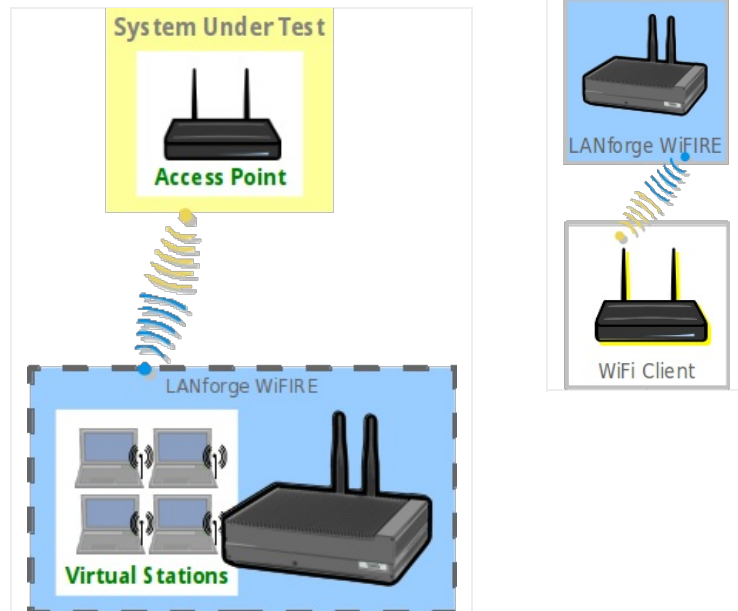


Multiple Stations with a Hunt Script

Goal: Do packet sized testing with a hunt script using multiple stations.

We will manipulate the parameters of 10 Layer 3 connections using a single hunt script. The WiFi stations will change packet size as a group by being part of a Test Group. In this scenario, we will create traffic to different upstream destinations using MAC VLANs, and the AP wired up to **eth1** of our LANforge machine. Requires a **CT-520** for only stations, or a **CT-523** if you also want a WiFi monitor station.



1. Create 10 virtual stations: in the **Port Mgr** tab, highlight radio **wiphy0** and click the Create button. In this scenario, we are using SSID jedtest.

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

2 Shelf: 1 Resource: 1 (brent-523) Port: 2 (wiphy0)

3 VLAN ID: DHCP-IPv4
 Parent MAC: 00:0e:8e:4e:59:2f DHCP Client ID: None
 MAC Addr: xx:xx:xx:*:xx IP Address: Global IPv6: AUTO
 Quantity: 10 IP Mask or Bits: Link IPv6: AUTO
 Gateway IP: IPv6 GW: AUTO
 #1 Redir Name: #2 Redir Name:
 STA ID: 0 SSID: jedtest
 WiFi AP: Key/Phrase:
 WPA WPA2 WEP

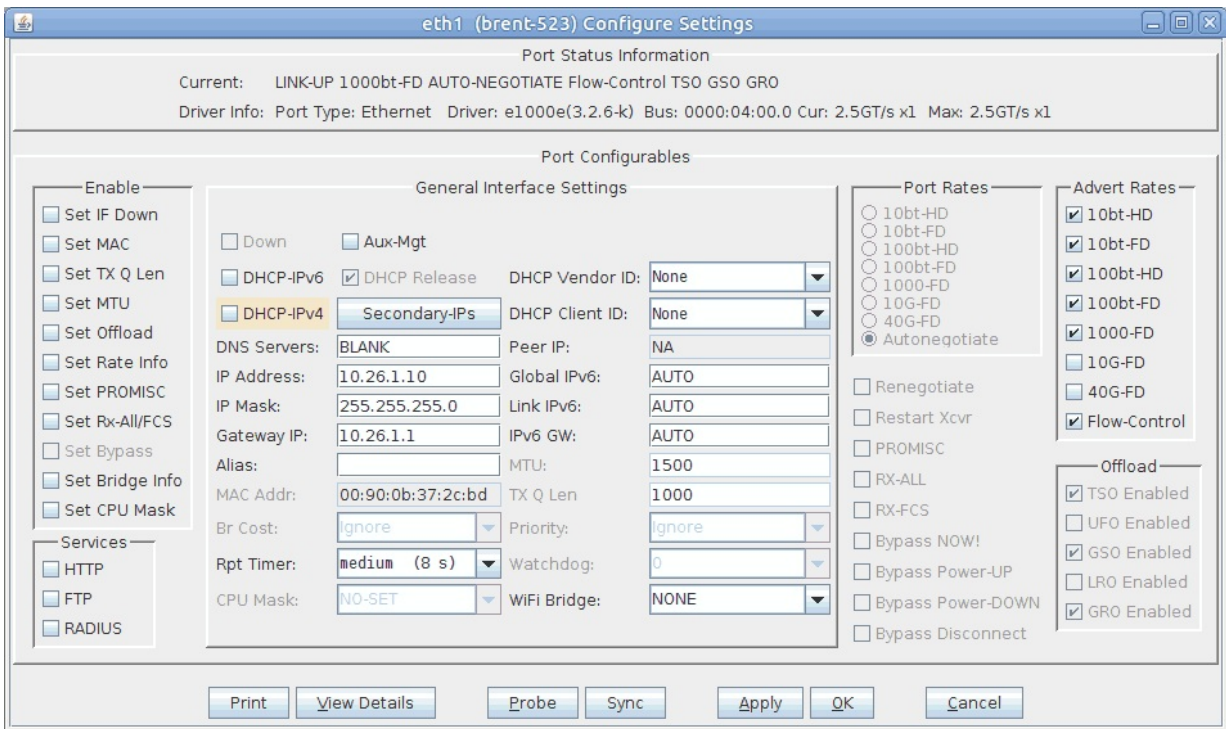
4 Down
 Ready

A. Select WiFi STA

- B. Check DHCP-IPv4
- C. Quantity: 10
- D. Station ID: 0
- E. SSID: jedtest
- F. Click **Apply** and then close the window.
- G. You should see stations `sta0 - sta9`.

For more information see [creating virtual stations](#)

2. **(Simple Method)** This method only requires setting the IP on eth1. In this scenario, our upstream network is `10.26.1.0/24`. In the **Port Mgr** tab, highlight **eth1** and click **Modify**.



- A. IP: 10.26.1.10
- B. IP Mask: 255.255.255.0
- C. Gateway IP: 10.26.1.1
- D. Click **OK**.

3. **(Optional Advanced Method)** Create ten MAC VLANs on the eth1. In this scenario, our upstream network is `10.26.1.0/24`. In the **Port Mgr** tab, highlight **eth1** and click **Create**.

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

2 Shelf: 1 Resource: 1 (brent-523) Port: 1 (eth1)

3 VLAN ID: DHCP-IPv4
Parent MAC: 00:90:0b:37:2c:bd DHCP Client ID: None
MAC Addr: xx:xx:xx:*:xx IP Address: 10.26.1.11 Global IPv6: AUTO
Quantity: 10 IP Mask or Bits: 255.255.255.0 Link IPv6: AUTO
Gateway IP: 10.26.1.1 IPv6 GW: AUTO
#1 Redir Name: #2 Redir Name:
STA ID: SSID:
WiFi AP: Key/Phrase:
 WPA WPA2 WEP

4 Down
Apply Cancel Ready

- A. Select MAC-VLAN
- B. Quantity: 10
- C. IP: 10.26.1.11
- D. IP Mask: 255.255.255.0
- E. Gateway: 10.26.1.1
- F. Click **Apply** and close the window.
- G. You should see 10 MAC VLANs, `eth1#0 - eth1#9`.

4. Create ten Layer-3 cross connects. We will start at 10Mbps transmit on them as a reasonable start. In general hunt scripts start low and try to work their way higher. When using more stations, set a lower starting transmit rate. In the Layer-3 tab, click Create.

sta-mac-0 - Create/Modify Cross Connect

+ - All Display Sync Batch-Create Apply OK Cancel

1 Cross-Connect
CX Name: sta-mac-0
CX Type: LANforge / UDP

	Endpoint A	Endpoint B
Resource:	1 (brent-523)	1 (brent-523)
Port:	1 (eth1)	4 (sta0)
Min Tx Rate:	10M (10 Mbps)	10M (10 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

- A. Name: **sta-mac-0**
- B. Endpoint-A: **eth1** (if using the advanced MAC-VLAN method, set this to **eth1#0**).
- C. Endpoint-B: sta0
- D. Type: LANforge / UDP

- E. Min Tx Rate: 10Mbps (both sides)
- F. Click **Apply**. Leave the window open.

5. Create nine more stations. Click **Batch-Create**.

Layer-3 Batch Creator: sta-mac-0

sta-mac-1, sta-mac-2 ... sta-mac-9
Endp-A Resources: 1, 1 ... 1
Endp-B Resources: 1, 1 ... 1
Endp-A Ports: eth1, eth1 ... eth1
Endp-B Ports: sta1, sta2 ... sta9
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. Quantity: 9
- B. Deselect **Zero Pad**.
- C. If only eth1 is used for upstream traffic, set **Port Increment A to 0**. Otherwise leave it at 1.
- D. Click **Apply** and close window.
- E. Close the Create/Modify Cross Connect window.

6. You will see ten Layer-3 connections in the Layer-3 tab.

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-I/O

Rpt Timer: default (5 s) Go Test Manager all Select All Start Stop Quiesce Clear

View 0 - 500 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
sta-mac-0	LF/UDP	Stopped	0	0	0	0	0	0	0	0
sta-mac-1	LF/UDP	Stopped	0	0	0	0	0	0	0	0
sta-mac-2	LF/UDP	Stopped	0	0	0	0	0	0	0	0
sta-mac-3	LF/UDP	Stopped	0	0	0	0	0	0	0	0
sta-mac-4	LF/UDP	Stopped	0	0	0	0	0	0	0	0
sta-mac-5	LF/UDP	Stopped	0	0	0	0	0	0	0	0
sta-mac-6	LF/UDP	Stopped	0	0	0	0	0	0	0	0
sta-mac-7	LF/UDP	Stopped	0	0	0	0	0	0	0	0
sta-mac-8	LF/UDP	Stopped	0	0	0	0	0	0	0	0
sta-mac-9	LF/UDP	Stopped	0	0	0	0	0	0	0	0

Logged in to: brent-523:4002 as: Admin

7. Create a Test Group. In the Test Group tab, click **Create**.

Create/Modify Test Group

Test Group Name: sta-mac Script Config As Totals

Cross Connects (CX)

Registered CXs

- sta-mac-0
- sta-mac-1
- sta-mac-2
- sta-mac-3
- sta-mac-4
- sta-mac-5
- sta-mac-6
- sta-mac-7
- sta-mac-8
- sta-mac-9

Free CXs

← Add Cx

Free Cx →

Apply OK Cancel

- Name: **sta-mac**
- Select **Config As Totals**.
- Highlight all the **sta-mac-x** connections and click ← **Add Cx**.
- Click **Apply**.
- Click **Script**.

F. Configure the Test Group Script.

- A. Group Name: **sta-mac**
- B. Script Type: **ScriptHunt**
- C. Script Name: **start-10Mbps**
- D. Starting Rate: **10M**
- E. Click **OK**.

G. Close the Create Test Group window.

8. Start the test. Highlight the test group and click **Start**.

9. You will see the script report window.

```
Script Report for: sta-mac Completed at: Tue Mar 28 16:14:45 PDT 2017
# iteration: 0/180 Endpoint: sta-mac now: 1490742330645ms duration: 5002ms paused: 0ms
# payload-size: 60 cfg-rate: 10000000
# tx-pkts: 104138 tx-bytes: 6248280 tx-bytes-low-level: 10622076 tx-pps: 20819
# tx-bps: 9993251 tx-bps-low-level: 16988526
# rx-pkts: 42457 rx-bytes: 62496704 rx-bytes-low-level: 64279898
# rx-pps: 8488 rx-bps: 99954745 rx-bps-low-level: 102806714
# rx-drops: 0 rx-dups: 0 rx-ooo: 0 machine-load: 0.00
# peer: rx-pkts: 79744 rx-bytes: 4784640 rx-pps: 15942
# rx-bps: 7652363 rx-bps-low-level: 13009017
# dropped: 24394 drop percent: 23.4247 avg-rx-latency(us): 68 avg-rt-latency(us): 75000 peer-machine-load: 0.00
# rx-signal: -35 tx-link-speed: 450000000 rx-link-speed: 450000000 attenuation: 100 peer-rx-signal: -35 tx-peer-link-speed: 450000000
# rx-peer-link-speed: 450000000
# peer-dropped: 27 peer drop percent: 0.0636
# * Failed drop-percent constraint, reported: 23.4247% max: 5

# iteration: 1/180 Endpoint: sta-mac now: 1490742336689ms duration: 5042ms paused: 1002ms
# payload-size: 60 cfg-rate: 5000000
# tx-pkts: 52016 tx-bytes: 3120960 tx-bytes-low-level: 5305632 tx-pps: 10317
# tx-bps: 4951940 tx-bps-low-level: 8418298
# rx-pkts: 42390 rx-bytes: 62398080 rx-bytes-low-level: 64178460
# rx-pps: 8407 rx-bps: 99005284 rx-bps-low-level: 101830163
# rx-drops: 0 rx-dups: 0 rx-ooo: 0 machine-load: 0.07
# peer: rx-pkts: 51928 rx-bytes: 3115680 rx-pps: 10299
# rx-bps: 4943562 rx-bps-low-level: 8404056
# dropped: 88 drop percent: 0.1692 avg-rx-latency(us): 8 avg-rt-latency(us): 14000 peer-machine-load: 0.07
# rx-signal: -34 tx-link-speed: 450000000 rx-link-speed: 405000000 attenuation: 100 peer-rx-signal: -34 tx-peer-link-speed: 405000000
# rx-peer-link-speed: 450000000
# peer-dropped: 41 peer drop percent: 0.0966
# * Passed constraints *

# iteration: 2/180 Endpoint: sta-mac now: 1490742342693ms duration: 5002ms paused: 1002ms
# payload-size: 60 cfg-rate: 7500000
# tx-pkts: 78098 tx-bytes: 4685880 tx-bytes-low-level: 7965996 tx-pps: 15613
# tx-bps: 7494410 tx-bps-low-level: 12740497
# rx-pkts: 42457 rx-bytes: 62496704 rx-bytes-low-level: 64279898
# rx-pps: 8488 rx-bps: 99954745 rx-bps-low-level: 102806714
# rx-drops: 0 rx-dups: 0 rx-ooo: 0 machine-load: 0.07
# peer: rx-pkts: 77825 rx-bytes: 4669500 rx-pps: 15559
# rx-bps: 7468213 rx-bps-low-level: 12695962
```

10. When the test is finished, click **Graphical Report** to see graphs.

