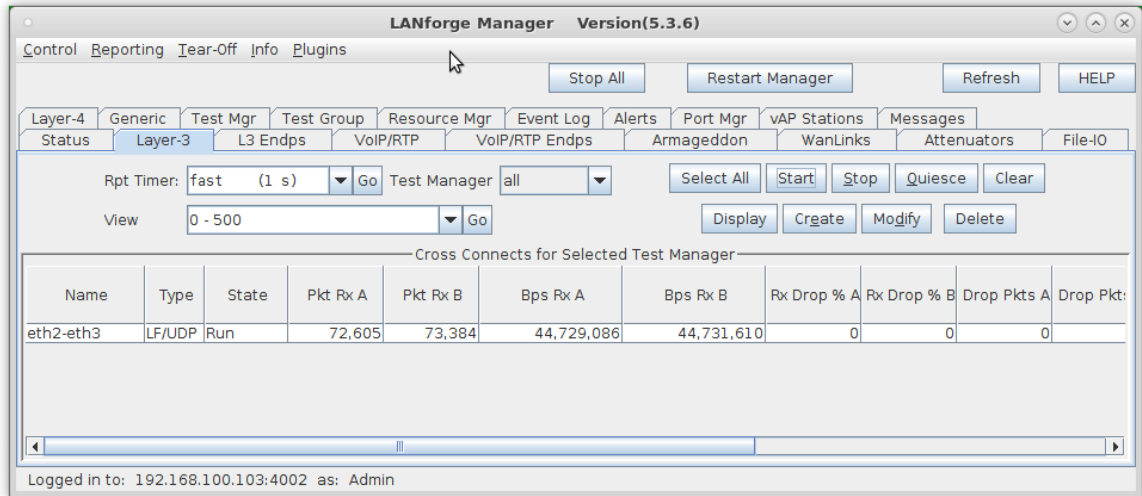


C. Verify the new Cross-Connect

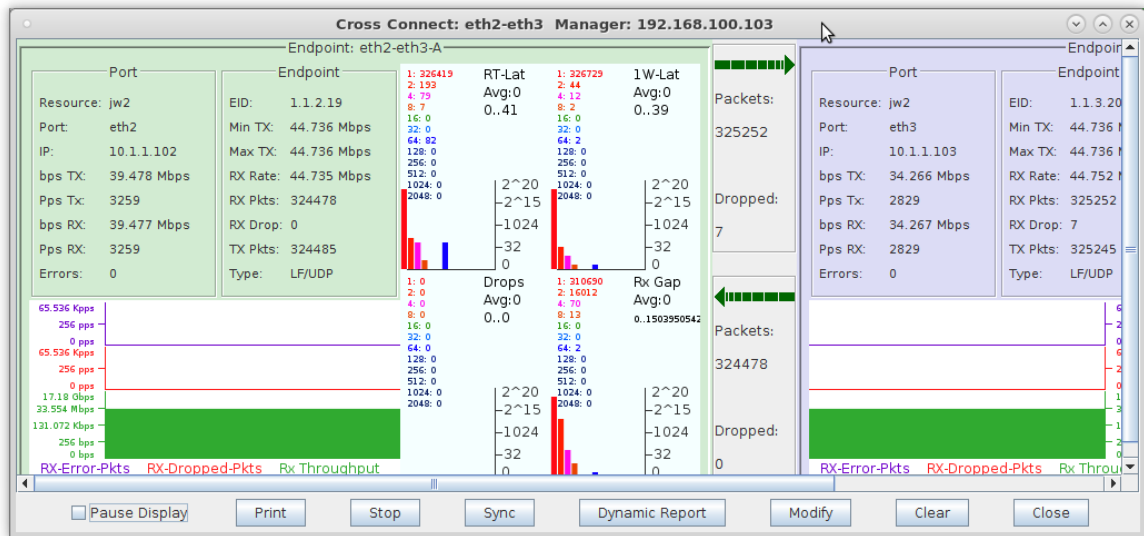


For more information see [LANforge User's Guide: Layer-3 Cross-Connects \(FIRE\)](#)

- 4. Run traffic and observe results.
  - A. Select the cross-connect on the **Layer-3** tab, click **Start** and then **Display**



- B. View the Layer-3 cross-connect display



For more information see [LANforge User's Guide: Layer-3 Cross-Connect Display](#)

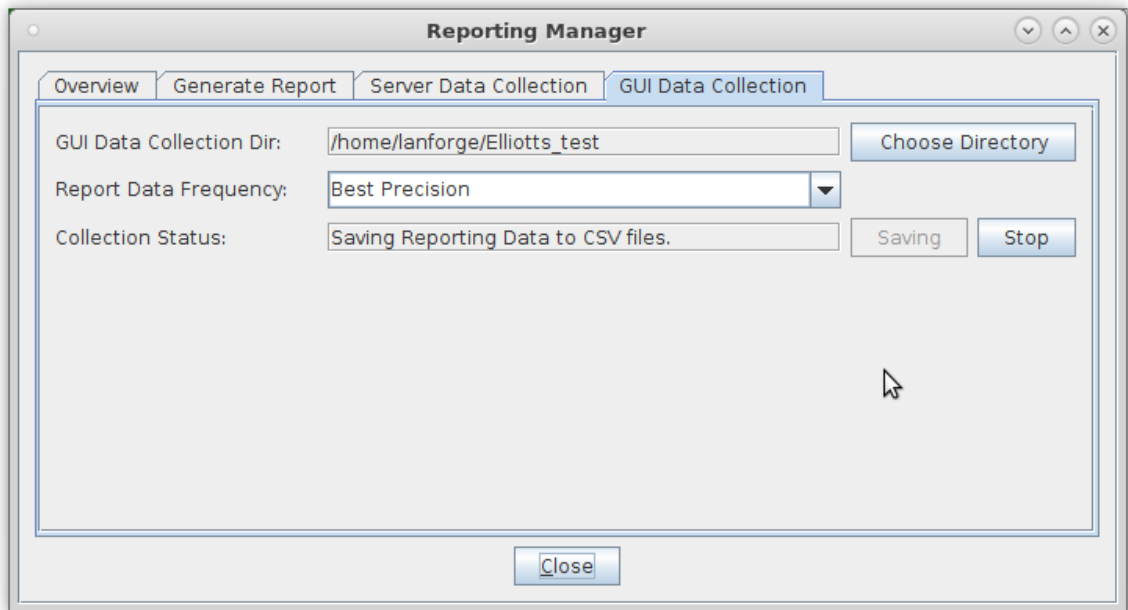
- 5. In this case, the overall throughput of the DUT is approximately 76Mbps. The Report Manager can also be used to record the throughput over time.

A. Select **Reporting Manager** from the **Reporting** pull-down menu

The screenshot shows the LANforge Manager Version 5.3.6 interface. The 'Reporting' menu is open, and 'Reporting Manager' is selected. The interface includes various tabs like 'Control', 'Reporting', 'Tear-Off', 'Info', and 'Plugins'. Below the menu, there are buttons for 'Stop All', 'Restart Manager', 'Refresh', and 'HELP'. A table titled 'Cross Connects for Selected Test Manager' is visible, showing data for a connection named 'eth2-eth3'. The status bar at the bottom indicates the user is logged in as 'Admin' from IP '192.168.100.103:4002'.

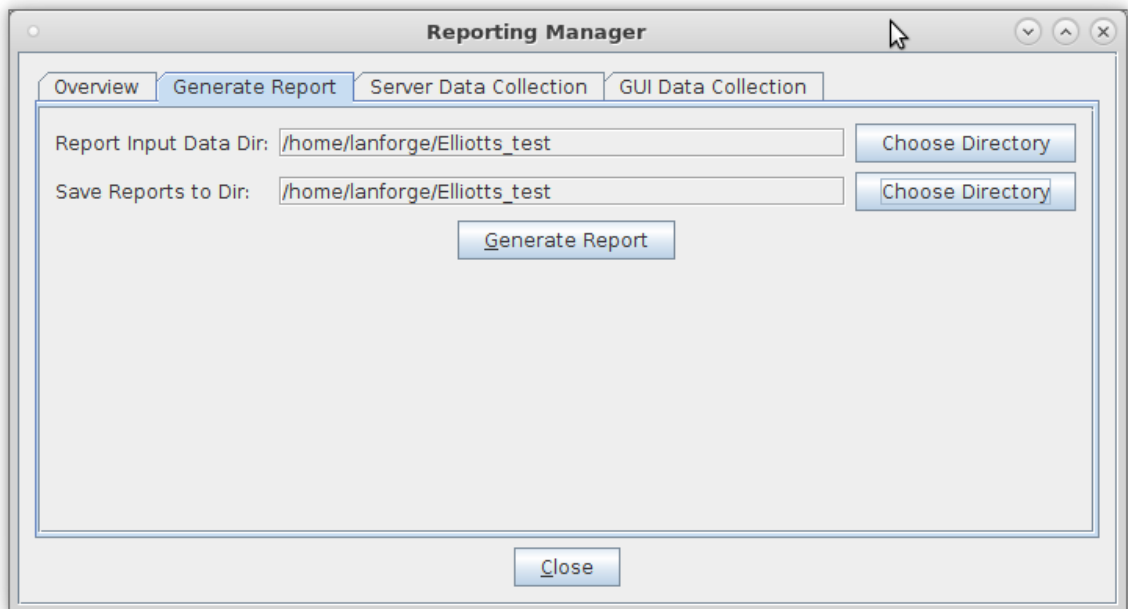
Name	Type	State	Pkt Rx A	Pkt Rx B	Bps Rx A	Bps Rx B	Rx Drop % A	Rx Drop % B	Drop Pkts A	Drop Pkts B
eth2-eth3	LF/UDP	Run	1,125,730	1,126,994	44,700,324	44,701,076	0	0	0	0

B. Record test data by following these steps:



- A. Select the **GUI Data Collection** tab.
- B. Choose a directory to save raw (.csv) data.
- C. Click **Save** to start the data collection.
- D. After desired test duration, click **Stop**.
- E. **NOTE:** Your report will look cleaner if you stop traffic about 2 minutes before you stop saving data.

C. In the Generate Report tab, choose a directory to save the HTML report. **NOTE:** Make sure your directory name does not include any special characters such as apostrophes.



- A. Click **Generate Report**.

D. Select the entities to be included

The screenshot shows the 'Report Generator' window with the following configuration:

- Report Raw Data Dir: /home/jreynolds/Documents/lf-data
- Save Reports to Dir: /home/jreynolds/Documents/lf-reports
- Report Name: report-1381182882449
- Sample Interval: 0
- Width: 640, Height: 480
- Start Time Offset: All (0 sec)
- Duration: All (0 sec)

The 'Available Data Files' table is as follows:

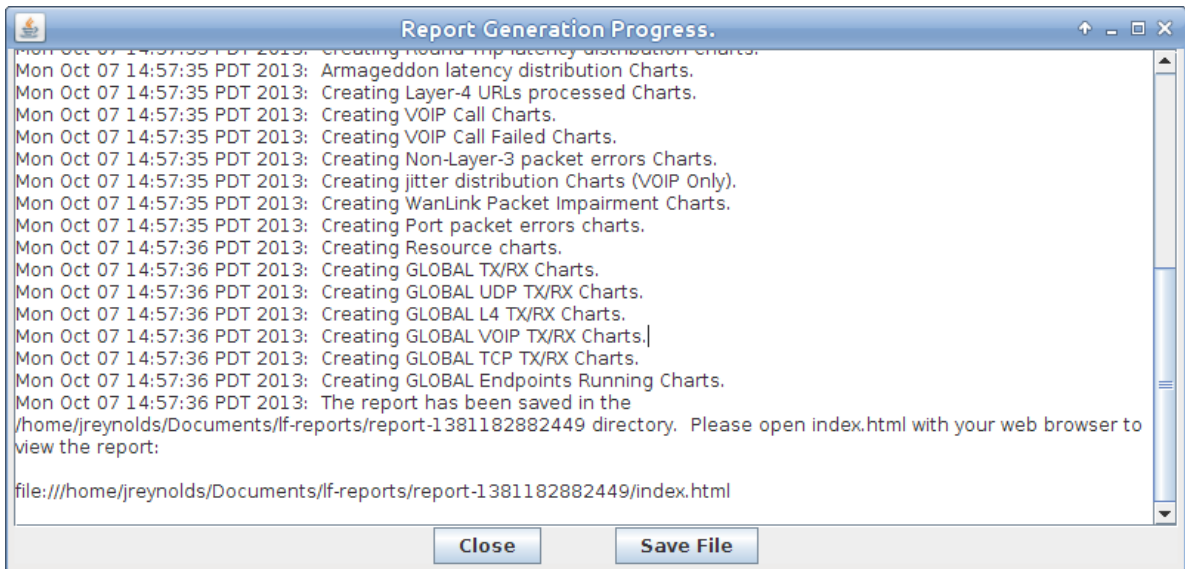
Owner	Entity	Report Start Time	Report Durati...	Entity ID	Report File Name
Global-Stats	GLOBAL	2013-10-07 14:53:57	0:0:35		GLOBAL_1381182839.csv
lanforge-VirtualBox	lanforge-VirtualBox	2013-10-07 14:54:00	0:0:28	1.0	resource_lanforge-VirtualBox_1.0
eth2-eth3	eth2-eth3-A	2013-10-07 14:54:01	0:0:33	1.1.2.1.1	eth2-eth3-A_1381182839.csv
eth2-eth3	eth2-eth3-B	2013-10-07 14:54:02	0:0:33	1.1.3.2.1	eth2-eth3-B_1381182839.csv
lanforge-VirtualBox	eth0	2013-10-07 14:54:03	0:0:21	1.1.1	eth0_1.1.1_1381182839.csv
lanforge-VirtualBox	eth1	2013-10-07 14:54:03	0:0:21	1.1.0	eth1_1.1.0_1381182839.csv
lanforge-VirtualBox	eth2	2013-10-07 14:54:03	0:0:21	1.1.2	eth2_1.1.2_1381182839.csv
lanforge-VirtualBox	eth3	2013-10-07 14:54:03	0:0:21	1.1.3	eth3_1.1.3_1381182839.csv
lanforge-VirtualBox	lanforge-VirtualBox	2013-10-07 14:54:04	0:0:21	1.1	resource_lanforge-VirtualBox_1.1

E. Click **Generate Report** to start the report generation

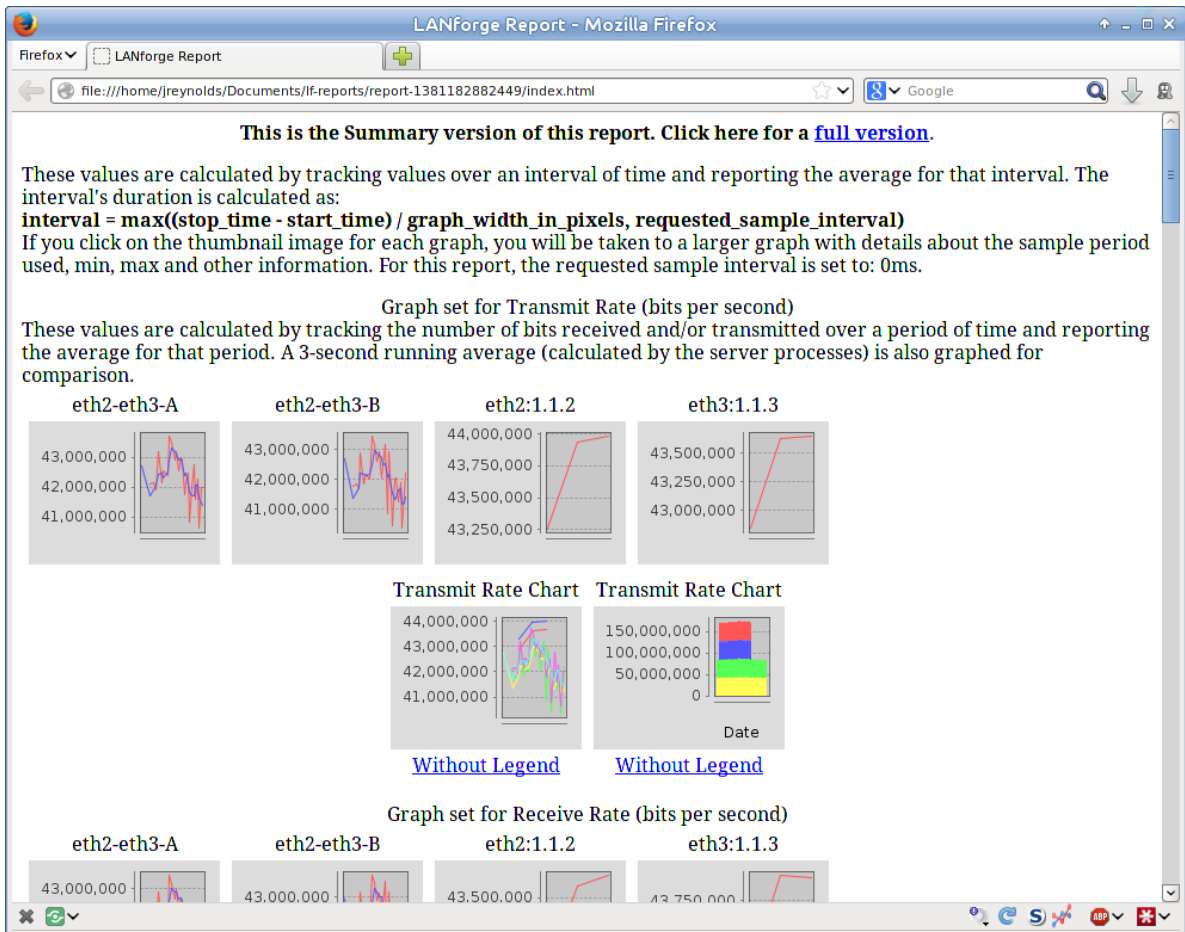
This screenshot is identical to the previous one, but the 'Generate Report' button is highlighted with a red mouse cursor, indicating the next step in the process.



F. This window lists all the reports being generated. The last line indicates the location of the HTML report.



G. View the HTML report



For more information see [LANforge User's Guide: Reporting](#)