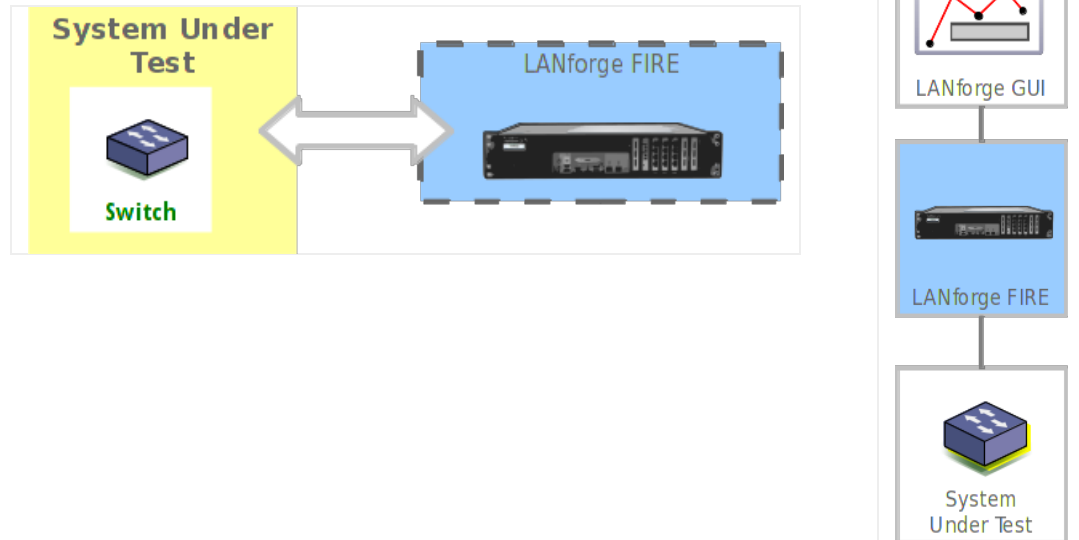


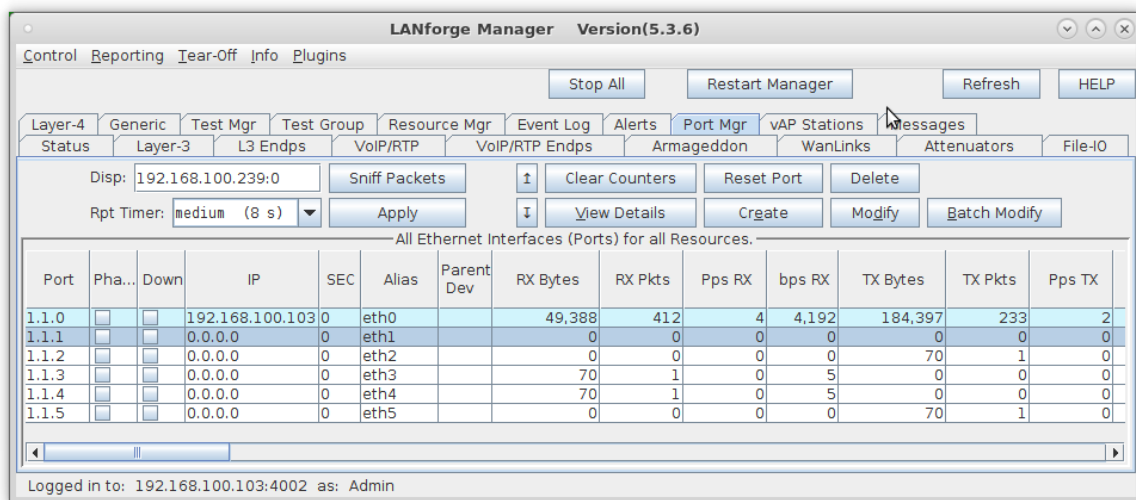
Generating Traffic to a Switched Network

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



B. Modify port for Endpoint A (eth2)

eth2 (jw2) Configure Settings

Port Status Information

Current: LINK-UP 1000bt-FD AUTO-NEGOTIATE TSO GSO GRO

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

Port Configurables

General Interface Settings

Enable

- ☐ 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
- ☐ Set CPU Mask

Services

- ☐ HTTP
- ☐ FTP
- ☐ RADIUS

General Interface Settings

☐ Down ☐ Aux-Mgt

☐ DHCP-IPv6 ☒ DHCP Release DHCP Vendor ID: None

☒ DHCP-IPv4 Secondary-IPs DHCP Client ID: None

DNS Servers: BLANK Peer IP: NA

IP Address: 10.1.1.102 Global IPv6: AUTO

IP Mask: 255.255.255.0 Link IPv6: AUTO

Gateway IP: 0.0.0.0 IPv6 GW: AUTO

Alias: MTU: 1500

MAC Addr: 00:30:18:cc:5b:d2 TX Q Len: 1000

Br Cost: ignore Priority: ignore

Rpt Timer: medium (8 s) Watchdog: 0

CPU Mask: NO-SET WiFi Bridge: NONE

Port Rates

- ☐ 10bt-HD
- ☐ 10bt-FD
- ☐ 100bt-HD
- ☐ 100bt-FD
- ☐ 1000-FD
- ☐ 10G-FD
- ☐ 40G-FD
- ☒ Autonegotiate

☐ Renegotiate

☐ Restart Xcvr

☐ PROMISC

☐ RX-ALL

☐ RX-FCS

☐ Bypass NOW!

☐ Bypass Power-UP

☐ Bypass Power-DOWN

☐ Bypass Disconnect

Advert Rates

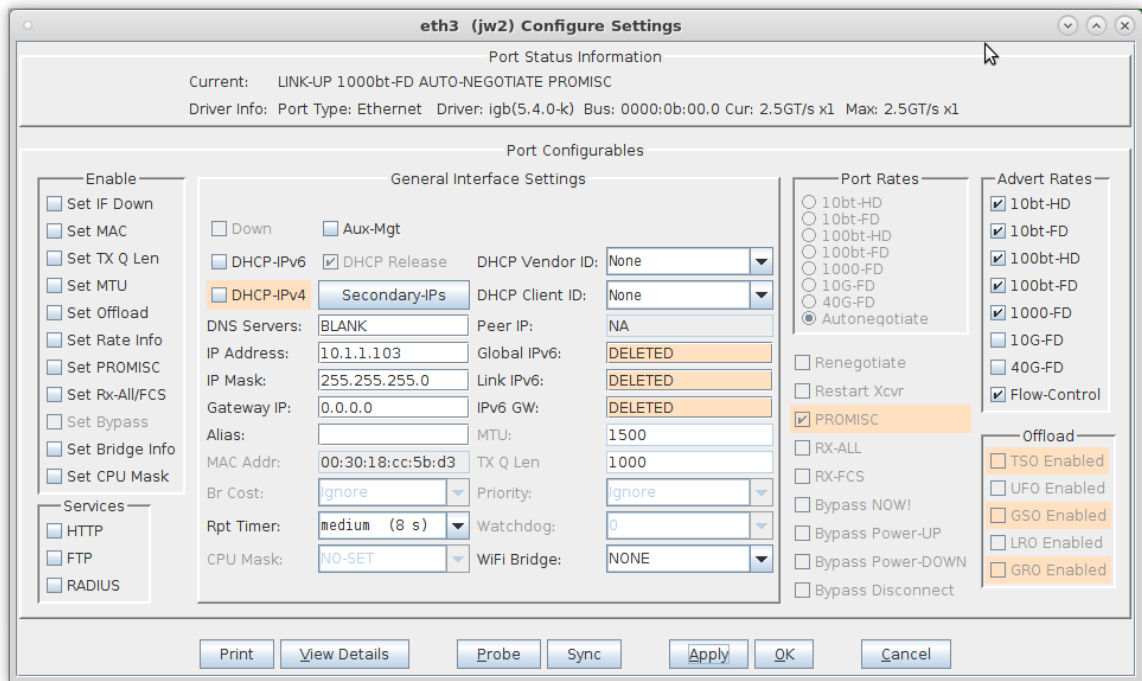
- ☒ 10bt-HD
- ☒ 10bt-FD
- ☒ 100bt-HD
- ☒ 100bt-FD
- ☒ 1000-FD
- ☐ 10G-FD
- ☐ 40G-FD
- ☒ Flow-Control

Offload

- ☒ TSO Enabled
- ☐ UFO Enabled
- ☒ GSO Enabled
- ☐ LRO Enabled
- ☒ GRO Enabled

Print View Details Probe Sync Apply OK Cancel

C. Modify port for Endpoint B (eth3)



The screenshot shows the 'eth3 (jw2) Configure Settings' window. The 'Port Status Information' section at the top indicates the port is 'LINK-UP 1000bt-FD AUTO-NEGOTIATE PROMISC'. The 'Port Configurables' section is divided into 'General Interface Settings' and 'Port Rates'. In 'General Interface Settings', 'DHCP-IPv4' is selected, and the 'Secondary-IPs' tab is active. The 'Port Rates' section shows 'Autonegotiate' selected. The 'Advert Rates' section shows '1000-FD' selected. The 'Offload' section shows 'TSO Enabled', 'GSO Enabled', and 'GRO Enabled' selected. The 'Services' section shows 'HTTP', 'FTP', and 'RADIUS' selected. The 'Print', 'View Details', 'Probe', 'Sync', 'Apply', 'OK', and 'Cancel' buttons are at the bottom.

eth3 (jw2) Configure Settings

Port Status Information

Current: LINK-UP 1000bt-FD AUTO-NEGOTIATE PROMISC

Driver Info: Port Type: Ethernet Driver: igb(5.4.0-k) Bus: 0000:0b:00.0 Cur: 2.5GT/s x1 Max: 2.5GT/s x1

Port Configurables

General Interface Settings

Enable

- ☐ 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
- ☐ Set CPU Mask

Services

- ☐ HTTP
- ☐ FTP
- ☐ RADIUS

General Interface Settings

☐ Down ☐ Aux-Mgt

☐ DHCP-IPv6 ☒ DHCP Release DHCP Vendor ID: None

☒ DHCP-IPv4 Secondary-IPs DHCP Client ID: None

DNS Servers: BLANK Peer IP: NA

IP Address: 10.1.1.103 Global IPv6: DELETED

IP Mask: 255.255.255.0 Link IPv6: DELETED

Gateway IP: 0.0.0.0 IPv6 GW: DELETED

Alias: MTU: 1500

MAC Addr: 00:30:18:cc:5b:d3 TX Q Len: 1000

Br Cost: ignore Priority: ignore

Rpt Timer: medium (8 s) Watchdog: 0

CPU Mask: NO-SET WiFi Bridge: NONE

Port Rates

- ☐ 10bt-HD
- ☐ 10bt-FD
- ☐ 100bt-HD
- ☐ 100bt-FD
- ☐ 1000-FD
- ☐ 10G-FD
- ☐ 40G-FD
- ☒ Autonegotiate

☐ Renegotiate

☐ Restart Xcvr

☒ PROMISC

☐ RX-ALL

☐ RX-FCS

☐ Bypass NOW!

☐ Bypass Power-UP

☐ Bypass Power-DOWN

☐ Bypass Disconnect

Advert Rates

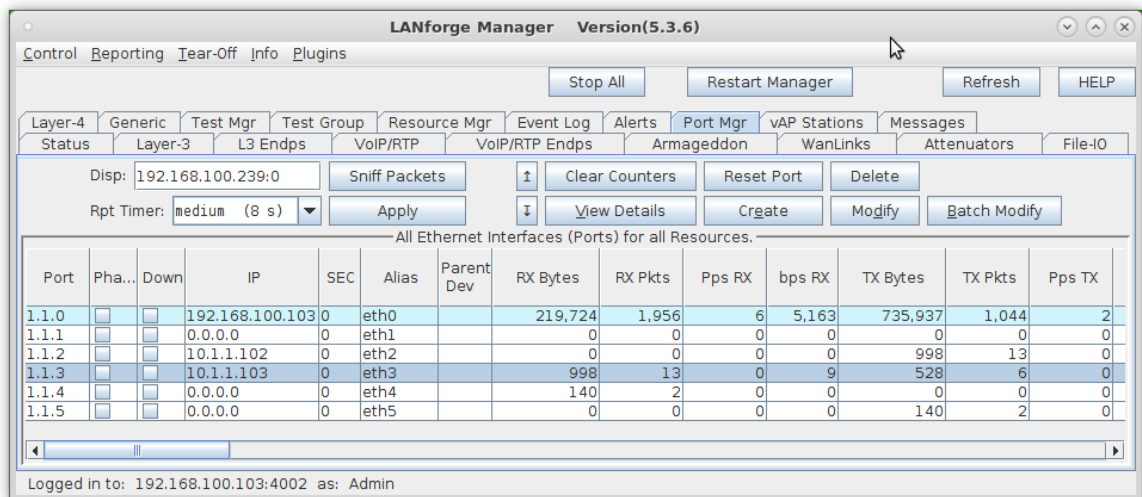
- ☒ 10bt-HD
- ☒ 10bt-FD
- ☒ 100bt-HD
- ☒ 100bt-FD
- ☒ 1000-FD
- ☐ 10G-FD
- ☐ 40G-FD
- ☒ Flow-Control

Offload

- ☒ TSO Enabled
- ☐ UFO Enabled
- ☒ GSO Enabled
- ☐ LRO Enabled
- ☒ GRO Enabled

Print View Details Probe Sync Apply OK Cancel

D. Verify the port configuration



The screenshot shows the 'LANforge Manager Version(5.3.6)' window. The 'Control' tab is selected. The 'Port Mgr' sub-tab is active. The 'Status' section shows 'Disp: 192.168.100.239:0' and 'Rpt Timer: medium (8 s)'. The 'All Ethernet Interfaces (Ports) for all Resources' table is displayed below. 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 table shows data for ports 1.1.0 through 1.1.5. The status bar at the bottom indicates 'Logged in to: 192.168.100.103:4002 as: Admin'.

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.

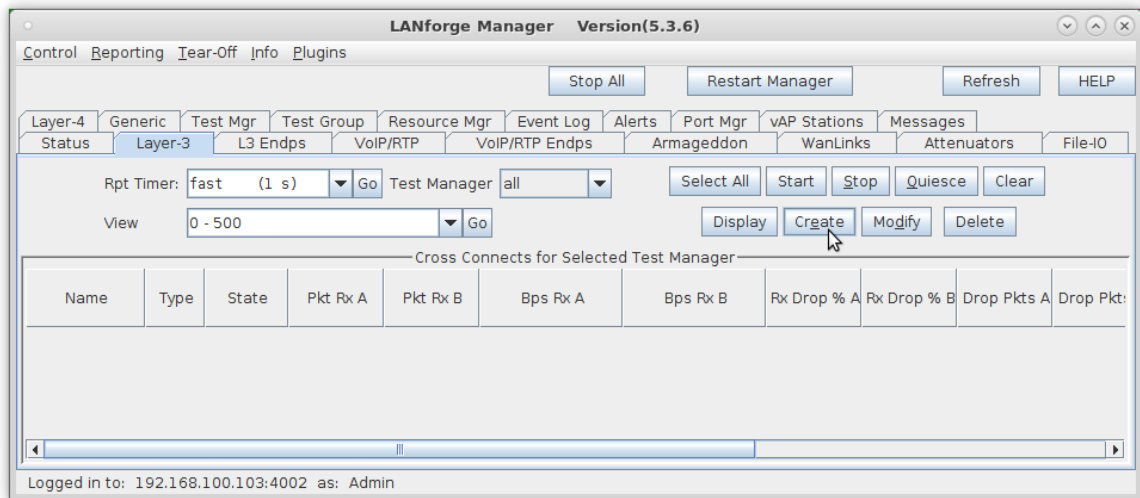
Port	Pha...	Down	IP	SEC	Alias	Parent Dev	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX
1.1.0			192.168.100.103	0	eth0		219,724	1,956	6	5,163	735,937	1,044	2
1.1.1			0.0.0.0	0	eth1		0	0	0	0	0	0	0
1.1.2			10.1.1.102	0	eth2		0	0	0	0	998	13	0
1.1.3			10.1.1.103	0	eth3		998	13	0	9	528	6	0
1.1.4			0.0.0.0	0	eth4		140	2	0	0	0	0	0
1.1.5			0.0.0.0	0	eth5		0	0	0	0	140	2	0

Logged in to: 192.168.100.103:4002 as: Admin

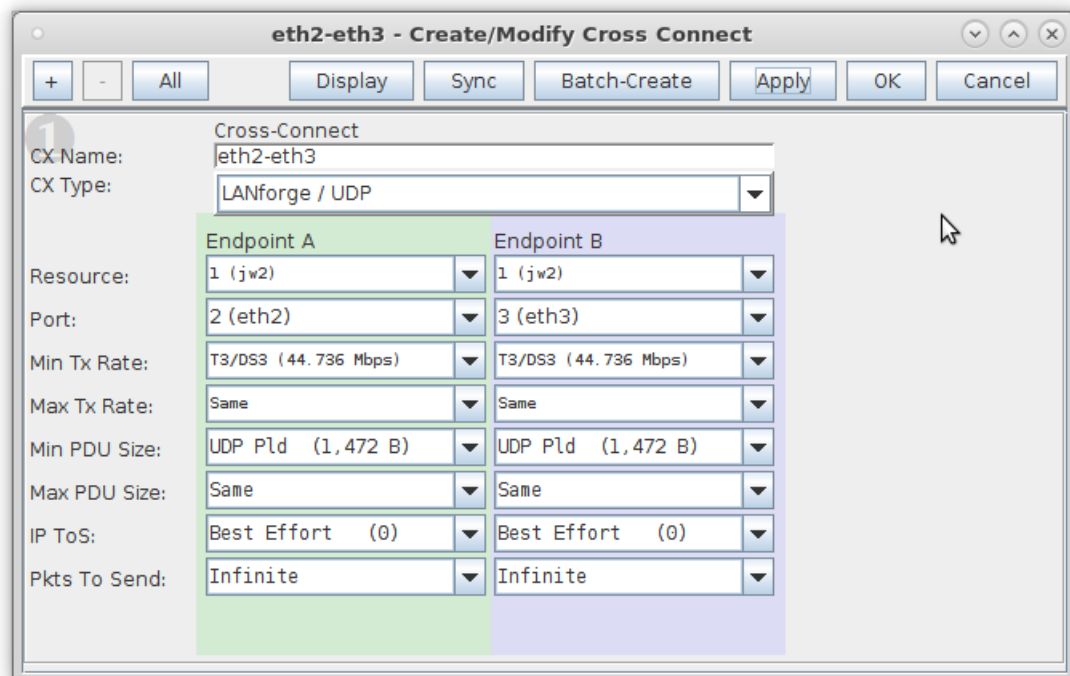
For more information see [LANforge User's Guide: Ports \(Interfaces\)](#)

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

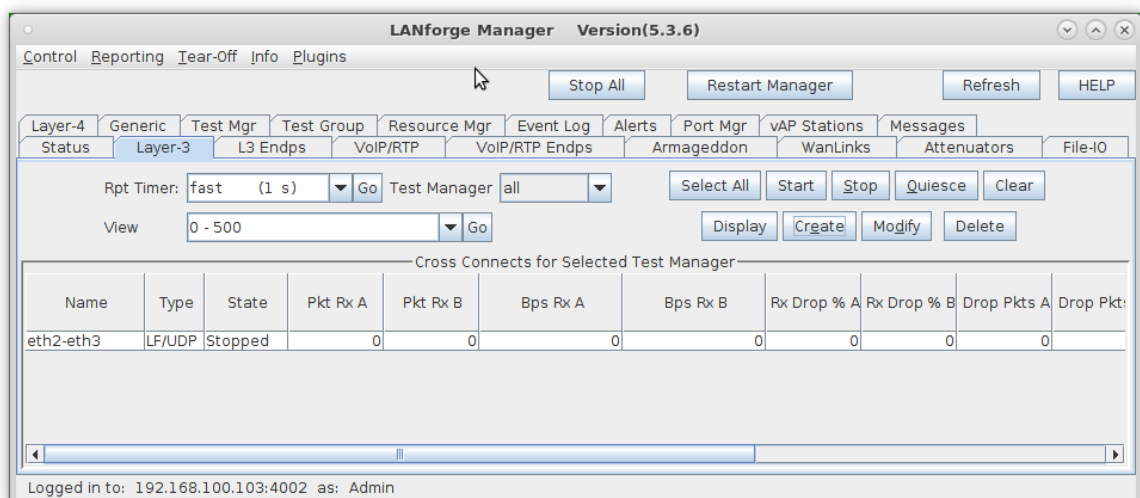
A. Go to the **Layer-3** tab



B. Create a new Cross-Connect



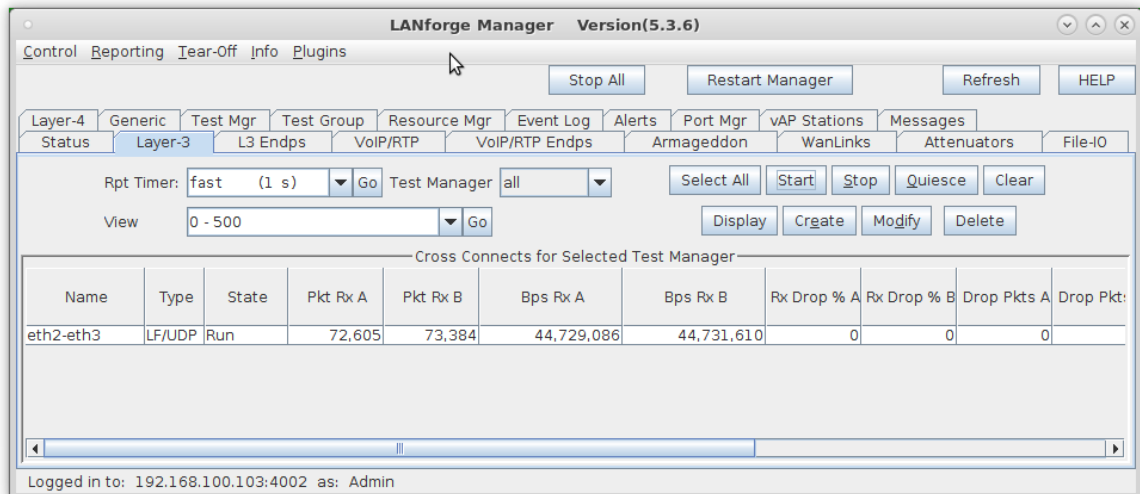
C. Verify the new Cross-Connect



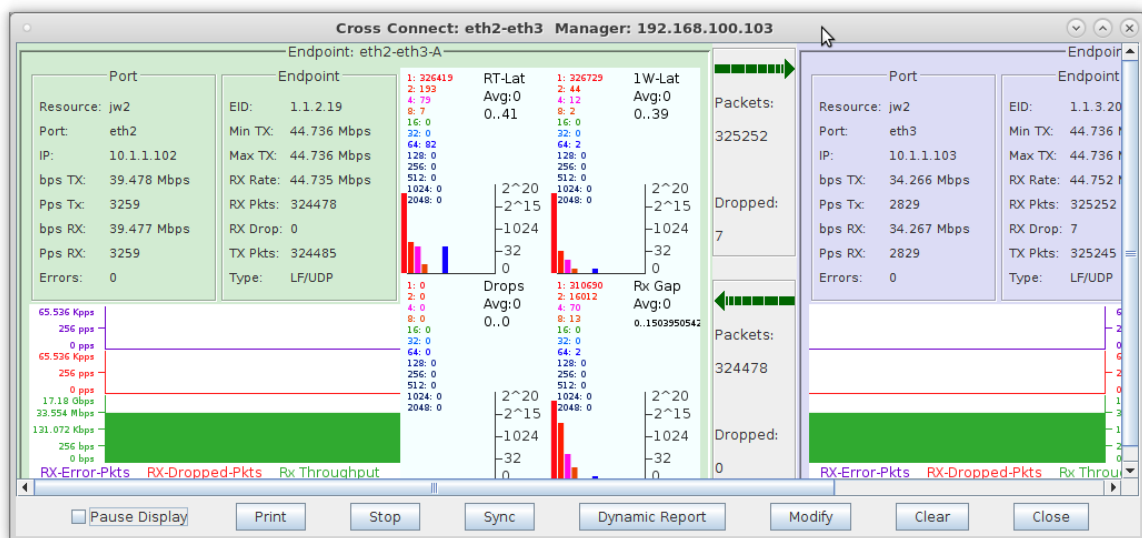
For more information see [LANforge User's Guide: Layer-3 Cross-Connects \(FIRE\)](#)

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.

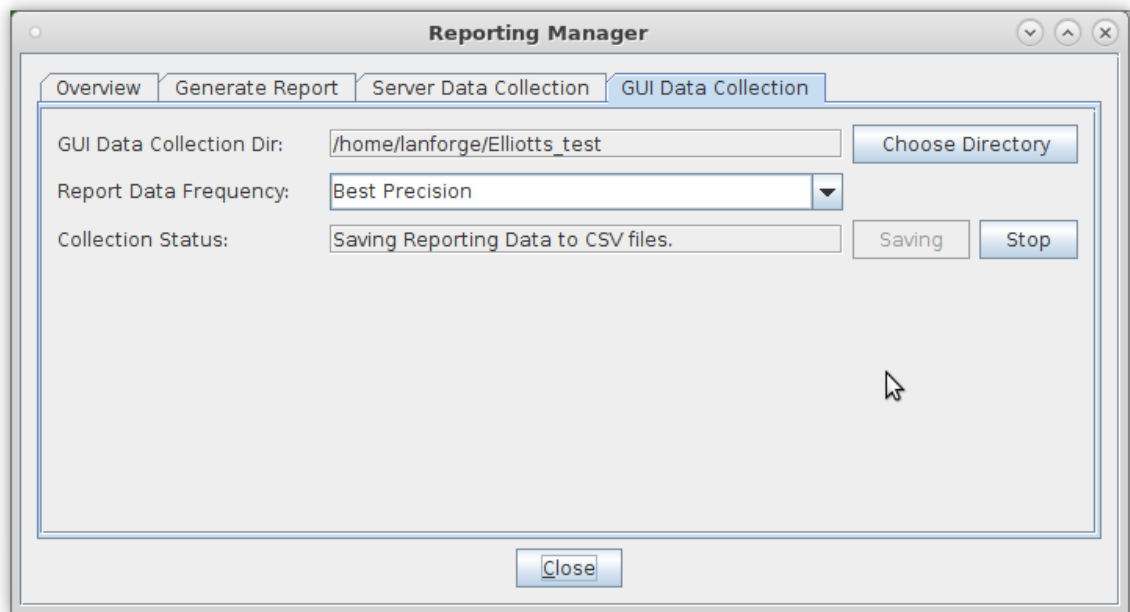
A. Select **Reporting Manager** from the **Reporting** pull-down menu

The screenshot shows the LANforge Manager Version 5.3.6 application window. The 'Reporting' menu is open, and 'Reporting Manager' is highlighted. 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' displays network statistics for a connection named 'eth2-eth3'. The table has columns for Name, Type, State, Pkt Rx A, Pkt Rx B, Bps Rx A, Bps Rx B, Rx Drop % A, Rx Drop % B, Drop Pkts A, and Drop Pkts B. The data shows a 'Run' state with significant packet and bit rates and 0% drop rates.

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

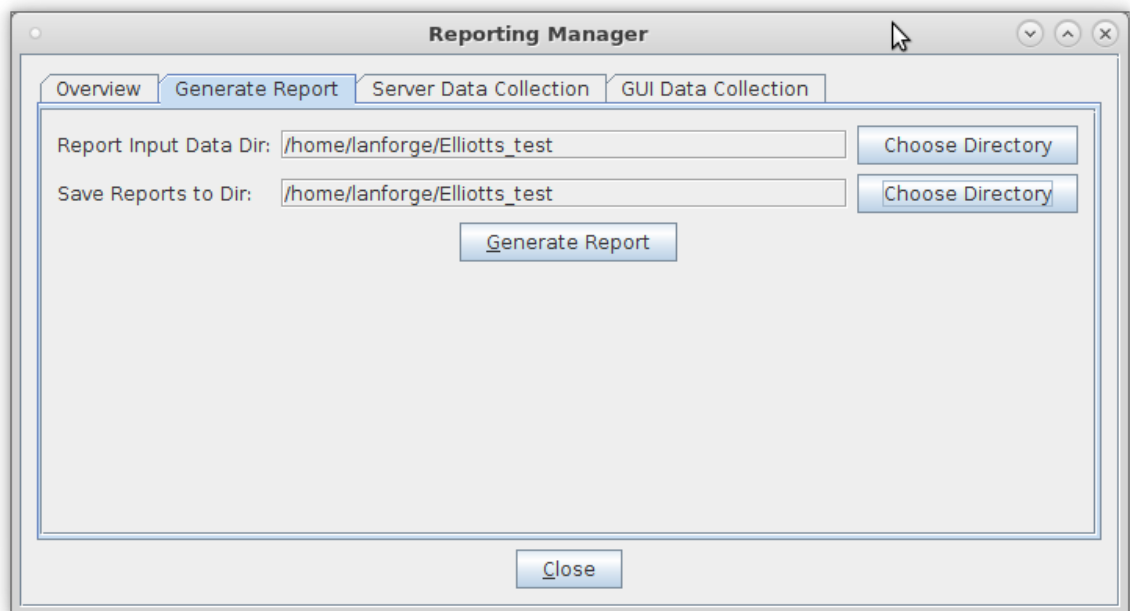
Logged in to: 192.168.100.103:4002 as: Admin

B. Record test data by following these steps:



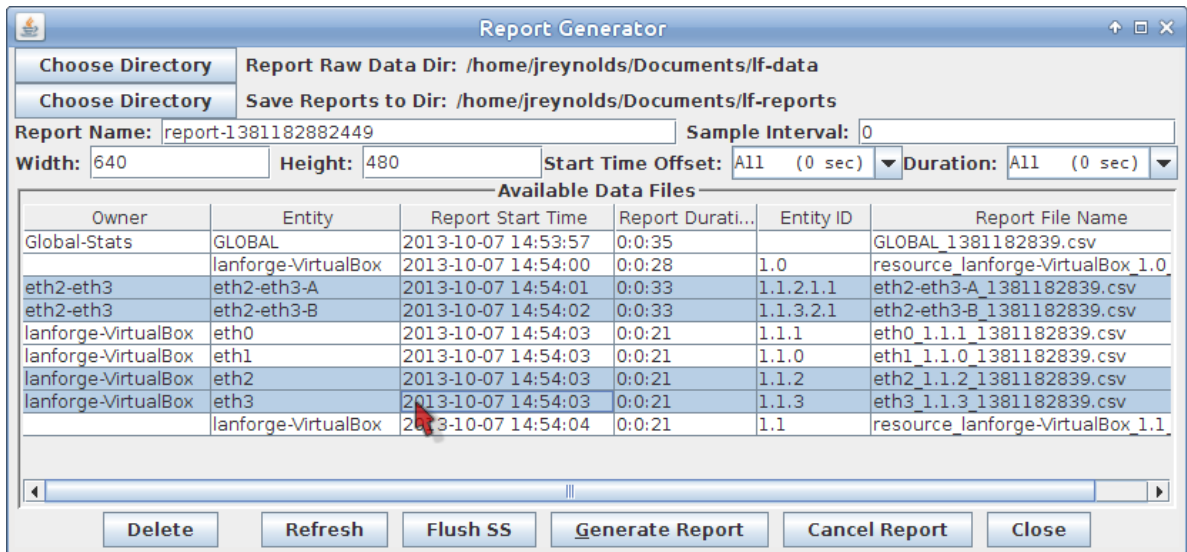
- A. Select the **GUI Data Collection** tab.
- B. Choose a directory to save raw (.csv) data.
- C. Click **Save** to start the data collection.
- D. After desired test duration, click **Stop**.
- E. **NOTE:** Your report will look cleaner if you stop traffic about 2 minutes before you stop saving data.

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



Report Generator

Choose Directory Report Raw Data Dir: /home/jreynolds/Documents/lf-data

Choose Directory Save Reports to Dir: /home/jreynolds/Documents/lf-reports

Report Name: report-1381182882449 Sample Interval: 0

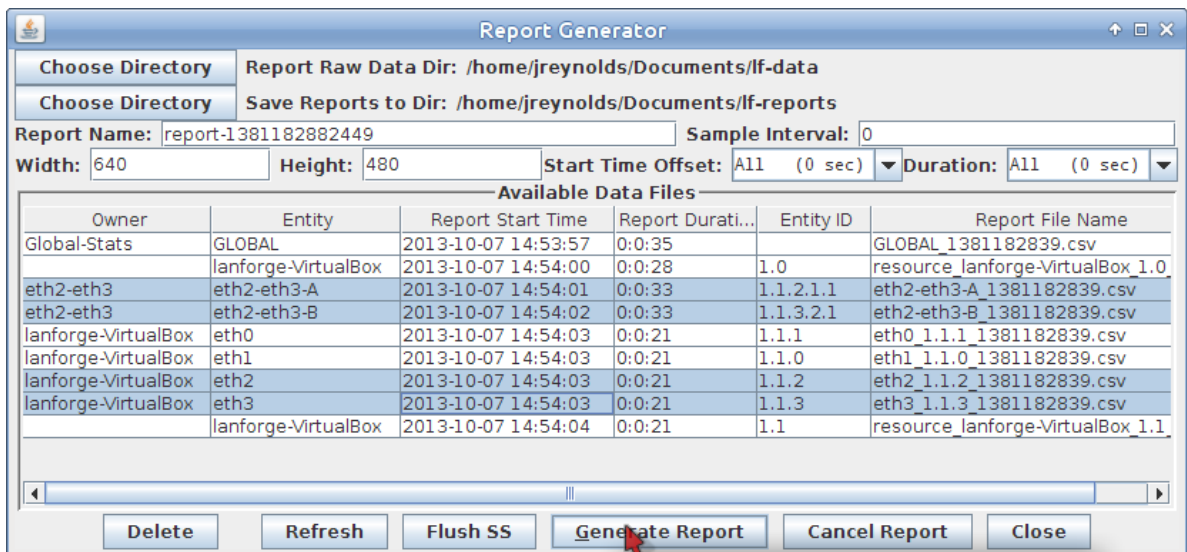
Width: 640 Height: 480 Start Time Offset: All (0 sec) Duration: All (0 sec)

Available Data Files

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	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	2013-10-07 14:54:04	0:0:21	1.1	resource_lanforge-VirtualBox_1.1

Delete Refresh Flush SS Generate Report Cancel Report Close

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



Report Generator

Choose Directory Report Raw Data Dir: /home/jreynolds/Documents/lf-data

Choose Directory Save Reports to Dir: /home/jreynolds/Documents/lf-reports

Report Name: report-1381182882449 Sample Interval: 0

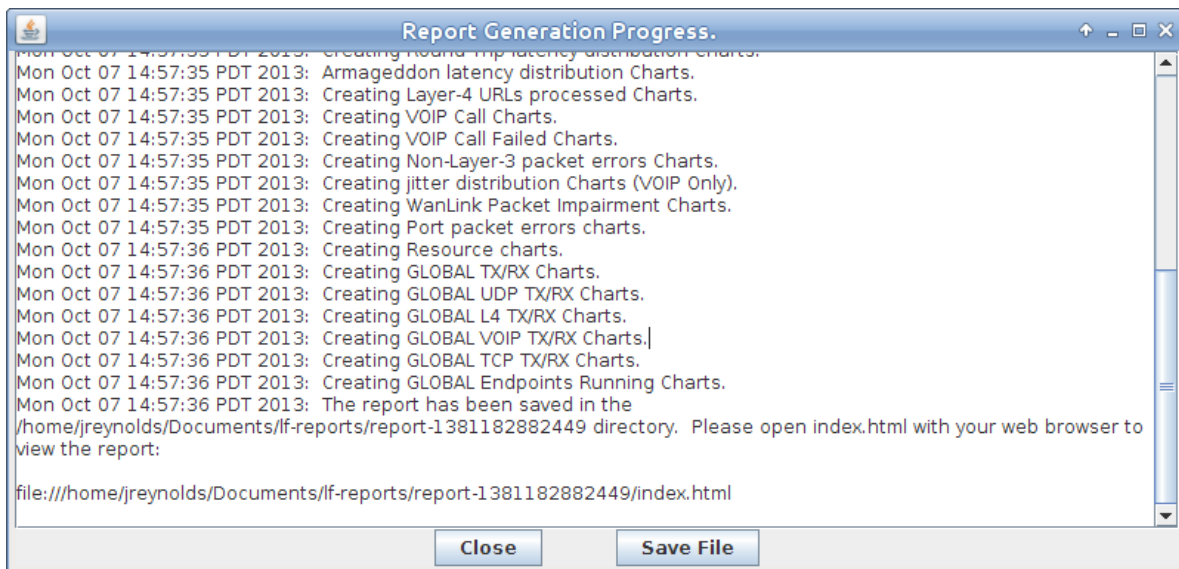
Width: 640 Height: 480 Start Time Offset: All (0 sec) Duration: All (0 sec)

Available Data Files

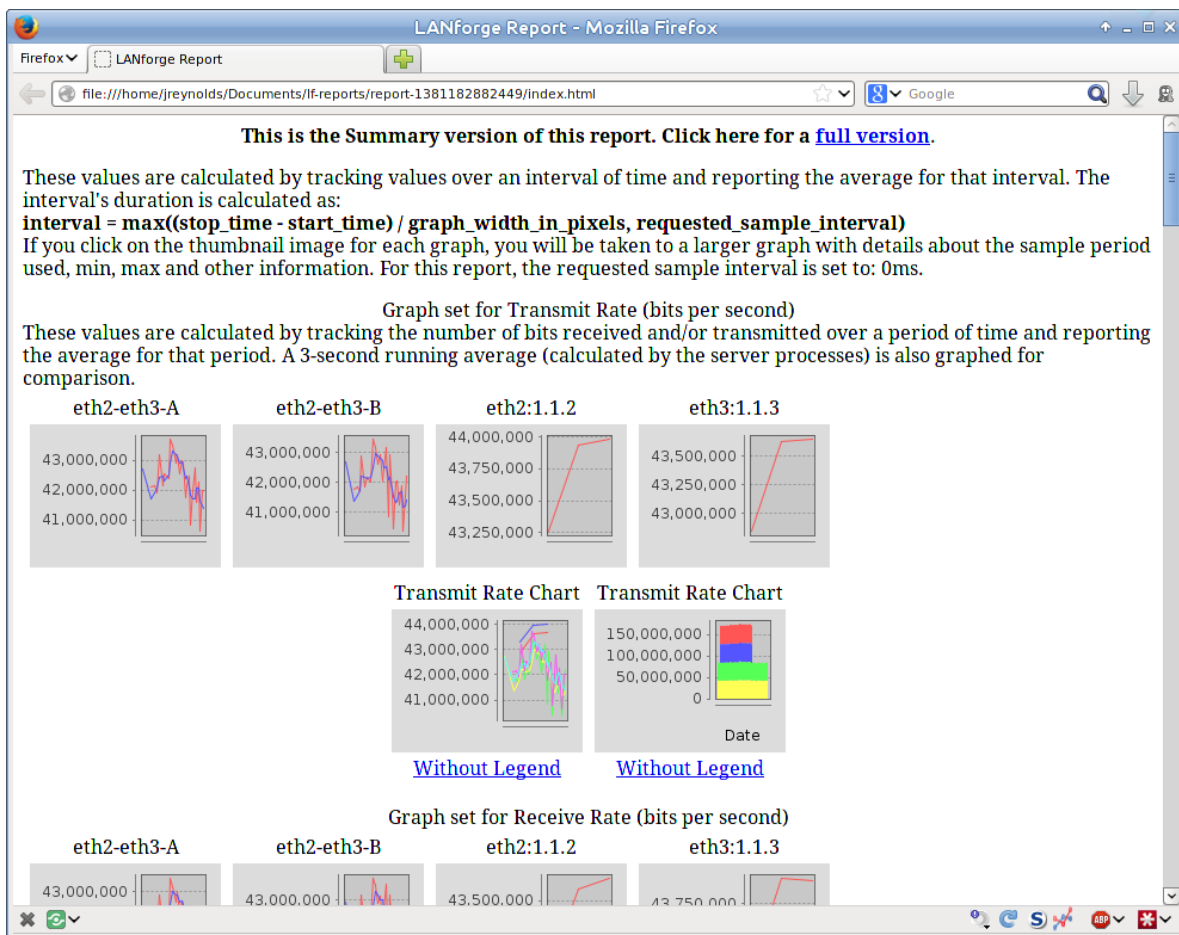
Owner	Entity	Report Start Time	Report Durati...	Entity ID	Report File Name
Global-Stats	GLOBAL	2013-10-07 14:53:57	0:0:35		GLOBAL_1381182839.csv
	lanforge-VirtualBox	2013-10-07 14:54:00	0:0:28	1.0	resource_lanforge-VirtualBox_1.0
eth2-eth3	eth2-eth3-A	2013-10-07 14:54:01	0:0:33	1.1.2.1.1	eth2-eth3-A_1381182839.csv
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	2013-10-07 14:54:04	0:0:21	1.1	resource_lanforge-VirtualBox_1.1

Delete Refresh Flush SS Generate Report Cancel Report Close

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](#)

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