

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 with the Port Manager tab selected. The interface includes a navigation menu at the top, a toolbar with buttons like 'Stop All', 'Restart Manager', 'Refresh', and 'HELP', and a main content area with various management options and a table of Ethernet interfaces.

Key interface elements include:

- Navigation: Control, Reporting, Tear-Off, Info, Plugins
- Buttons: Stop All, Restart Manager, Refresh, HELP
- Management Tabs: File-IO, Layer-4, Generic, Test Mgr, Test Group, Resource Mgr, Event Log, Alerts, Port Mgr, Messages
- Sub-Tabs: Status, Layer-3, L3 Endps, VoIP/RTP, VoIP/RTP Endps, Armageddon, WanLinks, Attenuators, Collision-Domains
- Configuration: Disp: 192.168.100.133:0.0, Rpt Timer: medium (8 s)
- Actions: Sniff Packets, Clear Counters, Reset Port, Delete, Apply, View Details, Create, Modify, Batch Modify

The table below shows the 'All Ethernet Interfaces (Ports) for all Resources' with the following data:

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

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.

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-IPv4
- DHCP Release
- DHCP Vendor ID: None
- 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:

The screenshot shows the 'Create VLANs on Port: 1.1.4' configuration window. It includes the following fields and options:

- 1** Interface Type: 802.1Q-VLAN, MAC-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

Buttons: 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

The screenshot shows the LANforge Manager interface with the 'Port Mgr' tab selected. The table below displays 'All Ethernet Interfaces (Ports) for all Resources.'

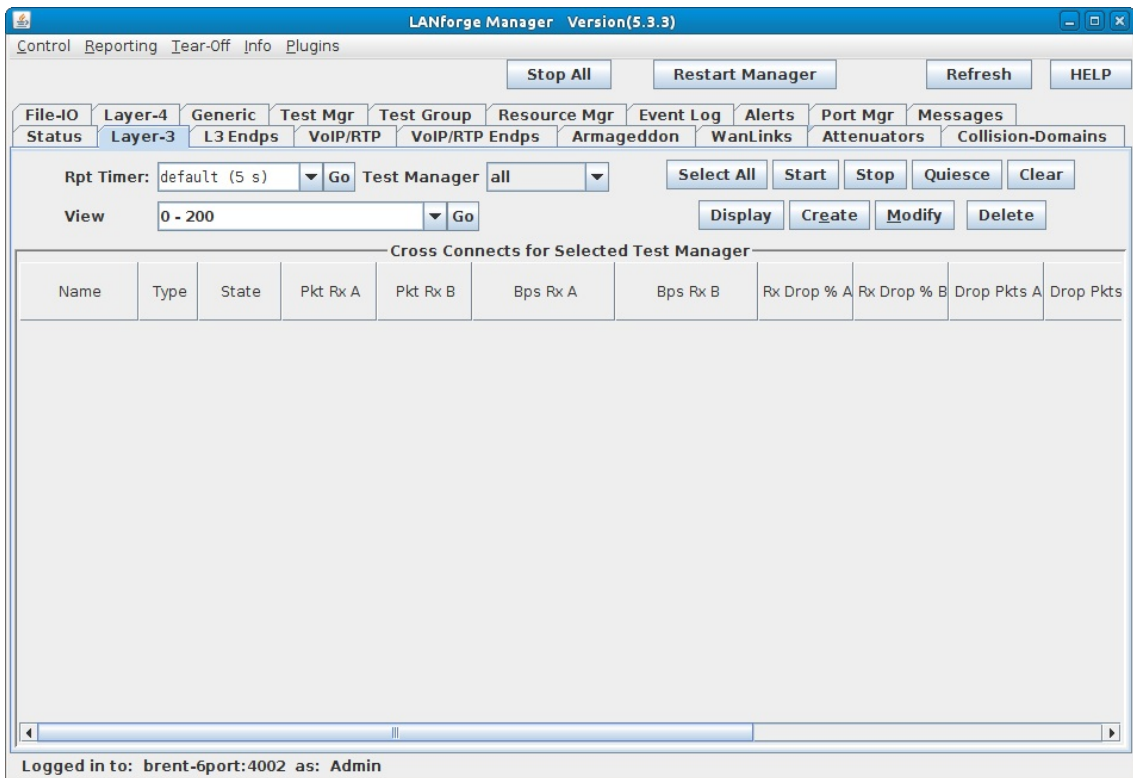
Port	Pha...	Down	IP	SEC	Alias	Parent Dev	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX
1.1.00	<input type="checkbox"/>	<input type="checkbox"/>	192.168.100.86	0	eth5		7,001,107	22,847	9	8,787	10,648,118	13,177	3
1.1.01	<input type="checkbox"/>	<input type="checkbox"/>	0.0.0.0	0	eth0		0	0	0	0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

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

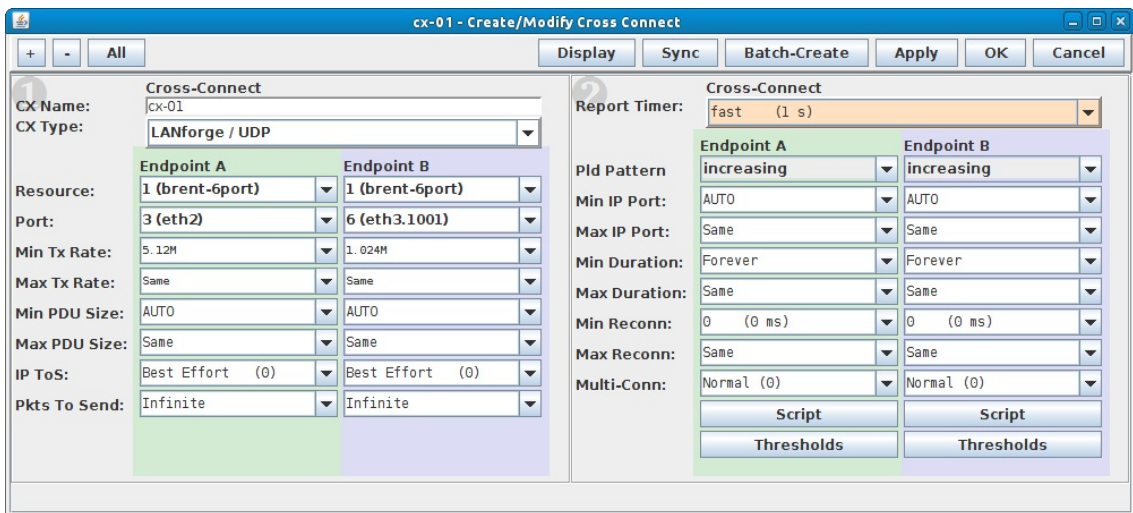
For more information see [LANforge User's Guide: Creating & Deleting Virtual Interfaces](#)

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

Layer-3 Batch Creator: cx-01

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: 4 Number of Digits: 2 Zero Pad

Starting Name Suffix: 01 Name Increment: 1

Resource Increment A: 0 Resource Increment B: 0

Port Increment A: 0 Port Increment B: 1

IP Addr Increment A: 0 IP Addr Increment B: 0

IP-Port Increment A: 1 IP-Port Increment B: 1

Apply Close

- 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: Control, Reporting, Tear-Off, Info, and Plugins. Below these are several functional buttons: Stop All, Restart Manager, Refresh, and HELP. A menu bar includes File-IO, Layer-4, Generic, Test Mgr, Test Group, Resource Mgr, Event Log, Alerts, Port Mgr, and Messages. The 'Test Mgr' menu is expanded, showing options like Status, Layer-3, L3 Endps, VoIP/RTP, VoIP/RTP Endps, Armageddon, WanLinks, Attenuators, and Collision-Domains. The interface includes a 'Rpt Timer' set to 'default (5 s)' and a 'Test Manager' dropdown 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' with 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. The table contains five rows, all with a 'Stopped' state. At the bottom, it says 'Logged in to: brent-6port:4002 as: Admin'.

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
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

B. Click the **Start** button

The screenshot shows the LANforge Manager interface after the connections have been started. The 'Start' button in the previous screenshot is now highlighted. The table 'Cross Connects for Selected Test Manager' now shows five rows with a 'Run' state. Traffic statistics are visible in the Pkt Rx and Bps Rx columns. At the bottom, it says 'Logged in to: brent-6port:4002 as: Admin'.

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
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

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