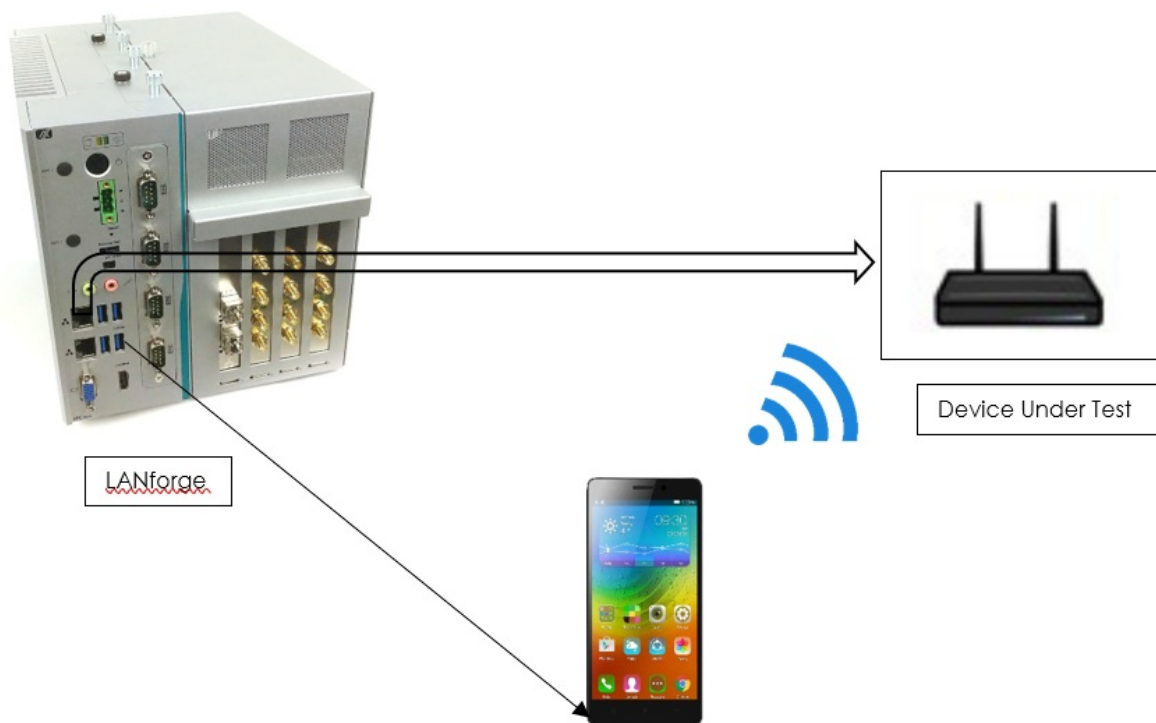


Layer-3 Traffic Test on Android

Goal: Create Layer-3 Traffic between LANforge Manager and Android Resource.

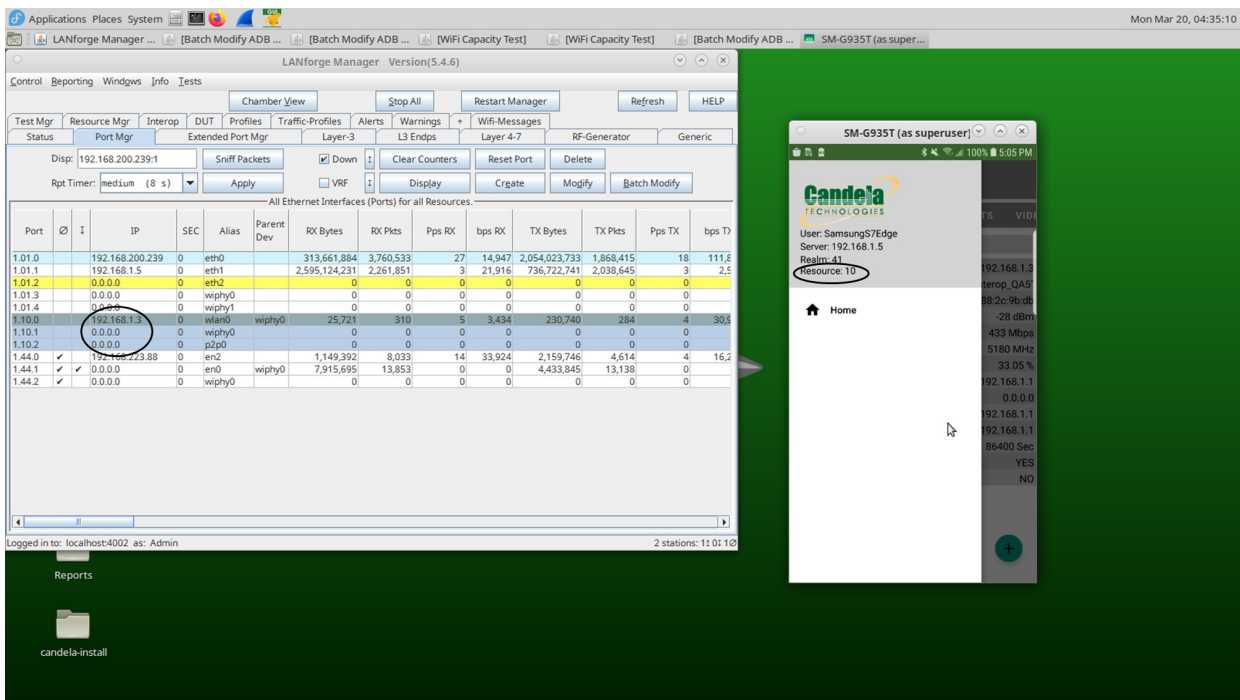
This cookbook requires LANforge GUI version 5.4.6 and above.

Test Setup

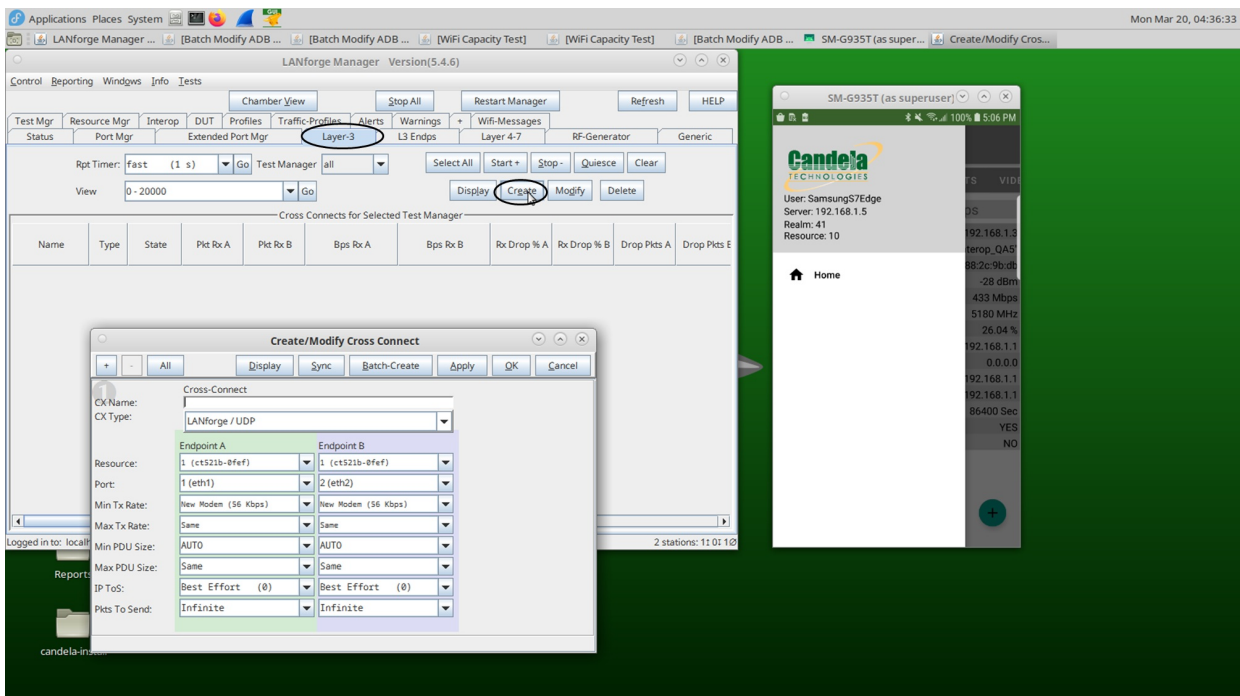


Create Layer-3 TCP/UDP Traffic between LANforge Manager and Android resource

1. Connect Android phone to LANforge via USB such that the device will appear in Interop Tab. Initial Android interop setup can be done using the following [link](#).
 2. Below is an example of a phone (resource ID 10) that is now clustered with the LANforge.
- After entering the test room, the device should appear in Port Mgr tab.



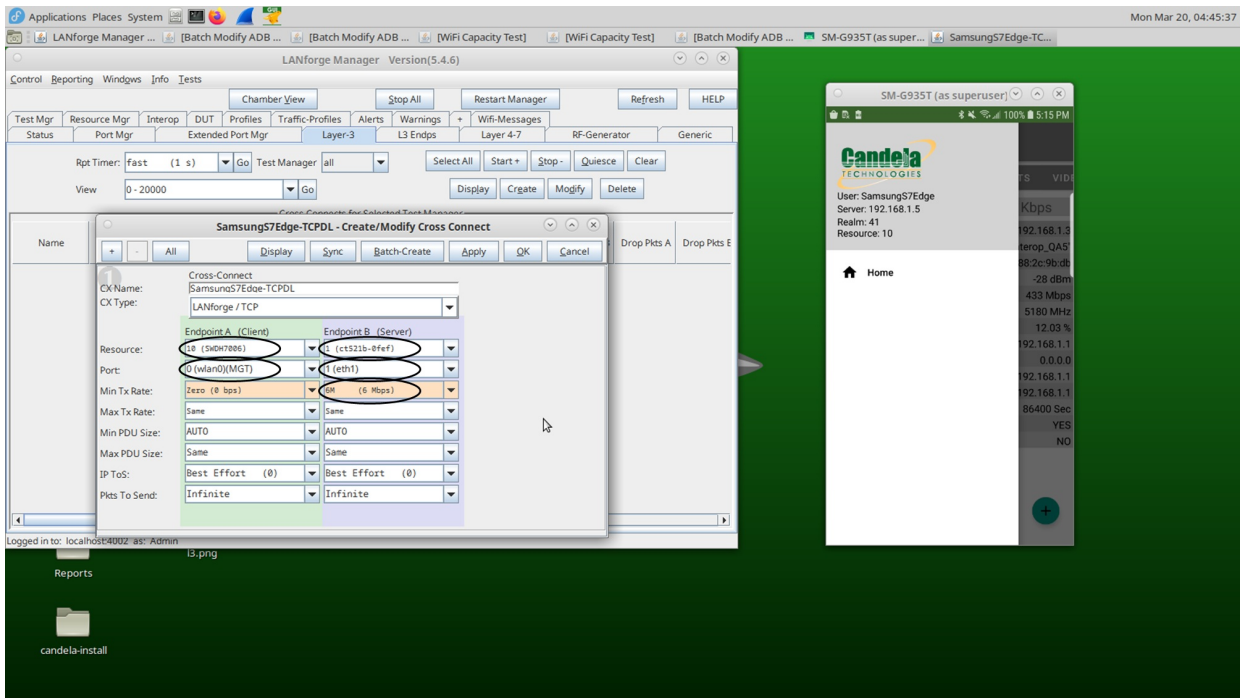
3. Click on the Layer-3 tab, then click on the Create button. This will open a window to create a Layer-3 cross-connect.



4. Add the details as mentioned below.

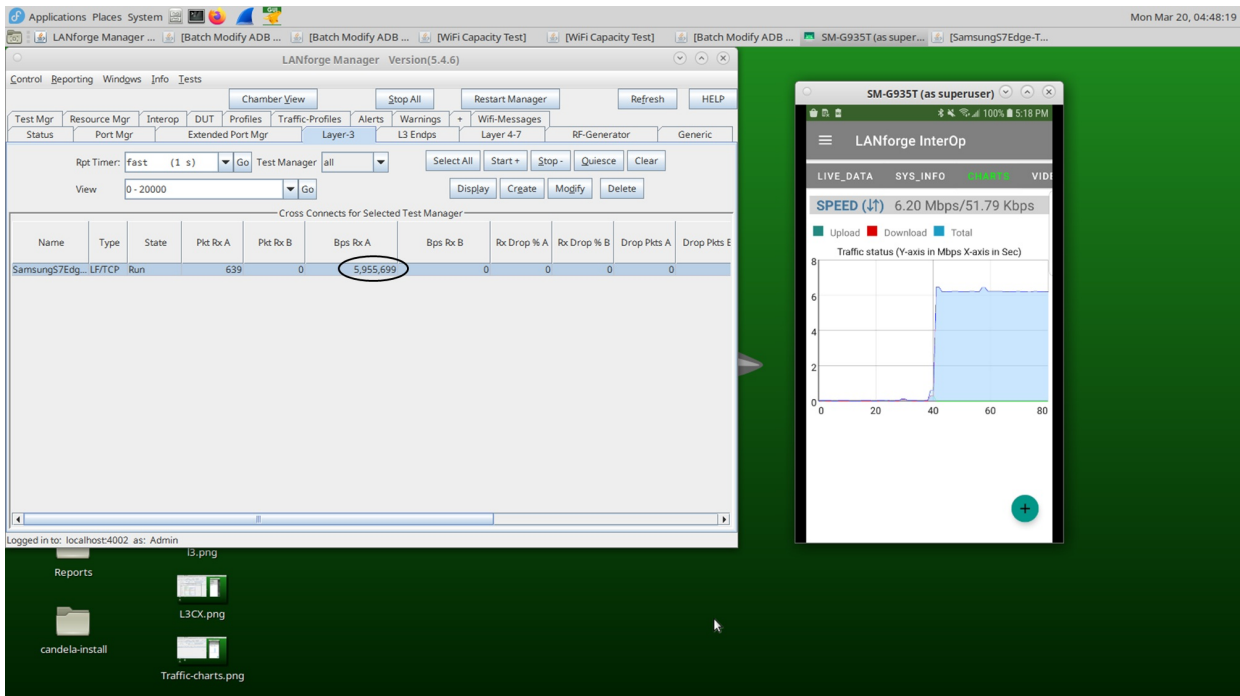
Enter CX name of your choice, CX type (TCP or UDP), endpoint-A value (the resource-ID of your phone), endpoint-B value (the resource-ID of your LANforge in Resource option). Also, select respective ports to run the traffic and set Min Tx Rate as required on server side to run download traffic. Click on Apply and OK to save the cross-connect settings.

The below image is of a **TCP downstream** cross-connect with an intended load of 6 Mbps.



5. Click the Charts tab on the app. Then, in the GUI, start the Layer-3 cross-connect by clicking the cross-connect in the table to highlight it and clicking the Start button in the Layer-3 tab. The graph will start plotting immediately after starting the Layer-3 cross-connect.

Throughput obtained in Layer-3 will be reflected in the Charts tab in the app.



6. Further cross-connect data points are displayed in the L3 Endps tab. Also, if a cx on the Layer-3 tab is highlighted (by single clicking it's row), the endpoints associated with that cx will be selected when switching to the L3 Endps tab.

LANforge Manager Version(5.4.6)

Control Reporting Windows Info Tests

Status Port Mgr Extended Port Mgr Layer-3 **L3 Endps** Layer 4-7 RF-Generator Generic Test Mgr Resource Mgr Interop DUT Profiles Traffic-Profiles Alerts Warnings

Min PDU Size: AUTO Max PDU Size: Same
 MIN Tx Rate: New Mode: (50 Kbps) MAX Tx Rate: Same
 View: 0 - 20000

Start+ Stop- Quiesce Clear

Display Create Modify Batch Modify

SM-G935T (as superuser)

LANforge InterOp

LIVE_DATA SYS_INFO **SPEED** VIDI

SPEED (↓) 6.19 Mbps/110.27 Kbps

Upload Download Total

Traffic status (Y-axis in Mbps X-axis in Sec)

0 2 4 6 8

0 50 100 150 200

132,930

0

Logged in to: localhost:4002 as: Admin

Reports

L3.png

L3C.png

candela-install

Traffic-charts.png

Below is an example of **TCP Upstream** traffic by selecting the Tx rate on client side.

LANforge Manager Version(5.4.6)

Control Reporting Windows Info Tests

Status Port Mgr Extended Port Mgr Layer-3 L3 Endps Layer 4-7 RF-Generator Generic Test Mgr Resource Mgr Interop DUT Profiles Traffic-Profiles Alerts Warnings + Wifi-Messages

Rpt Timer: Fast (1 s) Go Test Manager: all

Select All Start+ Stop- Quiesce Clear

View: 0 - 20000

Display Create Modify Delete

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 Avg RTT Rpt Timer EID Endpoints (A -> B)

Samsung57Edge-TCP-BI

Samsung57Edge-TCPUL - Create/Modify Cross Connect

Cross-Connect: Samsung57Edge-TCPUL

CX Name: Samsung57Edge-TCPUL

CX Type: LANforge / TCP

Resource: 10 (SMG935T) Endpoint A (Client) 1 (cts21b-efef) Endpoint B (Server)

Port: 0 (vland0)(MGT) 1 (eth1)

Min Tx Rate: 6M (6 Mbps) Zero (0 bps)

Max Tx Rate: Same

Min PDU Size: AUTO

Max PDU Size: Same

IP ToS: Best Effort (0)

Pkts To Send: Infinite

0 0 0 0 22 1000 2.23 Samsung57Edge-TCP-BI-A <-> Samsung57E...

Logged in to: localhost:4002 as: Admin

LANforge Manager Version(5.4.6)

Control Reporting Windows Info Tests

Status Port Mgr Extended Port Mgr Layer-3 L3 Endps Layer 4-7 RF-Generator Generic Test Mgr Resource Mgr Interop DUT Profiles Traffic-Profiles Alerts Warnings + Wifi-Messages

Rpt Timer: Fast (1 s) Go Test Manager: all Select All Start+ Stop- Quiesce Clear

View: 0-20000 Go Display Create Modify Delete

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	Avg RTT	Rpt Timer	EID	Endpoints (A <-> B)
Samsung57Edge-TCPUL	LF/TCP	Run	0	659	0	5,926,546	0	0	0	0	1,092	1000	2.24	Samsung57Edge-TCPUL-A <-> Samsung57E...

Logged in to: localhost:4002 as: Admin

Bi-Directional traffic can be run by setting the Tx-Rate rate on both client and server side.

LANforge Manager Version(5.4.6)

Control Reporting Windows Info Tests

Generic Test Mgr Resource Mgr Interop DUT Profiles Traffic-Profiles Alerts Warnings + Wifi-Messages

Status Port Mgr Extended Port Mgr Layer-3 L3 Endps Layer 4-7 RF-Generator

Rpt Timer: Fast (1 s) Go Test Manager: all Select All Start+ Stop- Quiesce Clear

View: 0-20000 Go Display Create Modify Delete

Cross Connects for Selected Test Manager

Name: Samsung57Edge-TCP-Bi - Create/Modify Cross Connect

Buttons: +, -, All, Display, Sync, Batch-Creat, Apply, OK, Cancel

Cross-Connect: Samsung57Edge-TCP-Bi

CX Type: LANforge / TCP

Resource: Endpoint A (Client) 10 (21DK6913) Endpoint B (Server) 1 (ct521b-8fef)

Port: 0 (wlan0)(MGMT) 1 (eth1)

Min Tx Rate: 6M (6 Mbps) 6M (6 Mbps)

Max Tx Rate: Same Same

Min PDU Size: AUTO AUTO

Max PDU Size: Same Same

IP ToS: Best Effort (0) Best Effort (0)

Pkts To Send: Infinite Infinite

Logged in to: localhost:4002 as: Admin

Reports smooth-L4.png bi.png interop.png RTSP.png candela-install bi-2.png many

SM-G935T (as superuser)

LANforge InterOp

LIVE DATA VIDEO VIEW WEB BROWSER

SPEED (↑) 207 bps/2.60 Kbps

Traffic status (Y-axis in Mbps X-axis in Sec)

Network Info

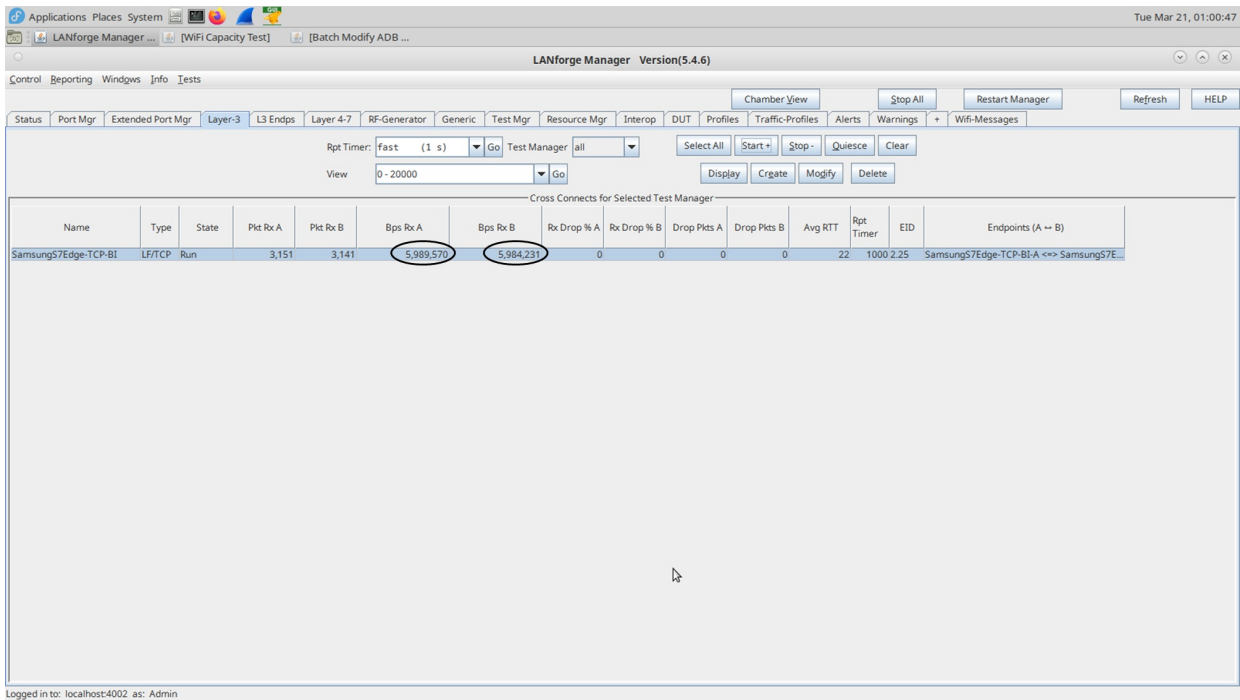
IP: 192.168.1.10

SSID: Interop_QA

BSSID: 28:80:80:20:9b:00

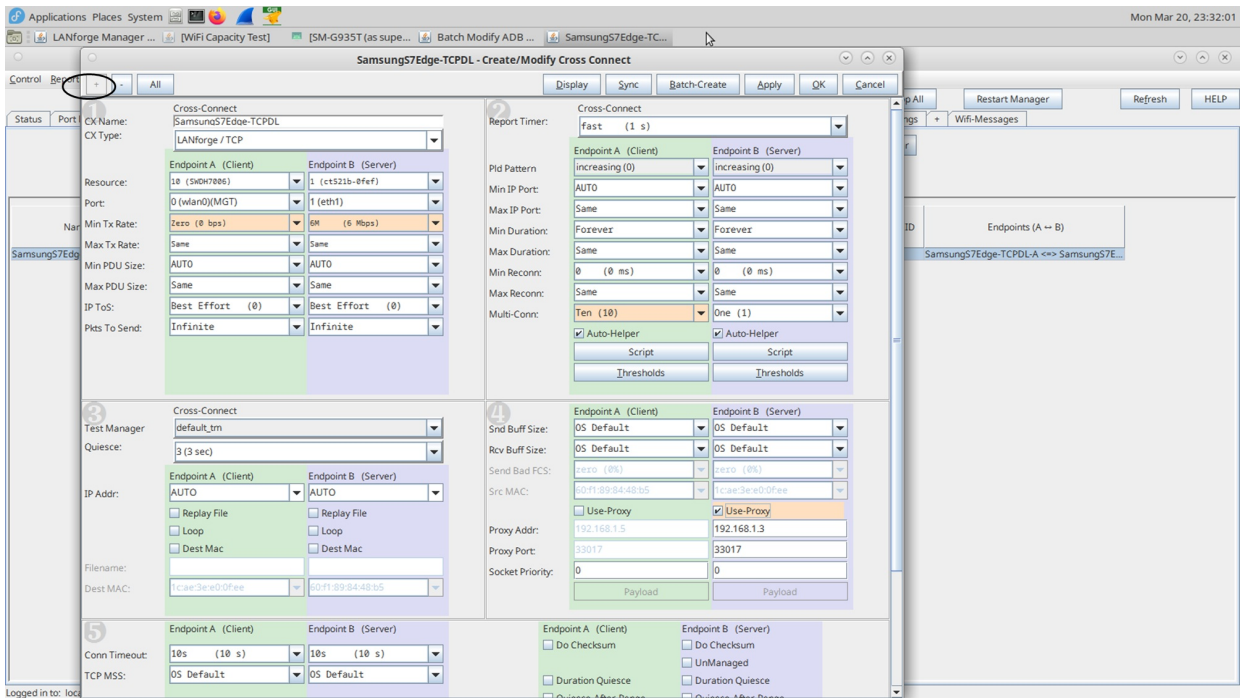
Signal: -88 dBm

LinkSpeed: 433 Mbps



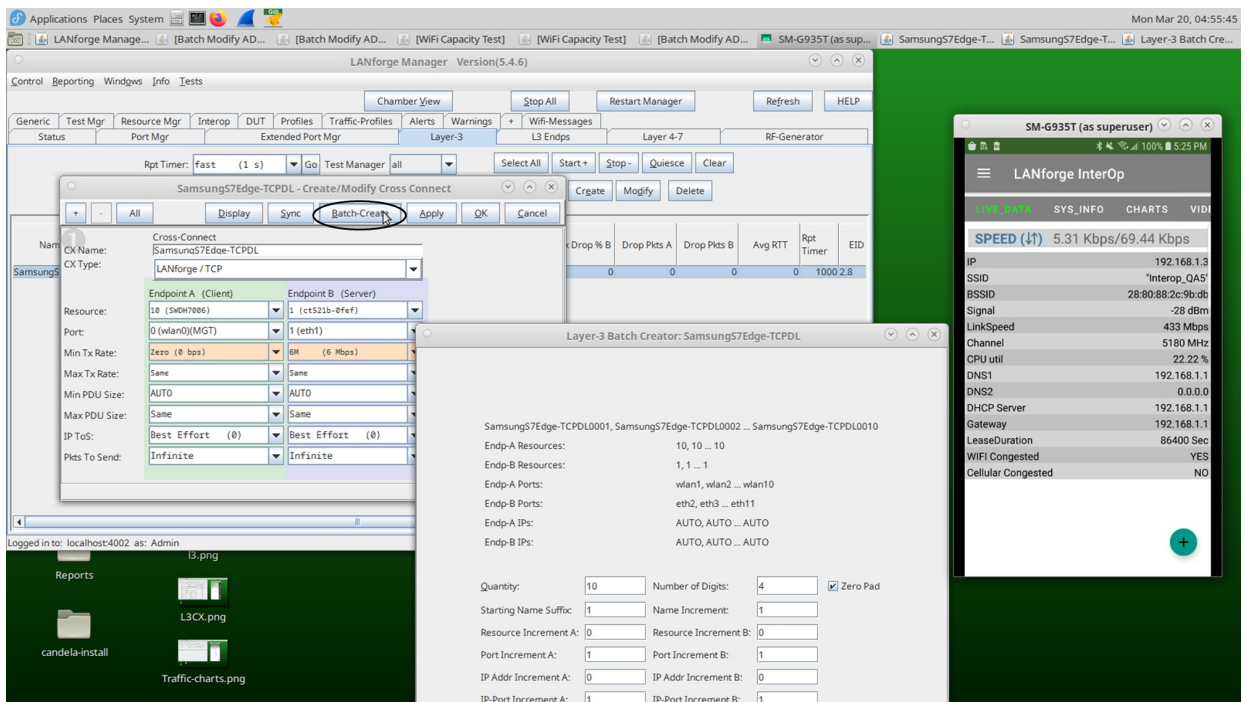
Similarly, a UDP cross-connect can be created by changing the CX Type to LANforge/UDP.

- The Modify window (found by single-clicking a cross-connect and clicking Modify or double-clicking on a cross-connect) displays the first configuration section which is sufficient for creating a cx. Further cross-connect options are displaying by pressing the + button in the upper right-hand corner.

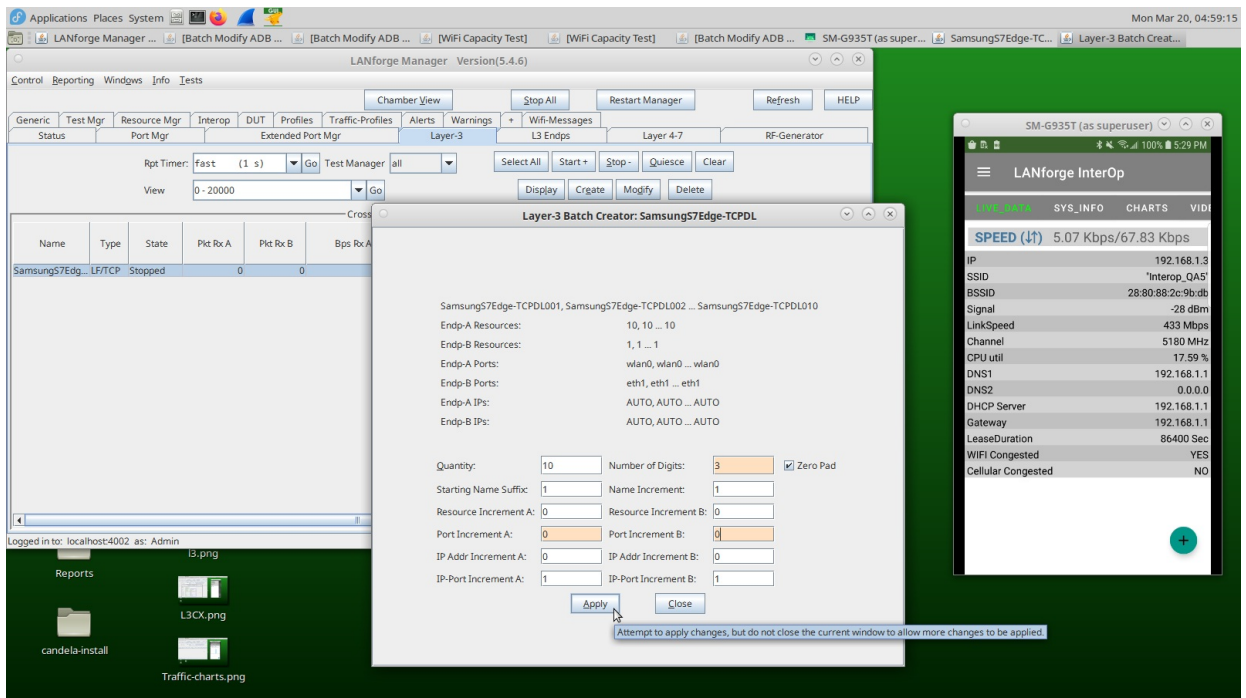


To understand more about each option, click on this [link](#).

- Multiple cross-connects can be created with a single station by double-clicking on the cross-connect and selecting Batch-Crete option.



9. Below, Quantity, Port increment, Resource Increment are entered in, then saved by clicking on Apply.



10. Select all the cross-connects (by clicking the Select All button) and press Start when all of them are highlighted. This will start all of them. Then, open the Charts tab in the app to observe the throughput. Below, the throughput is around 66 Mbps the same thing is reflected in Charts tab.

Applications Places System Mon Mar 20, 05:07:34

LANforge Manager ... [Batch Modify ADB ...] [Batch Modify ADB ...] [WiFi Capacity Test] [WiFi Capacity Test] [Batch Modify ADB ...] SM-G935T (as superuser) SamsungS7Edge-TC...

LANforge Manager Version(5.4.6)

Control Reporting Windows Info Tests

Chamber View Stop All Restart Manager Refresh HELP

Generic Test Mgr Resource Mgr Interop DUT Profiles Traffic-Profiles Alerts Warnings Wifi-Messages

Status Port Mgr Extended Port Mgr Layer-3 L3 Endps Layer 4-7 RF-Generator

Rpt Timer: fast (1 s) Test Manager: all Select All Start Stop Quiesce Clear

View: 0 - 20000 Go Display Create Modify Delete

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	Avg RTT	Rp Ttr
SamsungS7Edge-TCFDL	LF/TCP	Run	4,964	0	5,973,845	0	0	0	0	0	-838	
SamsungS7Edge-TCFDL001	LF/TCP	Run	4,958	0	5,967,460	0	0.02	0	1	0	-835	
SamsungS7Edge-TCFDL002	LF/TCP	Run	4,966	0	5,976,046	0	0	0	0	0	-829	
SamsungS7Edge-TCFDL003	LF/TCP	Run	4,971	0	5,975,850	0	0	0	0	0	-830	
SamsungS7Edge-TCFDL004	LF/TCP	Run	4,957	0	5,967,777	0	0	0	0	0	-837	
SamsungS7Edge-TCFDL005	LF/TCP	Run	4,964	0	5,973,804	0	0	0	0	0	-835	
SamsungS7Edge-TCFDL006	LF/TCP	Run	4,960	0	5,970,032	0	0	0	0	0	-835	
SamsungS7Edge-TCFDL007	LF/TCP	Run	4,966	0	5,976,129	0	0	0	0	0	-831	
SamsungS7Edge-TCFDL008	LF/TCP	Run	4,965	0	5,974,404	0	0	0	0	0	-837	
SamsungS7Edge-TCFDL009	LF/TCP	Run	4,965	0	5,974,582	0	0	0	0	0	-835	
SamsungS7Edge-TCFDL010	LF/TCP	Run	4,968	0	5,976,066	0	0	0	0	0	-837	

Logged in to: localhost:4002 as: Admin

Reports

Reports

L3CX.png

candela-install

Traffic-charts.png

SM-G935T (as superuser)

LANforge InterOp

LIVE_DATA SYS_INFO **STARTED** VIDEO

SPEED (↓) 68.26 Mbps/720.82 Kbps

Upload Download Total

Traffic status (Y-axis in Mbps X-axis in Sec)

+

Candela Technologies, Inc., 2417 Main Street, Suite 201, Ferndale, WA 98248, USA
 www.candelattech.com | sales@candelattech.com | +1.360.380.1618