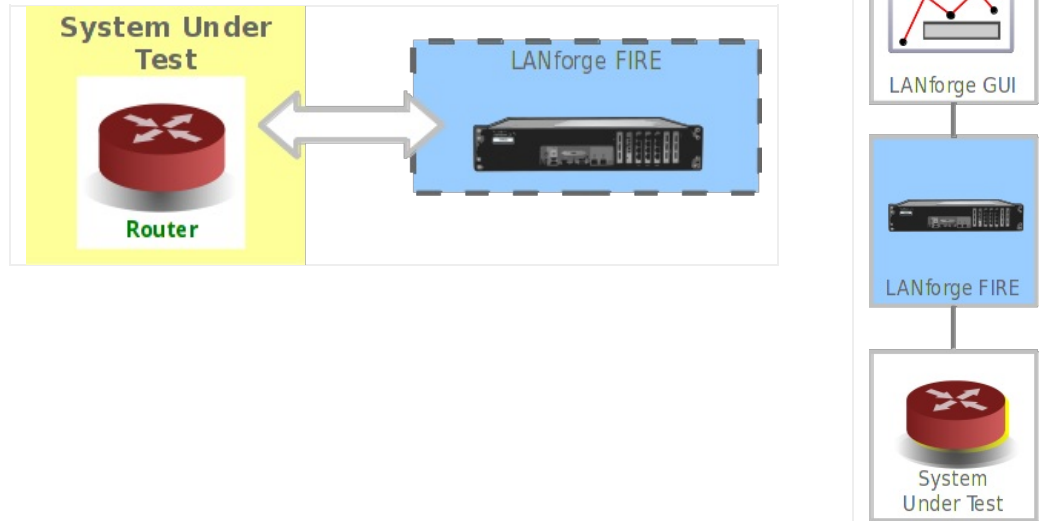


Generating Traffic to a Routed Network

Goal: Set up and run traffic on a routed network.

In this test scenario, LANforge-FIRE is used to generate traffic to a basic router in order to test throughput.



1. Connect one LANforge-FIRE port to the router's LAN port.
2. Connect another LANforge-FIRE port to the router's WAN port.
3. Set up the LANforge ports so that they have valid IP addresses. You can also use DHCP if the DUT supports it.
 - A. Go to the Port Manager

LANforge Manager Version(5.2.10)

Control Reporting Tear-Off Info Plugins

Stop All Restart Manager Refresh HELP

File-IO Layer-4 Generic Test Mgr Test Group Resource Mgr Event Log Alerts Port Mgr Messages

Status Layer-3 L3 Endps VoIP/RTP VoIP/RTP Endps Armageddon WanLinks Attenuators Collision-Domains

Disp: 192.168.100.27:0.0 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	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX	bps TX
1.1.0			192.168.100.129	0	eth2	189,810	2,121	3	2,984	144,274	276	1	8,932
1.1.1			0.0.0.0	0	eth1	15,192	67	0	0	21,382	145	0	0
1.1.2			0.0.0.0	0	eth3	9,594	31	0	0	13,259	67	0	0
1.1.3			0.0.0.0	0	eth4	9,094	31	0	0	15,137	73	0	0

Logged in to: 192.168.100.129:4002 as: Admin

B. Modify port for Endpoint A (eth3). Set a valid network IP Address and Gateway IP.

eth3 (ubuntu) Configure Settings

Port Status Information

Current: LINK-UP 1000bt-FD AUTO-NEGOTIATE Flow-Control TSO GSO GRO
Driver Info: Port Type: Ethernet Driver: e1000(7.3.21-k8-NAPI) Bus: 0000:00:0a.0

Port Configurables

General Interface Settings

Enable

- ☒ Set IP Info
- ☒ Set IP6 Info
- ☐ 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

DHCP-IPv6 ☐ DHCP Release ☒ Down ☐ Aux-Mgt ☐

DHCP-IPv4 ☐ Secondary-IPs

DNS Servers: BLANK

IP Address: 192.168.2.102

IP Mask: 255.255.255.0

Gateway IP: 192.168.2.1

Alias:

MAC Addr: 08:00:27:25:65:63

Br Cost: Ignore

Rpt Timer: medium (8 s)

CPU Mask: NO-SET

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

WiFi Bridge: NONE

Port Rates

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

Renegotiate ☐

Restart Xcvr ☐

PROMISC ☐

RX-ALL ☐

RX-FCS ☐

Bypass NOW! ☐

Bypass Power-UP ☐

Bypass Power-DOWN ☐

Bypass Disconnect ☐

Advertise Ra...

- ☒ 10bt-HD
- ☒ 10bt-FD
- ☒ 100bt-HD
- ☒ 100bt-FD
- ☒ 1000-FD
- ☐ 10G-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 (eth4). Set a valid network IP Address and Gateway IP.

eth4 (ubuntu) Configure Settings

Port Status Information

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

Driver Info: Port Type: Ethernet Driver: e1000(7.3.21-k8-NAPI) Bus: 0000:00:09.0

Port Configurables

General Interface Settings

☐ DHCP-IPv6 ☒ DHCP Release ☐ Down ☐ Aux-Mgt

☐ DHCP-IPv4 DHCP Client ID: None

DNS Servers: BLANK Peer IP: NA

IP Address: 172.16.1.103 Global IPv6: AUTO

IP Mask: 255.255.255.0 Link IPv6: AUTO

Gateway IP: 172.16.1.1 IPv6 GW: AUTO

Alias: MTU: 1500

MAC Addr: 08:00:27:ae:e4:72 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

☒ Autonegotiate

☐ Renegotiate

☐ Restart Xcvr

☐ PROMISC

☐ RX-ALL

☐ RX-FCS

☐ Bypass NOW!

☐ Bypass Power-UP

☐ Bypass Power-DOWN

☐ Bypass Disconnect

Advertise Ra...

☒ 10bt-HD

☒ 10bt-FD

☒ 1000bt-HD

☒ 1000bt-FD

☐ 10G-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

LANforge Manager Version(5.2.10)

Control Reporting Tear-Off Info Plugins

Stop All Restart Manager Refresh HELP

File-IO Layer-4 Generic Test Mgr Test Group Resource Mgr Event Log Alerts Port Mgr Messages

Status Layer-3 L3 Endps VoIP/RTP VoIP/RTP Endps Armageddon WanLinks Attenuators Collision-Domains

Disp: 192.168.100.27:0.0 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.

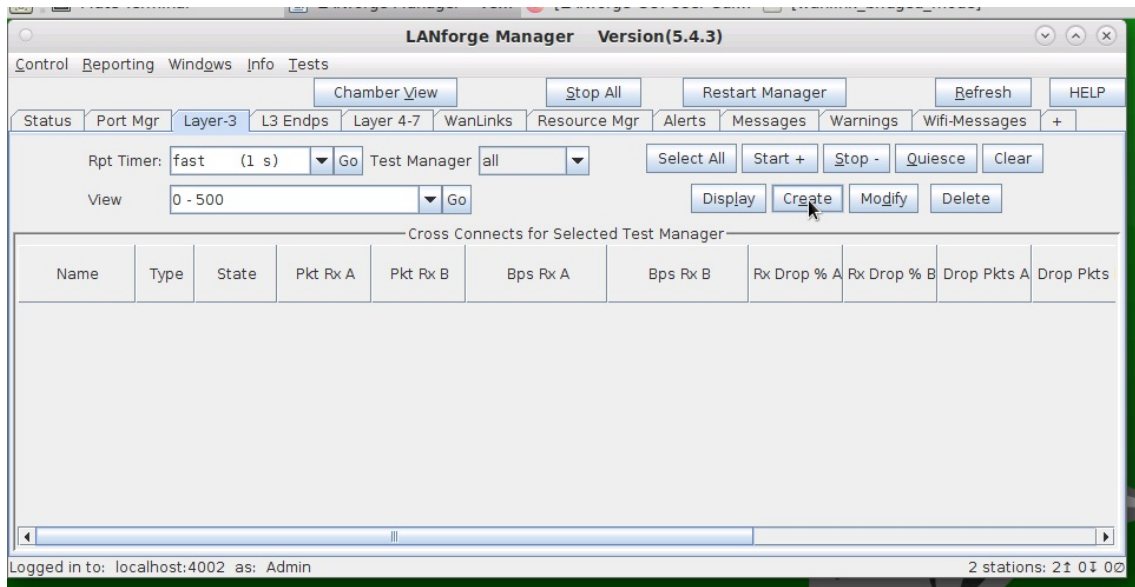
Port	Pha...	Down	IP	SEC	Alias	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX	bps TX	Collis
1.1.0			192.168.100.129	0	eth2	682,954	6,865	5	4,110	1,370,419	2,297	2	9,827	
1.1.1			0.0.0.0	0	eth1	15,192	67	0	0	21,382	145	0	0	
1.1.2			192.168.2.102	0	eth3	16,407	59	0	0	21,575	107	0	0	
1.1.3			172.16.1.103	0	eth4	13,085	46	0	0	22,648	110	0	0	

Logged in to: 192.168.100.129:4002 as: Admin

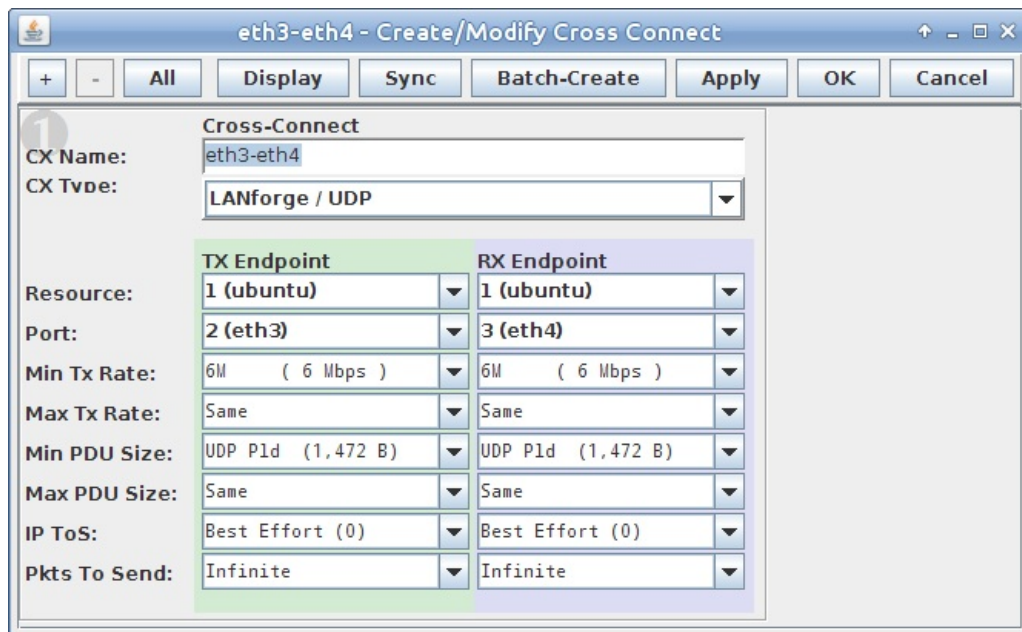
For more information see [LANforge User's Guide: Ports\(Interfaces\)](#)

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

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



B. Create a new Cross-Connect

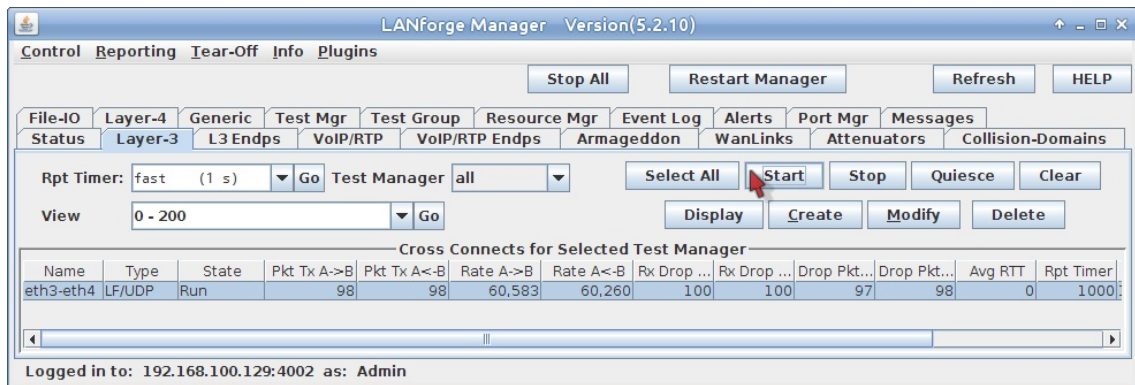


C. Verify the new Cross-Connect

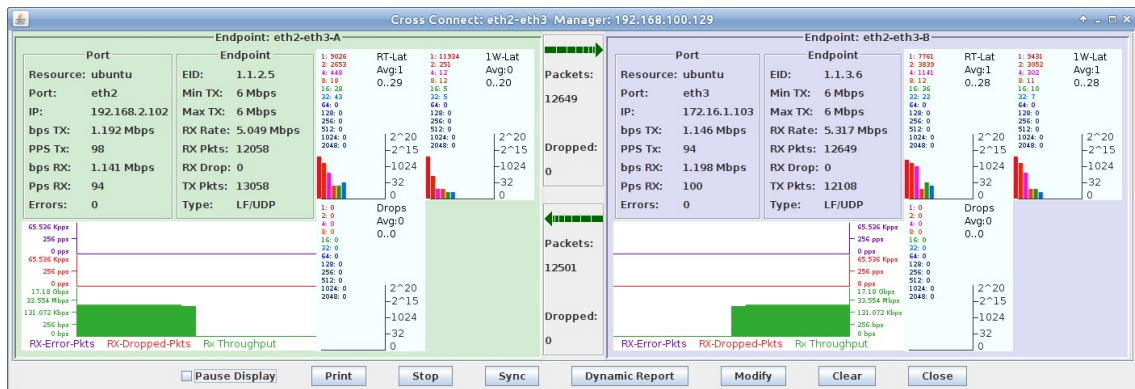
For more information see [LANforge User's Guid: Layer-3 Cross-Connects \(FIRE\)](#)

5. Run traffic and determine router throughput.

A. Select the cross-connect on the **Layer-3** tab, click **Start** and then **Display**



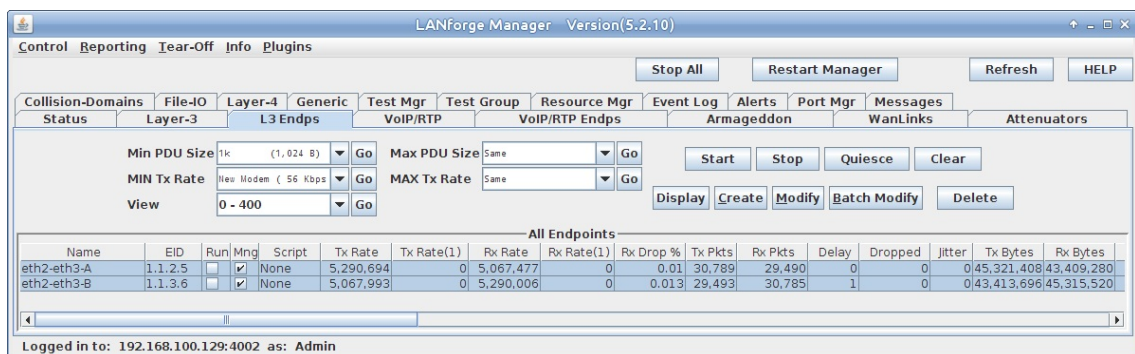
B. View the Layer-3 cross-connect display



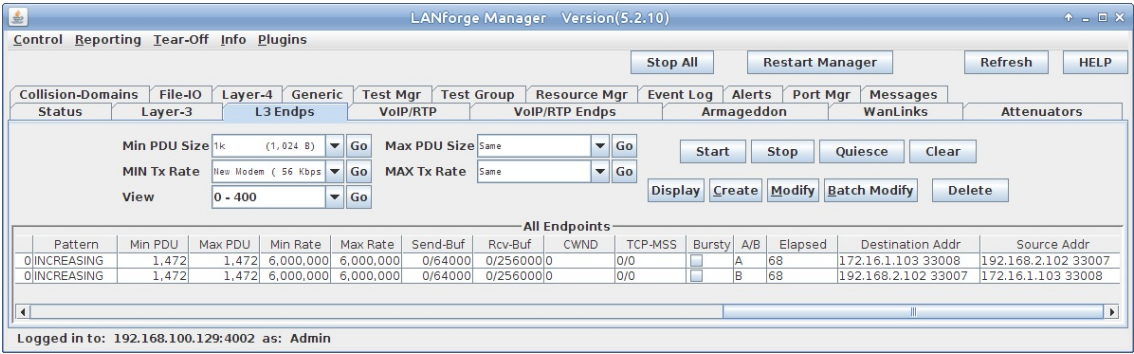
For more information see [LANforge User's Guid: Layer-3 Cross-Connect Display](#)

6. For this example, a low performance router was used to illustrate poor throughput, variable latency, and dropped packets.

A. Go to the **L3 Endps** tab



B. Scroll to the right to view Latency and Dropped Packets



For more information see [LANforge User's Guid: Layer-3 Endpoints \(FIRE\)](#)

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