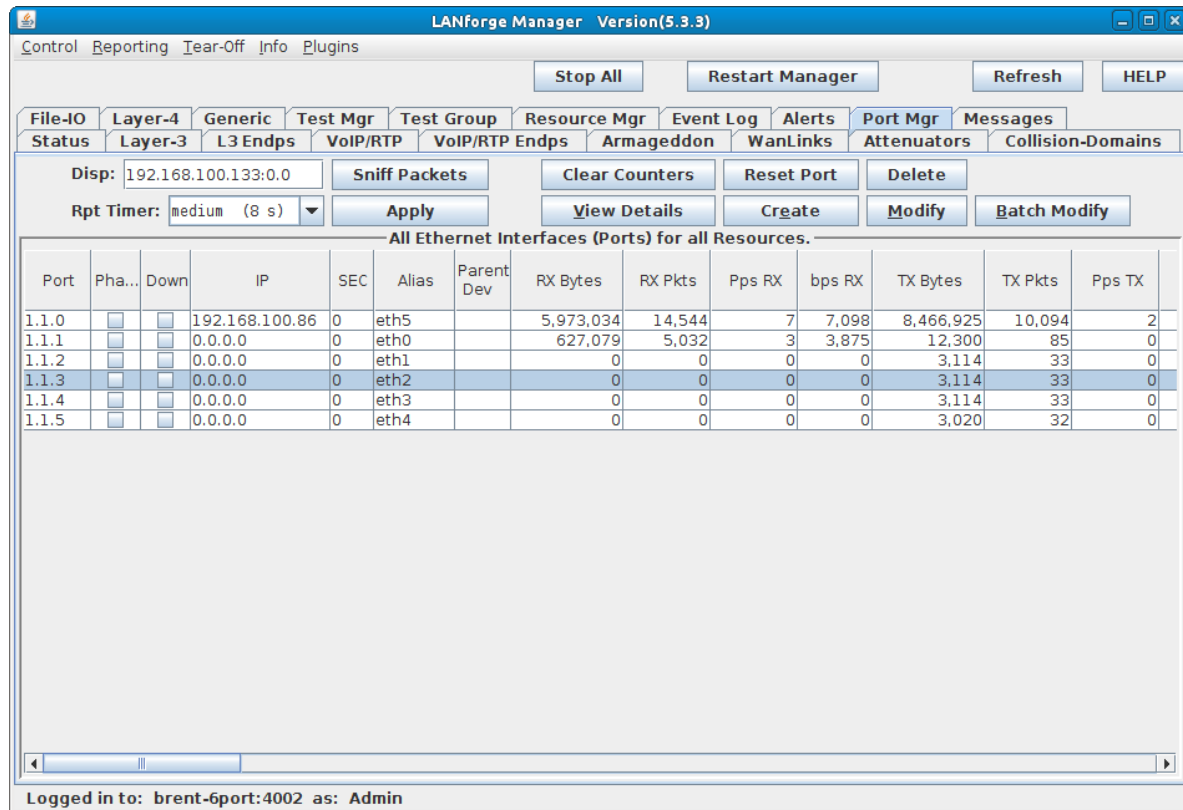


Generating Traffic for DSLAM Testing

Goal: Set up and run traffic to a DSLAM system as shown in the [CT570 product description](#).

Please refer to the diagram in the CT570 link above. In this test scenario, the LANforge-FIRE Core is one interface on a LANforge system. The LANforge-FIRE Edge is another interface on the same LANforge system. The LF Core interface is connected to the upstream DSLAM interface either directly or through a switch. The CPEs are connected to a multi-port VLAN switch which has a VLAN trunk that is connected to the LF Edge. Traffic is sent between the LF Core and the LF Edge to achieve end-to-end network traffic testing of the DSLAM system.

1. Connect one LANforge-FIRE interface to the DSLAM upstream internet connection. This is the LF Core part of the diagram mentioned above.
2. Set up the LANforge port so that it has a valid IP address and IP mask.
 - A. Go to the Port Manager



The screenshot shows the LANforge Manager interface, specifically the Port Manager section. The window title is "LANforge Manager Version(5.3.3)". The interface includes a menu bar (Control, Reporting, Tear-Off, Info, Plugins), several action buttons (Stop All, Restart Manager, Refresh, HELP), and a series of tabs for different management areas. The "Port Mgr" tab is active, showing a table of "All Ethernet Interfaces (Ports) for all Resources." 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 in the table 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	<input type="checkbox"/>	<input type="checkbox"/>	192.168.100.86	0	eth5		5,973,034	14,544	7	7,098	8,466,925	10,094	2
1.1.1	<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	0	eth0		627,079	5,032	3	3,875	12,300	85	0
1.1.2	<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	0	eth1		0	0	0	0	3,114	33	0
1.1.3	<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	0	eth2		0	0	0	0	3,114	33	0
1.1.4	<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	0	eth3		0	0	0	0	3,114	33	0
1.1.5	<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	0	eth4		0	0	0	0	3,020	32	0

At the bottom of the window, it says "Logged in to: brent-6port:4002 as: Admin".

B. Modify the port connected to the DSLAM. Set a valid network IP address and IP mask.

eth2 (brent-6port) Configure Settings

Port Status Information
 Current: LINK-UP 1000bt-FD AUTO-NEGOTIATE Flow-Control TSO GSO GRO
 Driver Info: Port Type: Ethernet Driver: e1000e(3.2.5-k) Bus: 0000:04:00.0 Cur: 2.5GT/s x1 Max: 2.5GT/s x1

Port Configurables

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: 10.127.0.10/24 Global IPv6: AUTO

IP Mask: 0.0.0.0 Link IPv6: AUTO

Gateway IP: 0.0.0.0 IPv6 GW: AUTO

Alias: MTU: 1500

MAC Addr: 00:90:0b:38:82:72 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
- 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. Verify the port configuration

LANforge Manager Version(5.3.3)

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: 192.168.100.133:0.0 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	Parent Dev	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX
1.1.0			192.168.100.86	0	eth5		6,427,215	18,168	7	7,066	9,368,881	11,374	2
1.1.1			0.0.0.0	0	eth0		874,489	6,926	3	3,814	12,660	89	0
1.1.2			0.0.0.0	0	eth1		0	0	0	0	3,114	33	0
1.1.3			10.127.0.10	0	eth2		0	0	0	0	3,646	39	0
1.1.4			0.0.0.0	0	eth3		0	0	0	0	3,114	33	0
1.1.5			0.0.0.0	0	eth4		0	0	0	0	3,020	32	0

Logged in to: brent-6port:4002 as: Admin

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

3. Set up virtual interfaces.

A. On the **Port Mgr** tab, select the port that will connect to the multi-port switch and will also be your VLAN trunk. This is the LF Edge part of the diagram.

B. Click the **Create** button:

Create VLANs on Port: 1.1.4

1 MAC-VLAN 802.1Q-VLAN Redirect Bridge GRE Tunnel
 WiFi STA WiFi VAP WiFi Monitor WiFi Virtual Radio

2 Shelf: 1 Resource: 1 (brent-6port) Port: 4 (eth3)

3 VLAN ID: 1001 DHCP-IPv4
 Parent MAC: 00:90:0b:38:82:73 DHCP Client ID: None
 MAC Addr: xx:xx:xx:*:xx IP Address: 10.127.0.101/24 Global IPv6: AUTO
 Quantity: 5 IP Mask or Bits: Link IPv6: AUTO
 Gateway IP: IPv6 GW: AUTO
 #1 Redir Name: #2 Redir Name:
 STA ID: SSID:
 WiFi AP: Key/Phrase:
 WPA WPA2 WEP

4 Down
 Apply Cancel

- A. Select the **802.1Q-VLAN** virtual interface type
- B. The **VLAN ID** should correspond to your multi-port switch VLAN configuration
- C. Enter **Quantity** (number of virtual interfaces to be created)
- D. Enter the appropriate IP address and IP mask
- E. Click **Apply** to create the virtual interfaces

C. Verify that the virtual interfaces are created and have the correct IP assignments

LANforge Manager Version(5.3.3)

Control Reporting Tear-Off Info Plugins

Stop All Restart Manager Refresh HELP

File-I/O 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: 192.168.100.133:0.0 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.

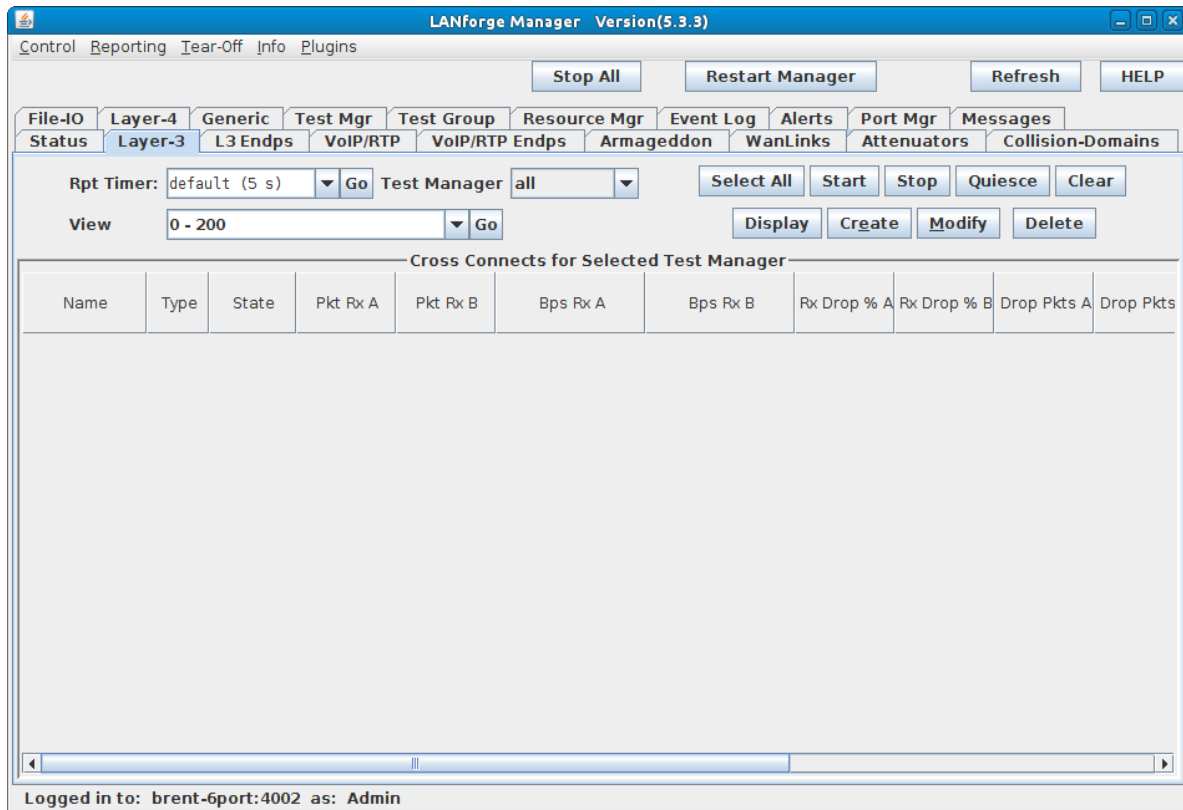
Port	Pha...	Down	IP	SEC	Alias	Parent Dev	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX
1.1.00			192.168.100.86	0	eth5		7,001,107	22,847	9	8,787	10,648,118	13,177	3
1.1.01			0.0.0.0	0	eth0		0	0	0	0	0	0	0
1.1.02			0.0.0.0	0	eth1		0	0	0	0	3,114	33	0
1.1.03			10.127.0.10	0	eth2		0	0	0	0	3,794	41	0
1.1.04			0.0.0.0	0	eth3		0	0	0	0	8,536	92	0
1.1.05			0.0.0.0	0	eth4		0	0	0	0	3,020	32	0
1.1.06			10.127.0.101	0	eth3.1001	eth3	0	0	0	0	1,008	12	0
1.1.07			10.127.0.102	0	eth3.1002	eth3	0	0	0	0	1,008	12	0
1.1.08			10.127.0.103	0	eth3.1003	eth3	0	0	0	0	918	11	0
1.1.09			10.127.0.104	0	eth3.1004	eth3	0	0	0	0	918	11	0
1.1.10			10.127.0.105	0	eth3.1005	eth3	0	0	0	0	1,098	13	0

Logged in to: brent-6port:4002 as: Admin

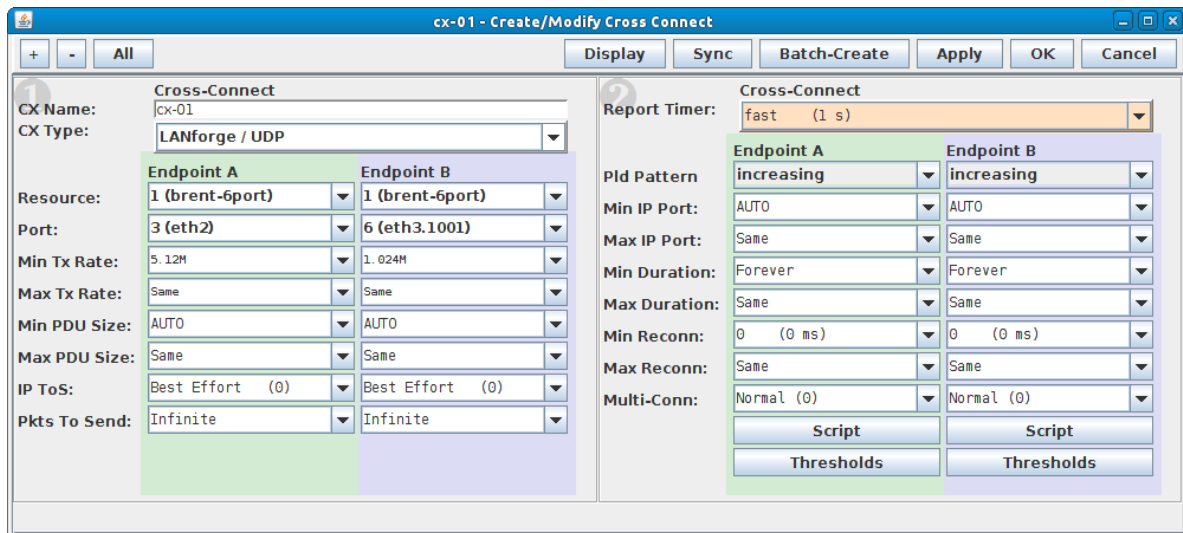
For more information see [LANforge User's Guide: Creating & Deleting Virtual Interfaces](#)

4. Create Layer-3 connections.

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



B. Click the **Create** button



- A. Fill in a connection name, select a connection type and set the report timer
- B. Make endpoint A the DSLAM upstream port or LF Core
- C. Make endpoint B the CPE downstream port or LF Edge
- D. You can make the TX/RX rates asymmetric for the connection to simulate how the connection would be used in a real-world scenario. Here we have about 5Mbps downstream (DSLAM to CPE) and 1Mbps upstream (CPE to DSLAM).
- E. Click **Apply** to create the connection

C. Create multiple connections

cx-02, cx-03 ... cx-05

Endp-A Resources: 1, 1 ... 1

Endp-B Resources: 1, 1 ... 1

Endp-A Ports: eth2, eth2 ... eth2

Endp-B Ports: eth3.1002, eth3.1003 ... eth3.1005

Endp-A IPs: AUTO, AUTO ... AUTO

Endp-B IPs: AUTO, AUTO ... AUTO

Quantity: Number of Digits: Zero Pad

Starting Name Suffix: Name Increment:

Resource Increment A: Resource Increment B:

Port Increment A: Port Increment B:

IP Addr Increment A: IP Addr Increment B:

IP-Port Increment A: IP-Port Increment B:

- A. Click **Batch-Create** (located in the Layer-3 connection's Create/Modify window) to create four additional connections.
- B. Set **Quantity** to 4, **Port Increment A** to 0.
- C. Click **Apply**.

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

5. Run traffic.

A. Select the connections you want to start

The screenshot shows the LANforge Manager interface. At the top, there are navigation tabs: File-IO, Layer-4, Generic, Test Mgr, Test Group, Resource Mgr, Event Log, Alerts, Port Mgr, Messages. Below these are sub-tabs: Status, Layer-3, L3 Endps, VoIP/RTP, VoIP/RTP Endps, Armageddon, WanLinks, Attenuators, Collision-Domains. The main area contains a 'Rpt Timer' set to 'default (5 s)' and 'Test Manager' set to 'all'. There are buttons for 'Select All', 'Start', 'Stop', 'Quiesce', and 'Clear'. The 'View' is set to '0 - 200'. Below this is a table titled 'Cross Connects for Selected Test Manager'.

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
cx-01	LF/UDP	Stopped	0	0	0	0	0	0	0	0
cx-02	LF/UDP	Stopped	0	0	0	0	0	0	0	0
cx-03	LF/UDP	Stopped	0	0	0	0	0	0	0	0
cx-04	LF/UDP	Stopped	0	0	0	0	0	0	0	0
cx-05	LF/UDP	Stopped	0	0	0	0	0	0	0	0

Logged in to: brent-6port:4002 as: Admin

B. Click the **Start** button

The screenshot shows the LANforge Manager interface after clicking the 'Start' button. The 'Rpt Timer' and 'Test Manager' settings remain the same. The 'View' is still '0 - 200'. The table 'Cross Connects for Selected Test Manager' now shows all connections in a 'Run' state with traffic statistics.

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
cx-01	LF/UDP	Run	5,132	25,783	1,023,479	5,115,936	0	0	0	0
cx-02	LF/UDP	Run	5,080	25,434	1,023,561	5,115,907	0	0	0	0
cx-03	LF/UDP	Run	5,097	25,521	1,023,467	5,115,842	0	0	0	0
cx-04	LF/UDP	Run	5,115	25,695	1,023,608	5,115,888	0	0	0	0
cx-05	LF/UDP	Run	5,150	25,520	1,023,637	5,115,729	0	0	0	0

Logged in to: brent-6port:4002 as: Admin

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