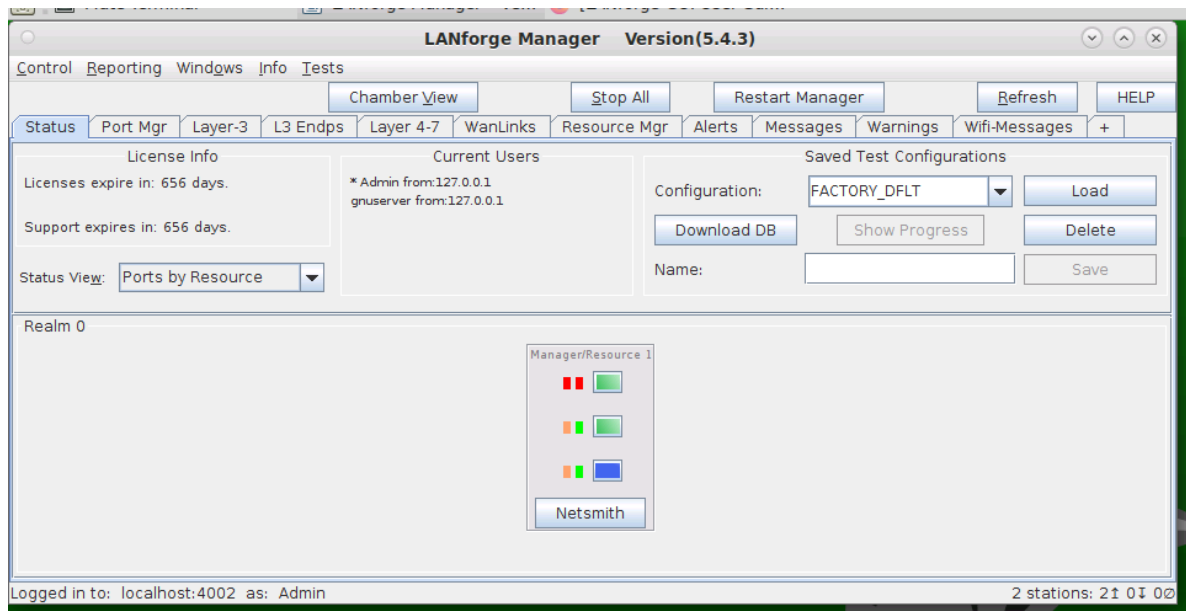


Virtual Router with DHCP Service

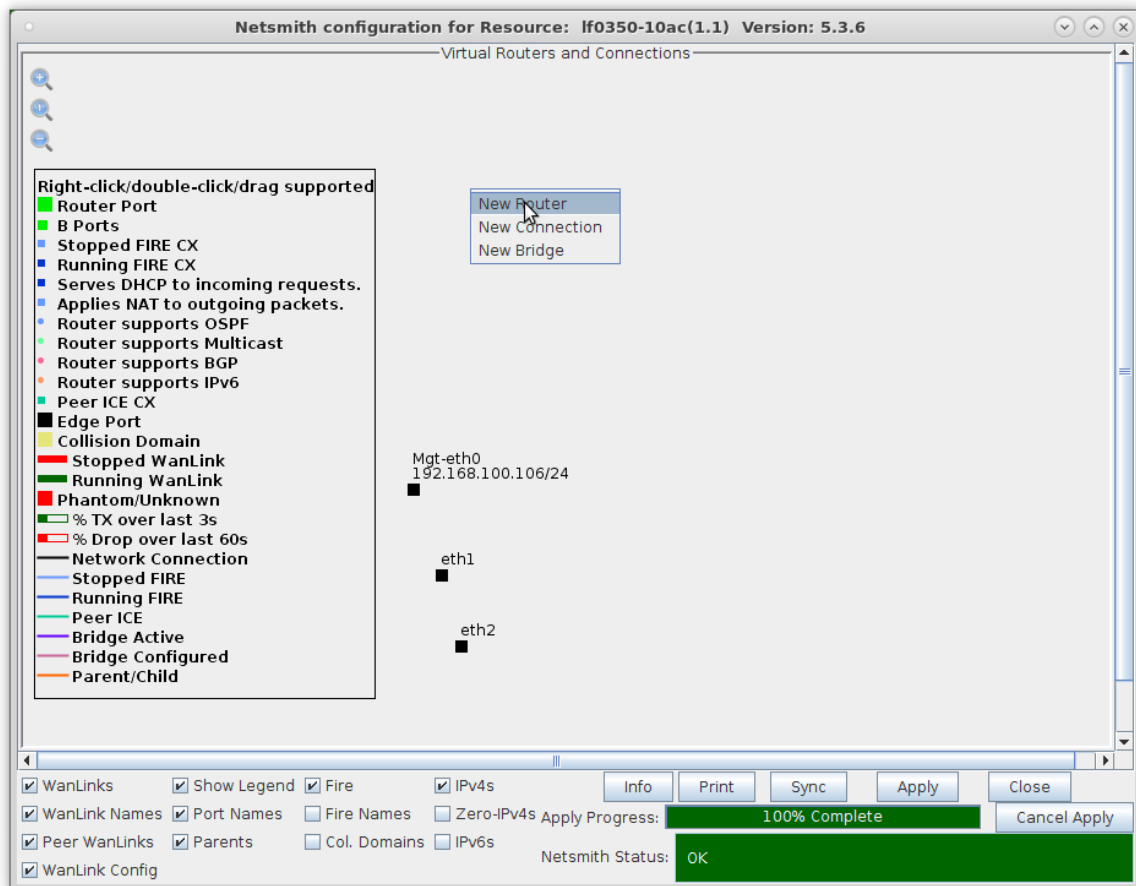
Goal: Setup a Virtual Router with one interface serving DHCP.

In this test scenario, a LANforge Virtual Router is created with one interface setup to serve DHCP to two remote redirect interfaces that are setup to be DHCP clients.

1. Setup a Virtual Router and two Netsmith Connections.
 - A. Go to the **Status** tab and click the **Netsmith** button

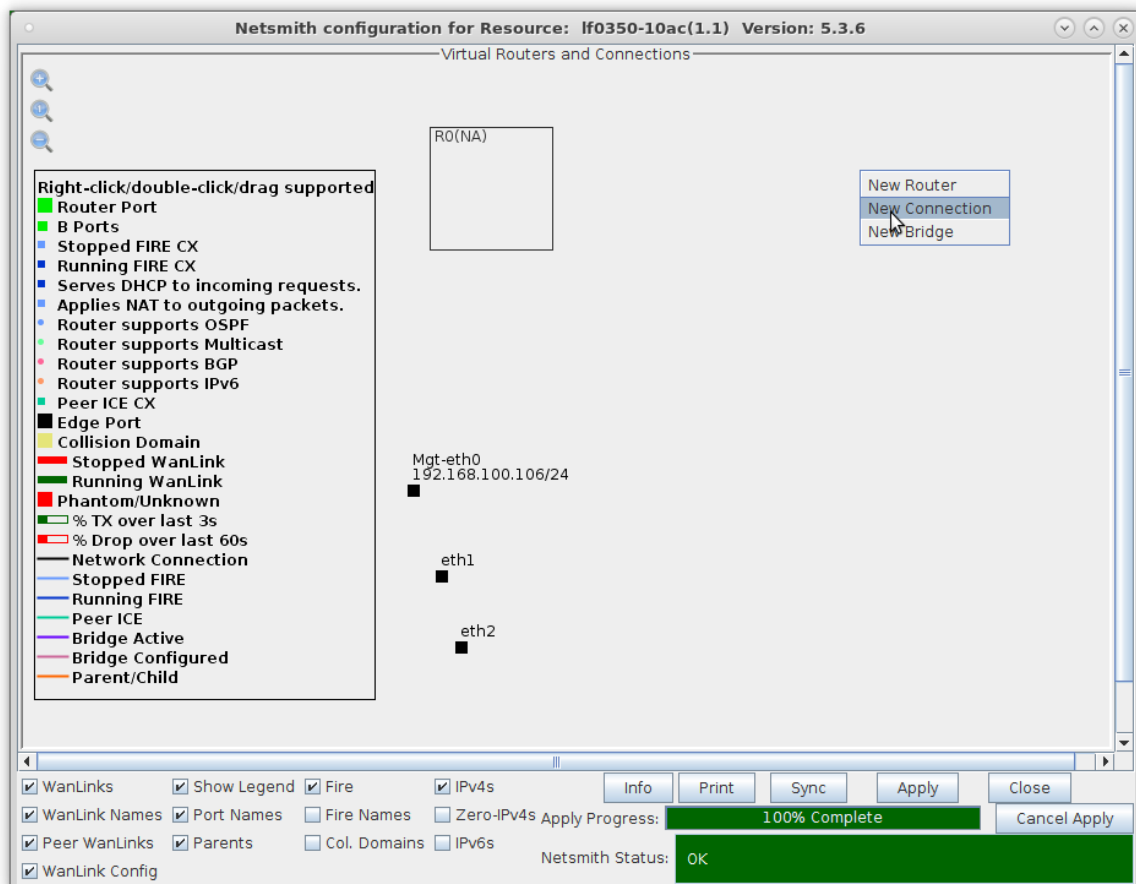


B. Right-click in the Netsmith window and select **New Router**

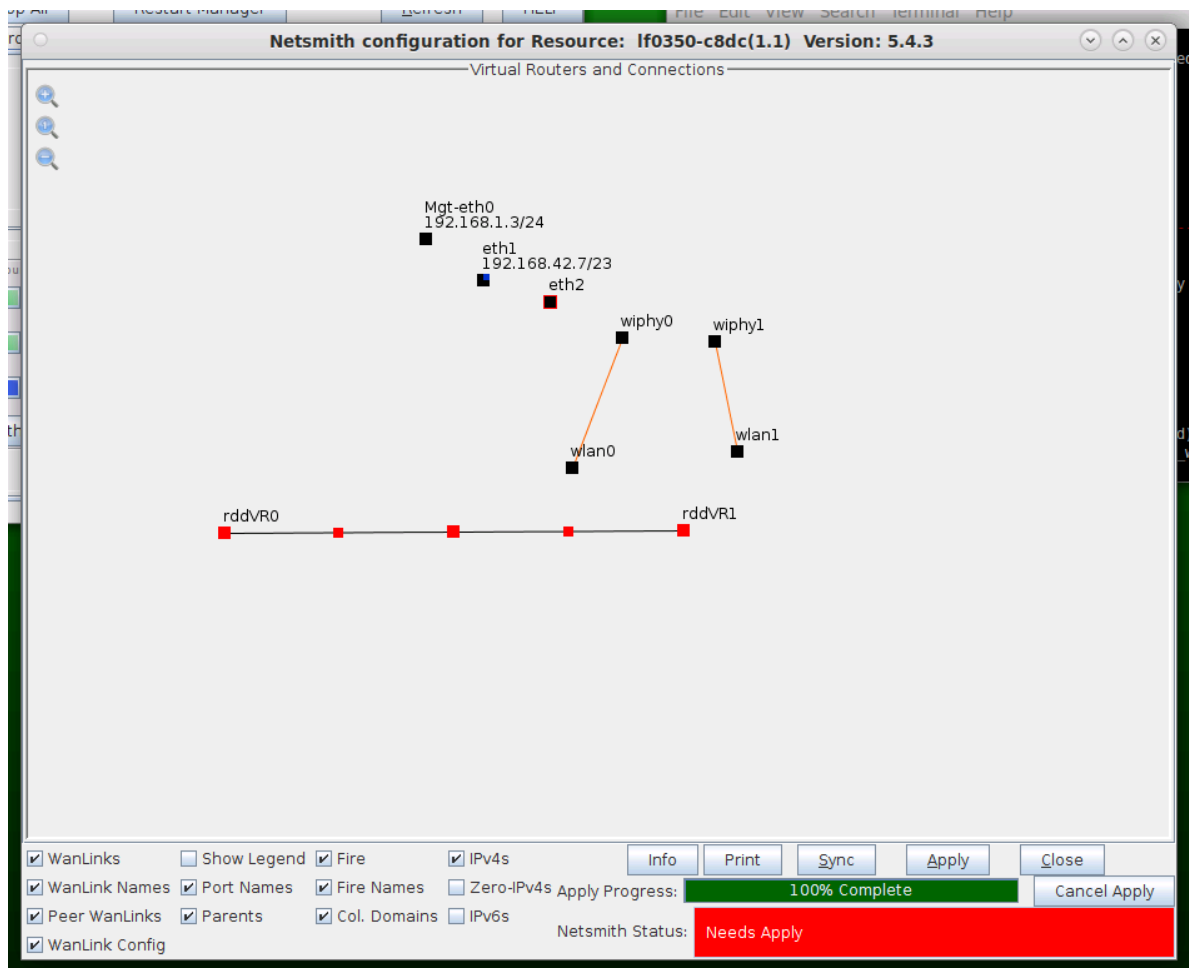


A. Follow steps discussed above for configuring the router

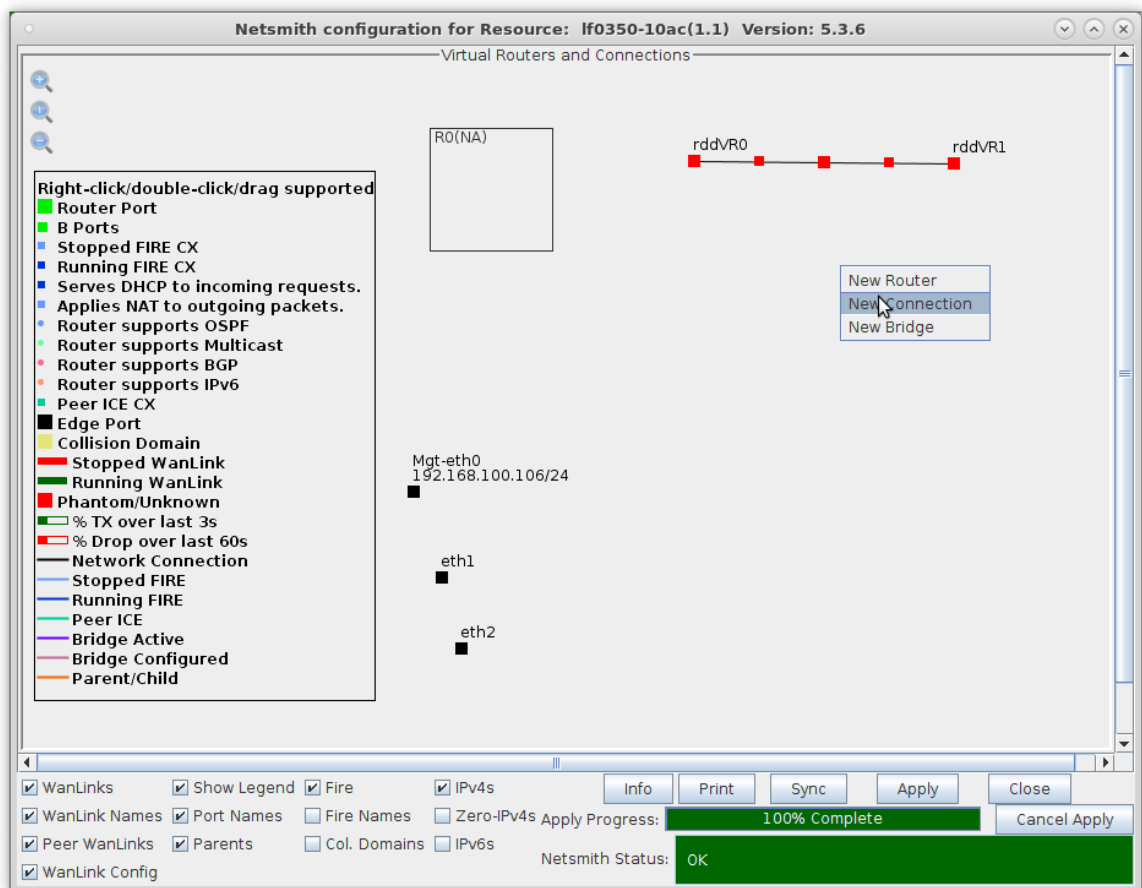
C. Right-click in the Netsmith window and select **New Connection**



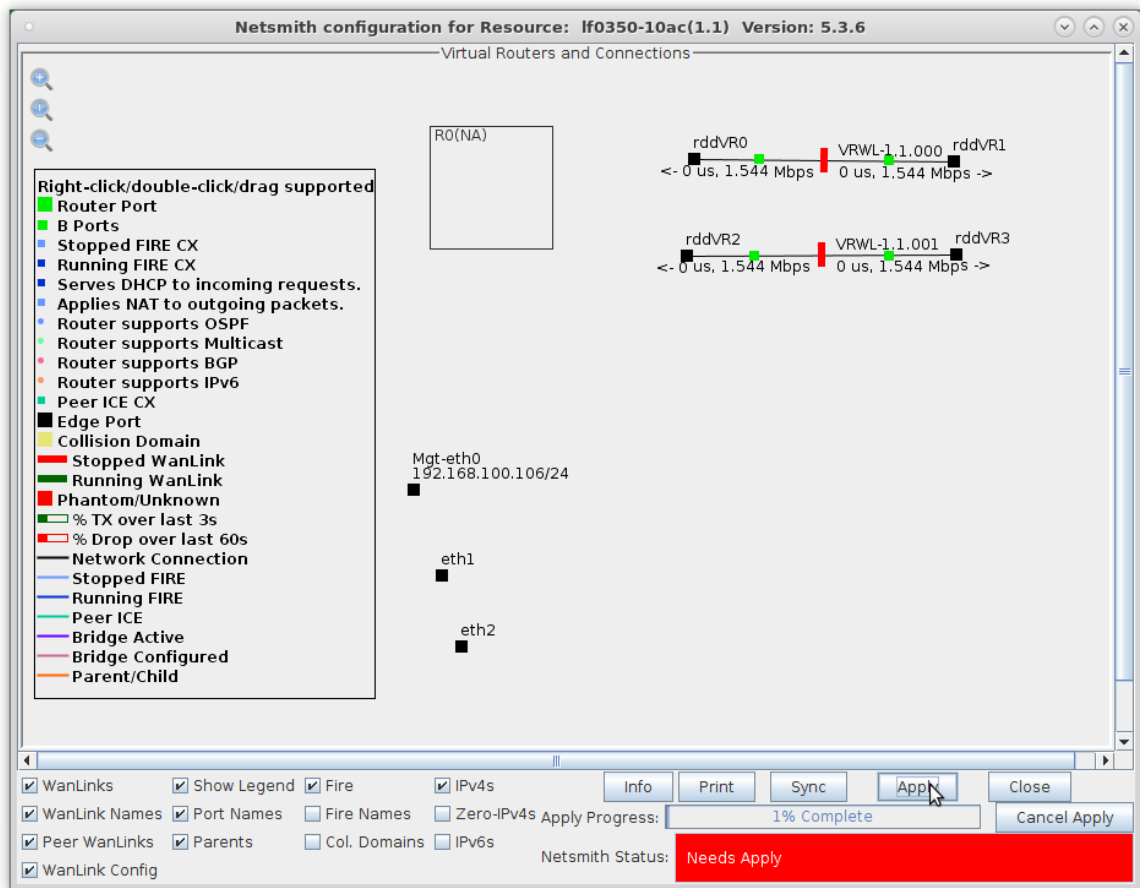
D. Accept defaults, Auto Create everything and click **OK**



E. Repeat and create a second connection.



F. Click the **Apply** button to commit the changes in Netsmith to the LANforge Server.

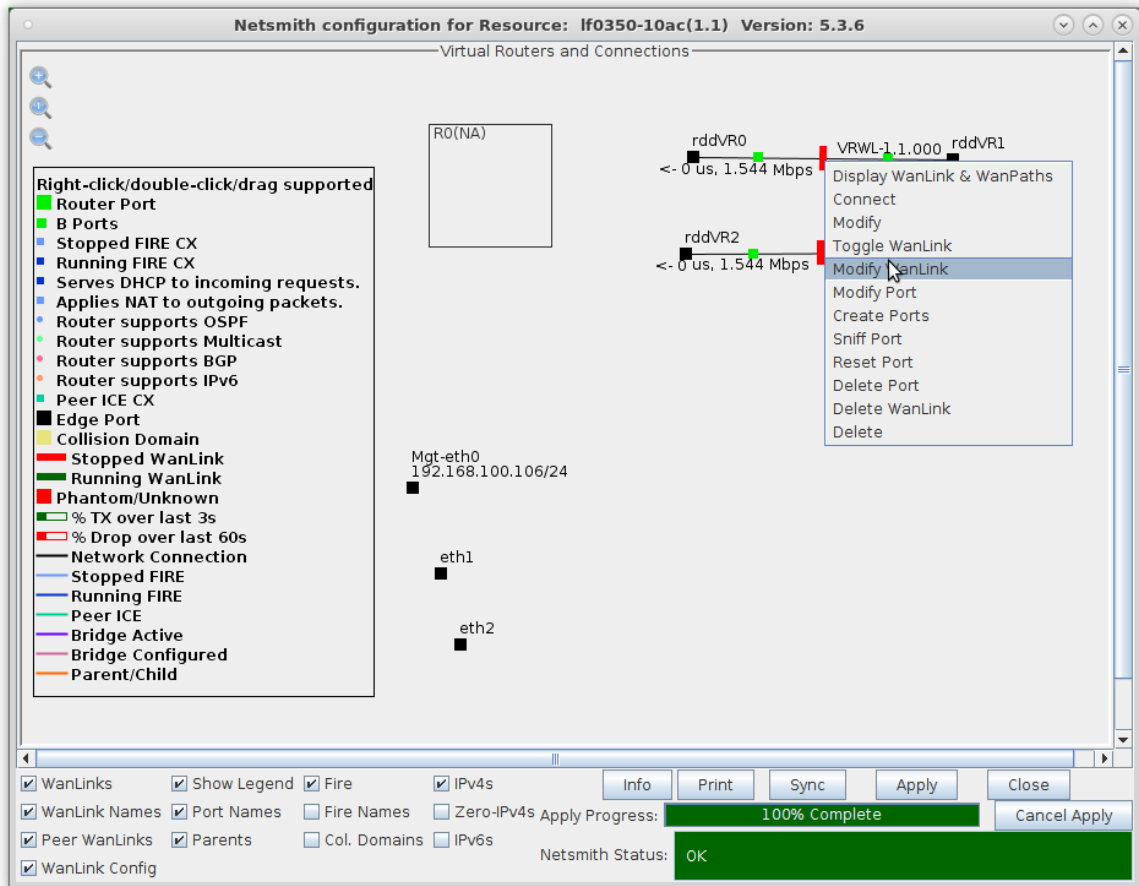


A. **NOTE:** Modifications in Netsmith are only sent to the LANforge-Server after Applying them

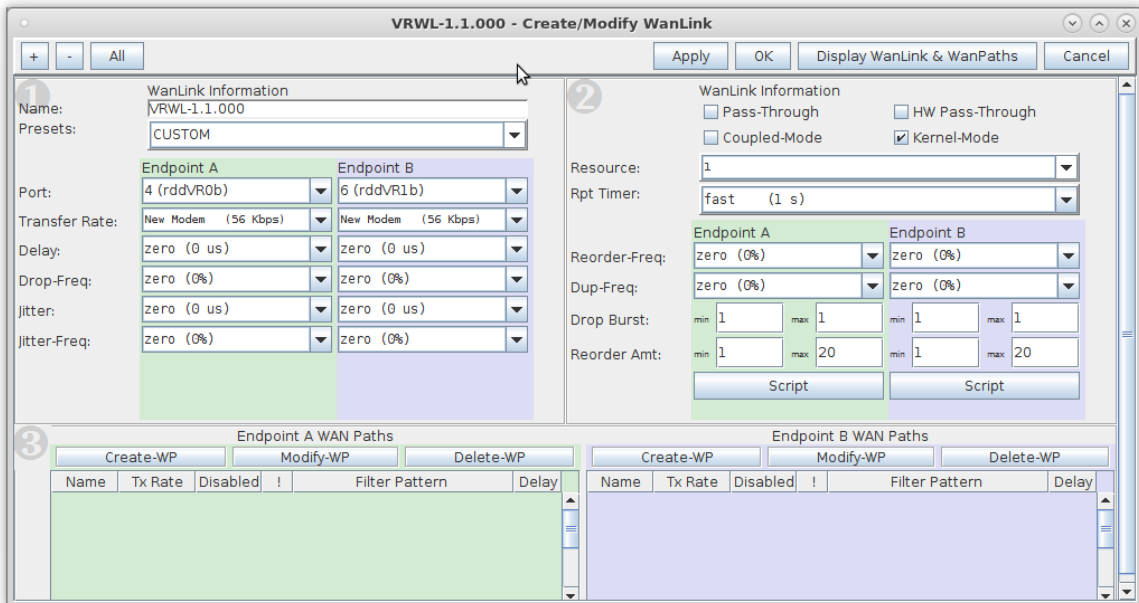
For more information see [LANforge-GUI User Guide: Virtual Interfaces](#)

2. Setup the WanLinks.

A. Right-click the first WanLink and select **Modify WanLink**



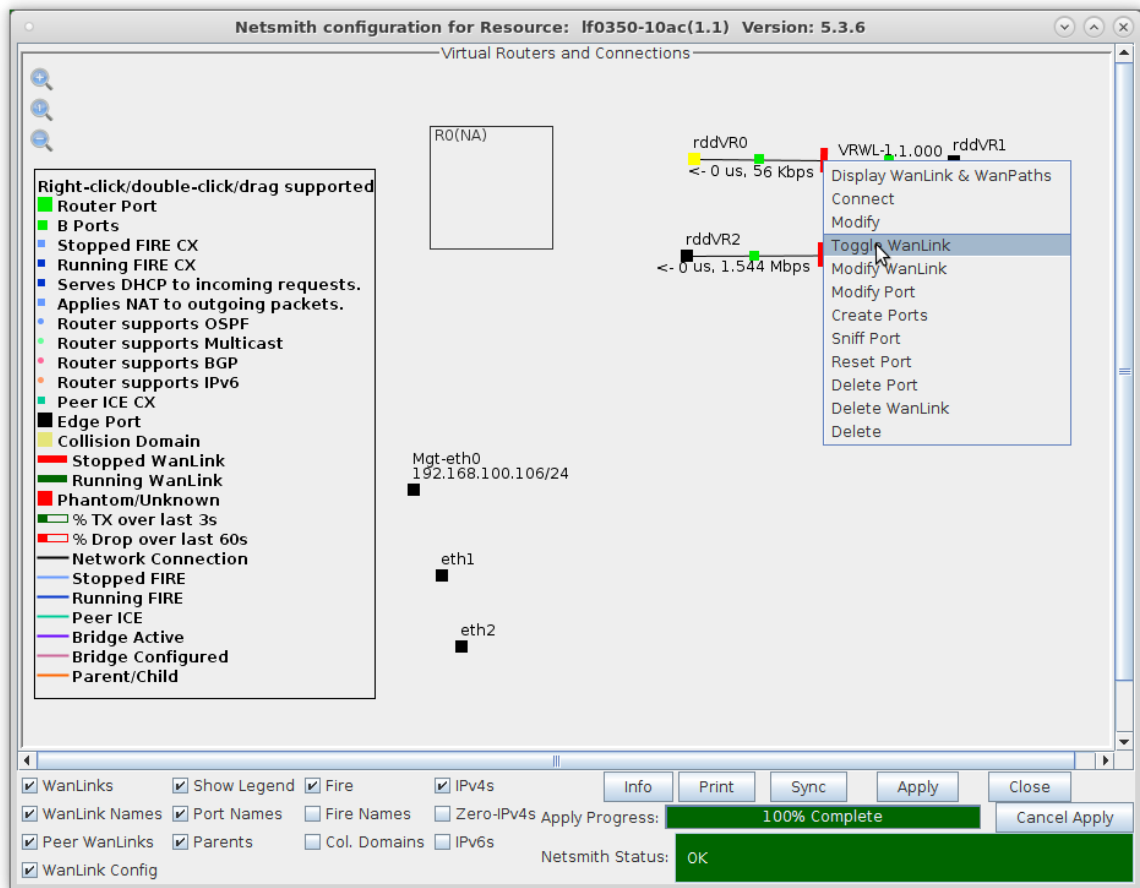
B. Enter values specific to your test and click **OK**



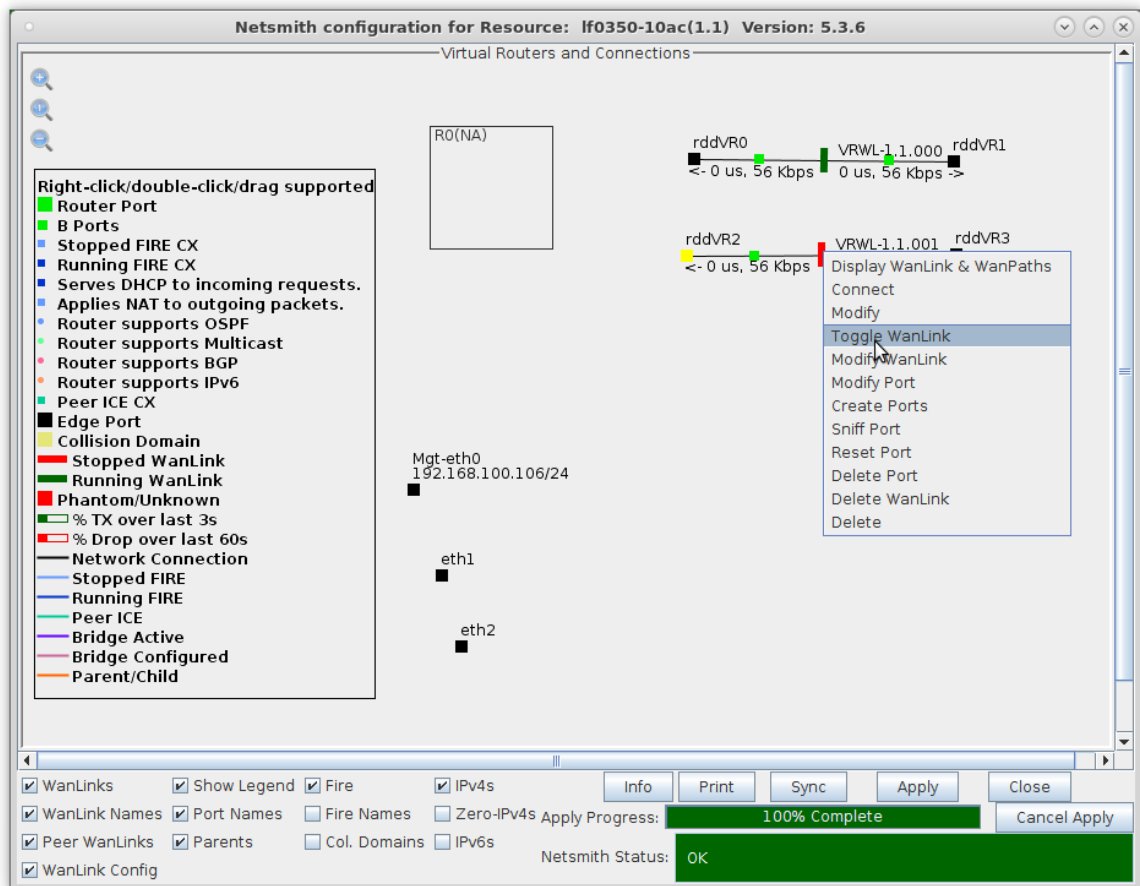
A. **NOTE:** Kernel-Mode allows for much higher emulation speeds and supports all features of the normal WAN emulation mode

B. Kernel-Mode is available for the WAN emulation if you are using a pre-compiled Linux kernel from the Candela downloads page

C. Right-click to toggle the WanLink status to Running (green).



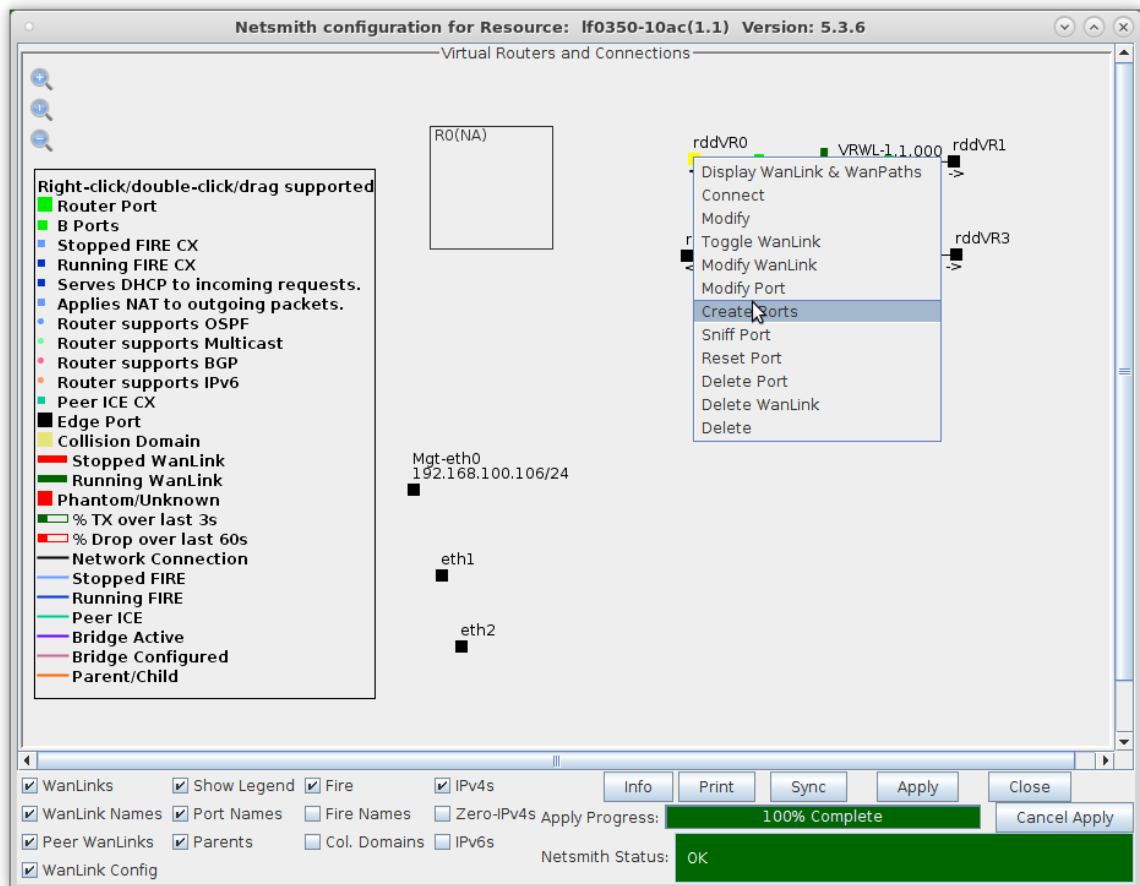
D. Repeat for the second WanLink and set it to Running (green).



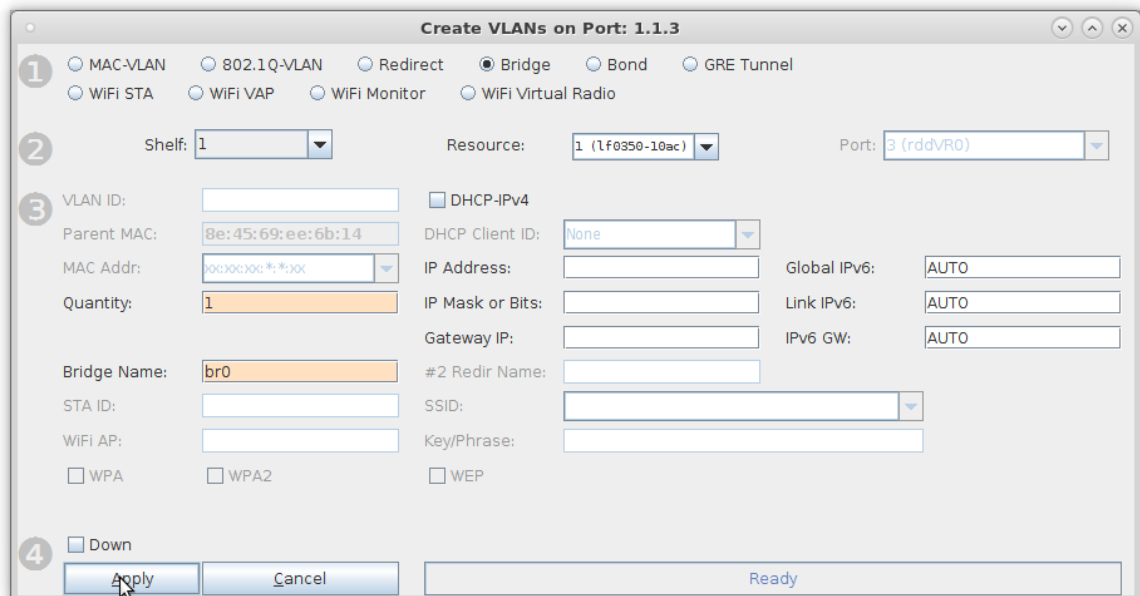
For more information see [LANforge-GUI User Guide: WanLinks \(ICE\)](#)

3. Setup the ports.

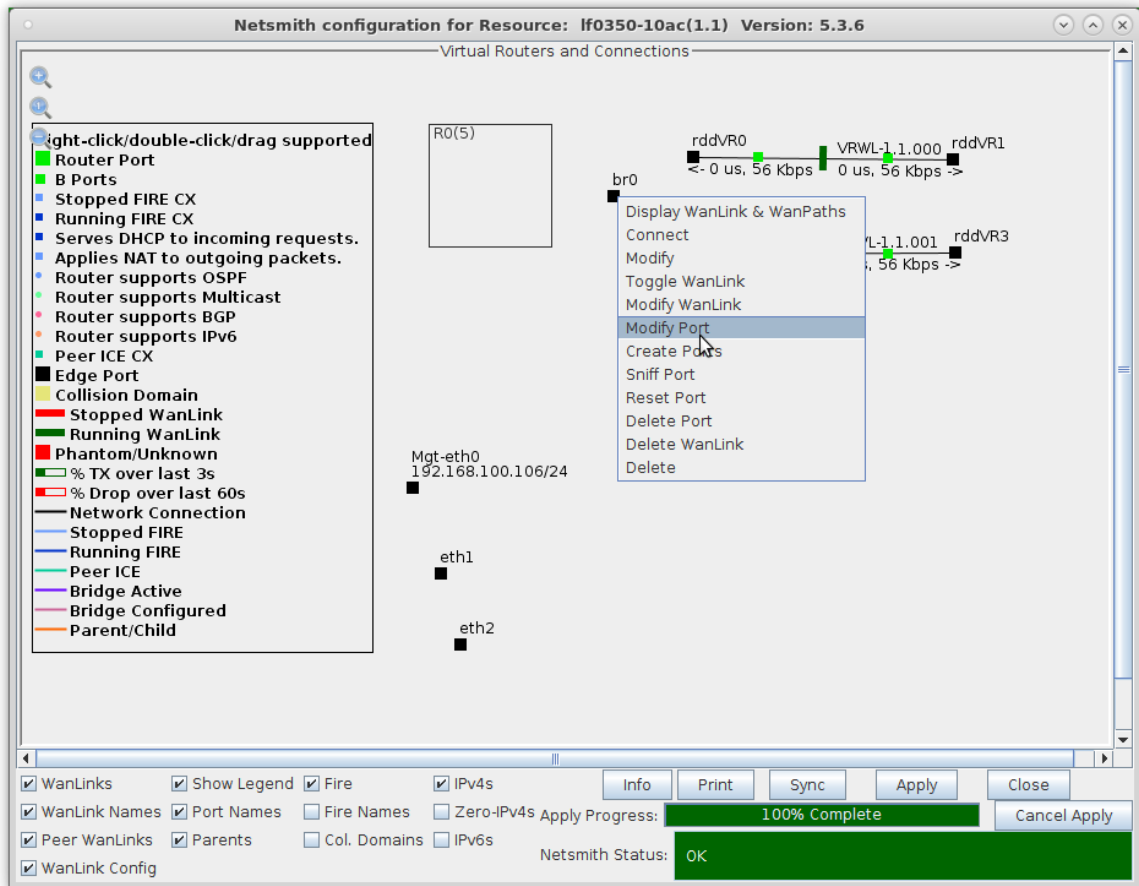
- A. Right-click port rddVR0 and select **Create Ports**



- B. Select the **Bridge** button from the available connection types, name it, and click **OK**

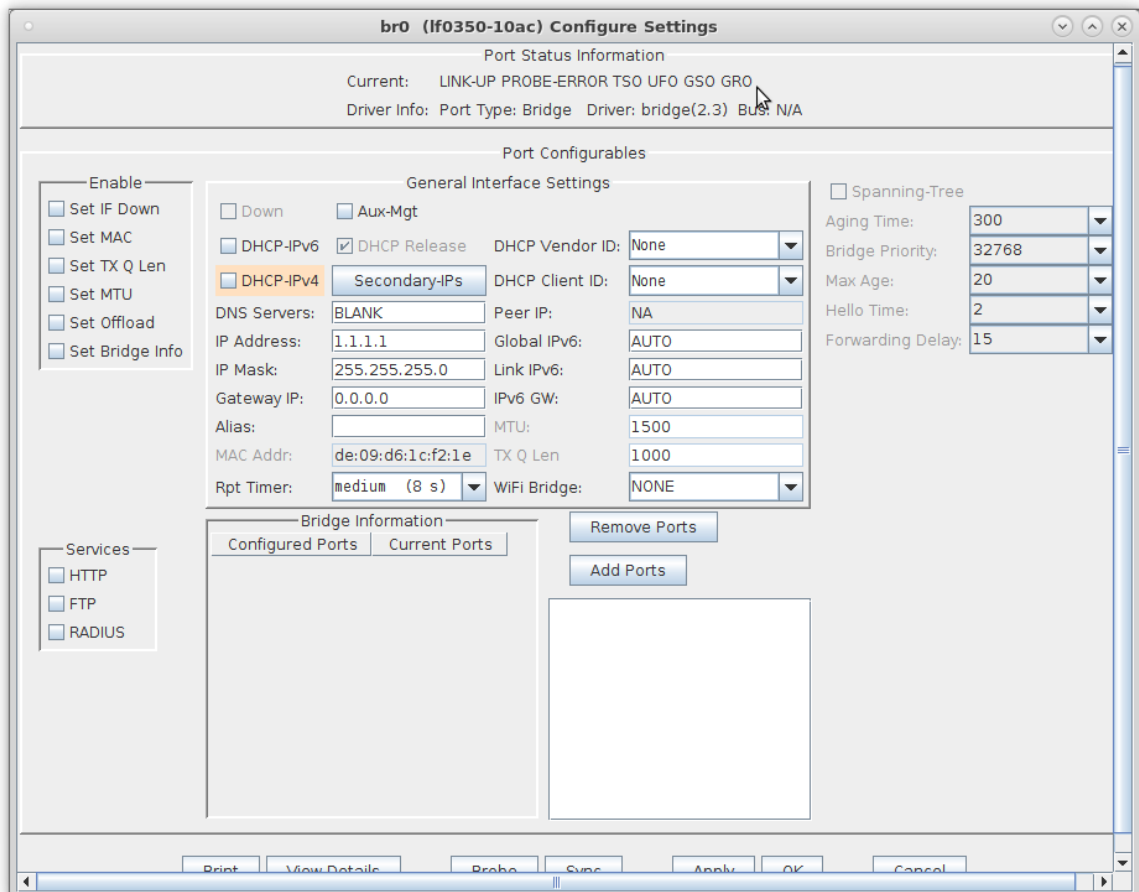


C. Right-click the bridge port and select **Modify Port**



A. **NOTE:** You will have to click the **Sync** button for your newly created bridge port to appear in the NetSmith window.

D. Assign an IP address and IP mask, then click **Apply**



- E. Enter interface names rddVR0 and rddVR2 in the whitespace located below the **Add Ports** button so that you can add them as bridge members

br0 (If0350-10ac) Configure Settings

Port Status Information
Current: LINK-UP PROBE-ERROR TSO UFO GSO GRO
Driver Info: Port Type: Bridge Driver: bridge(2.3) Bus: N/A

Port Configurables

Enable

- ☐ Set IF Down
- ☐ Set MAC
- ☐ Set TX Q Len
- ☐ Set MTU
- ☐ Set Offload
- ☐ Set Bridge Info

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: 1.1.1.1 Global IPv6: AUTO

IP Mask: 255.255.255.0 Link IPv6: AUTO

Gateway IP: 0.0.0.0 IPv6 GW: AUTO

Alias: MTU: 1500

MAC Addr: de:09:d6:1c:f2:1e TX Q Len: 1000

Rpt Timer: medium (8 s) WiFi Bridge: NONE

Spanning-Tree

☐ Spanning-Tree

Aging Time: 300

Bridge Priority: 32768

Max Age: 20

Hello Time: 2

Forwarding Delay: 15

Bridge Information

Configured Ports Current Ports

Remove Ports

Add Ports

rddVR0
rddVR2

Print View Details Probe Sync Apply OK Cancel

- F. Click **Add Ports** to add the interfaces as bridge members, then click **OK**

br0 (If0350-10ac) Configure Settings

Port Status Information
Current: LINK-UP PROBE-ERROR TSO UFO GSO GRO
Driver Info: Port Type: Bridge Driver: bridge(2.3) Bus: N/A

Port Configurables

Enable

- ☐ Set IF Down
- ☐ Set MAC
- ☐ Set TX Q Len
- ☐ Set MTU
- ☐ Set Offload
- ☐ Set Bridge Info

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: 1.1.1.1 Global IPv6: AUTO

IP Mask: 255.255.255.0 Link IPv6: AUTO

Gateway IP: 0.0.0.0 IPv6 GW: AUTO

Alias: MTU: 1500

MAC Addr: 2a:6a:10:a5:8a:52 TX Q Len: 1000

Rpt Timer: medium (8 s) WiFi Bridge: NONE

Spanning-Tree

☐ Spanning-Tree

Aging Time: 300

Bridge Priority: 32768

Max Age: 20

Hello Time: 2

Forwarding Delay: 15

Bridge Information

Configured Ports Current Ports

rddVR0 rddVR0

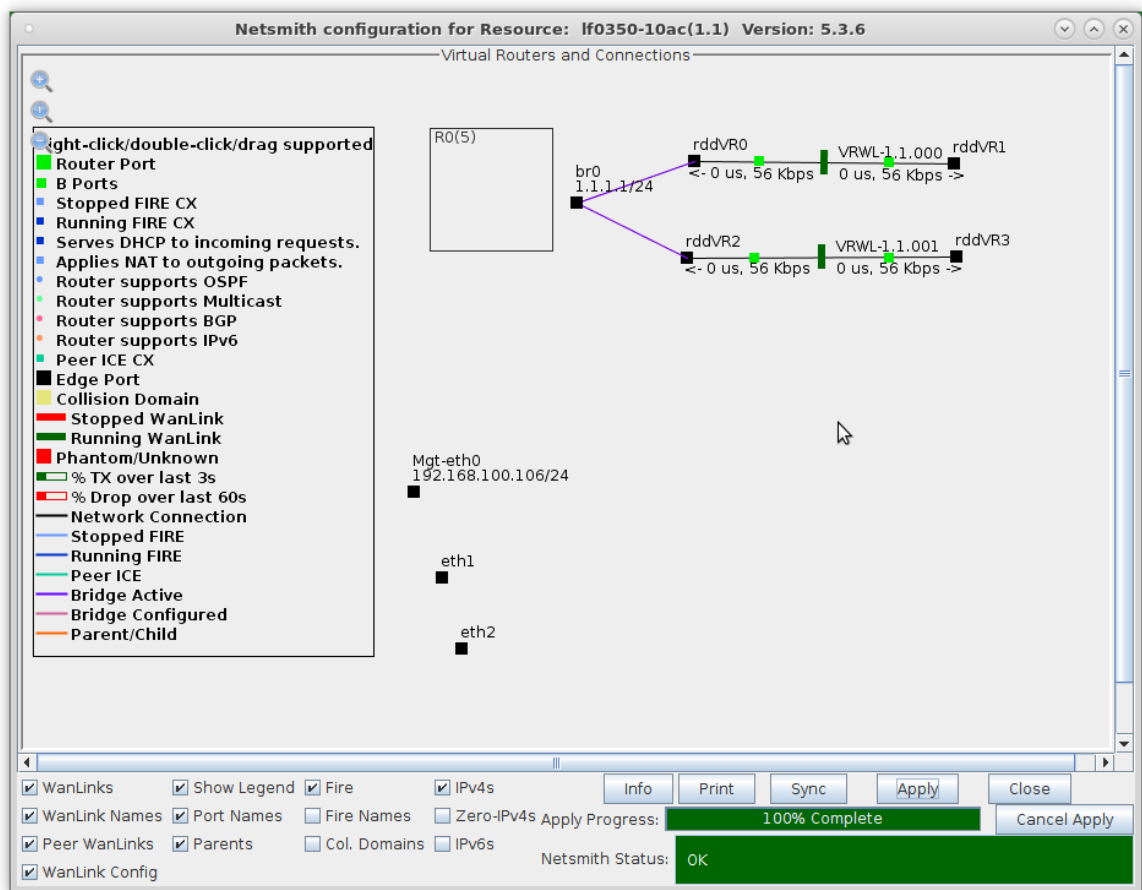
rddVR2 rddVR2

Remove Ports

Add Ports

Print View Details Probe Sync Apply OK Cancel

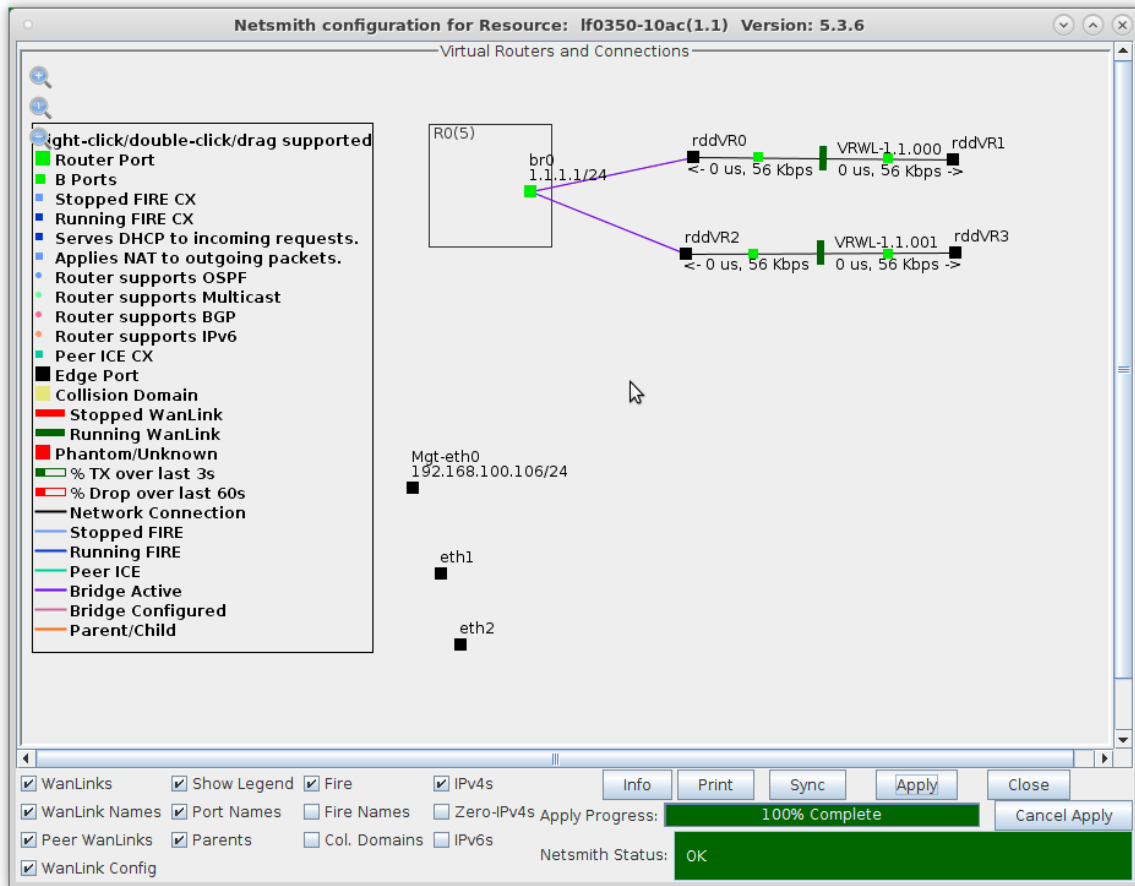
G. The Netsmith window now shows a bridge port with two bridge members



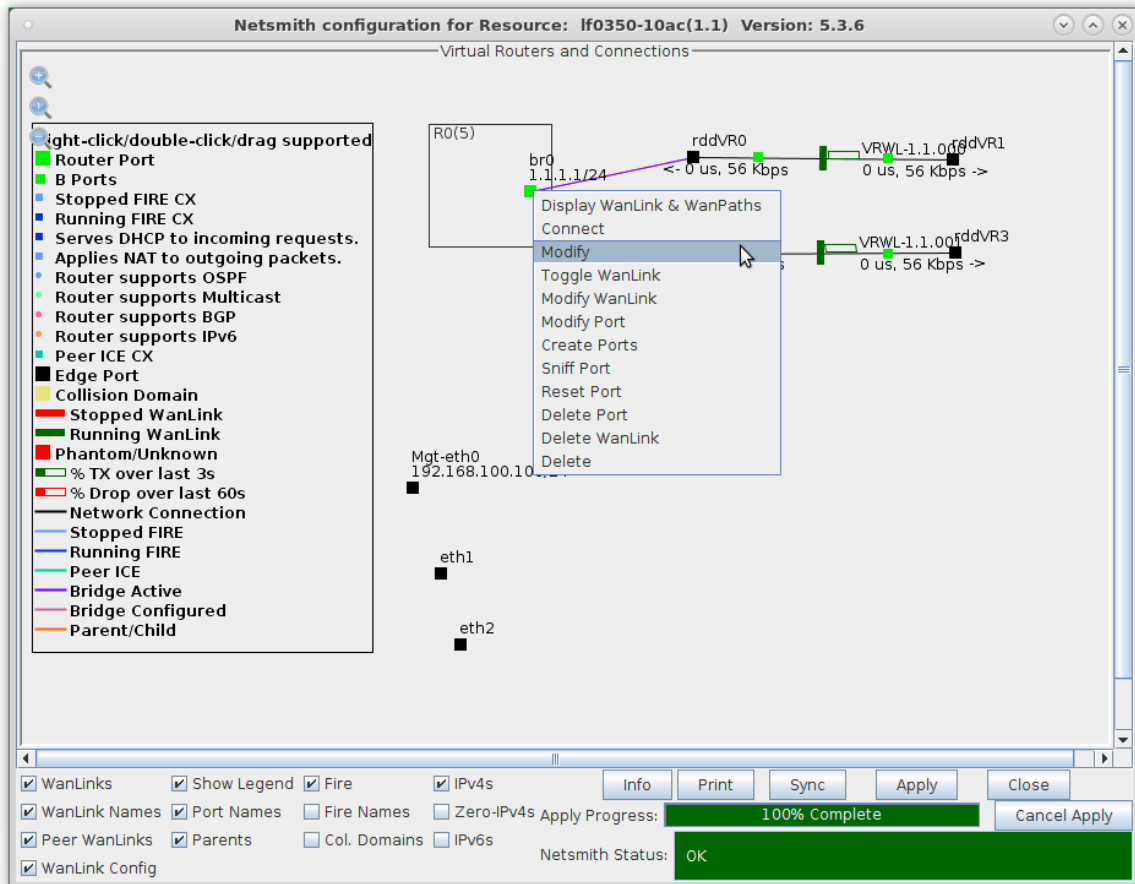
For more information see [LANforge-GUI User Guide: Ports \(Interfaces\)](#)

4. Setup DHCP Server and Clients.

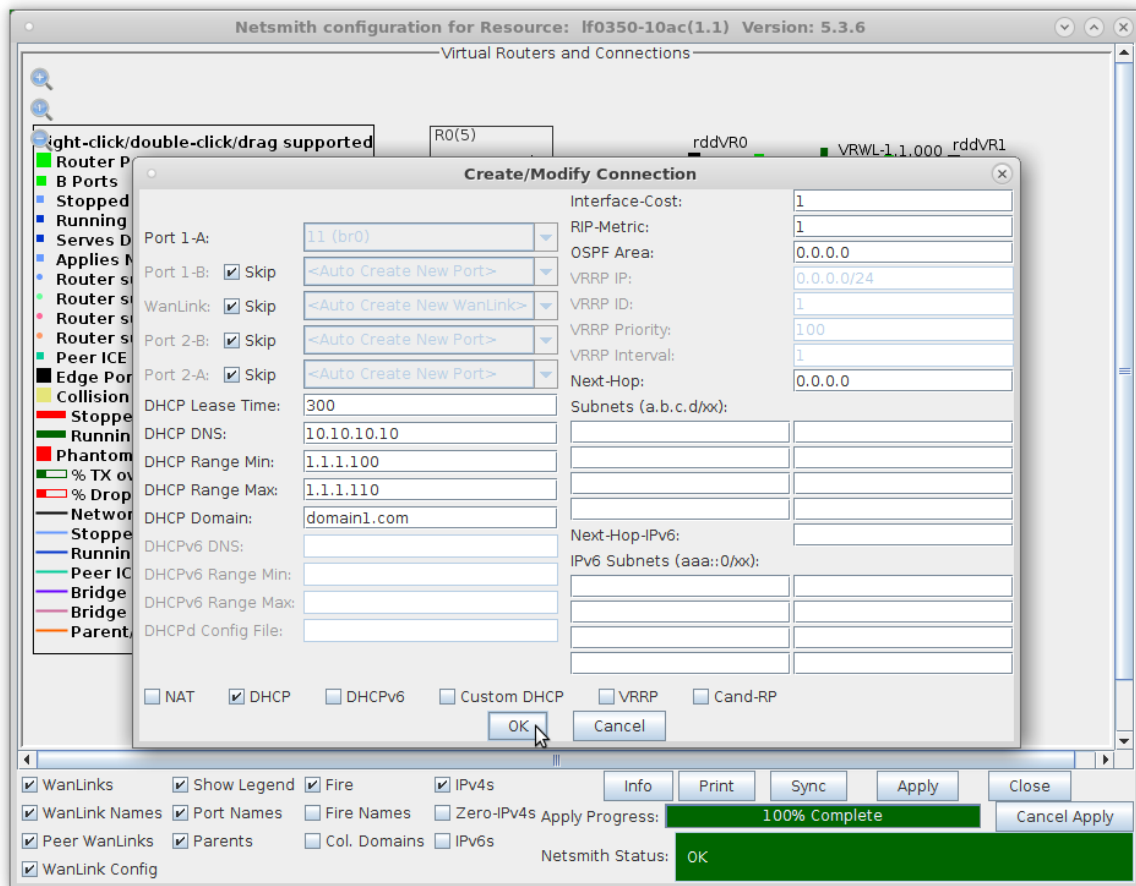
A. Drag the bridge port into the virtual router.



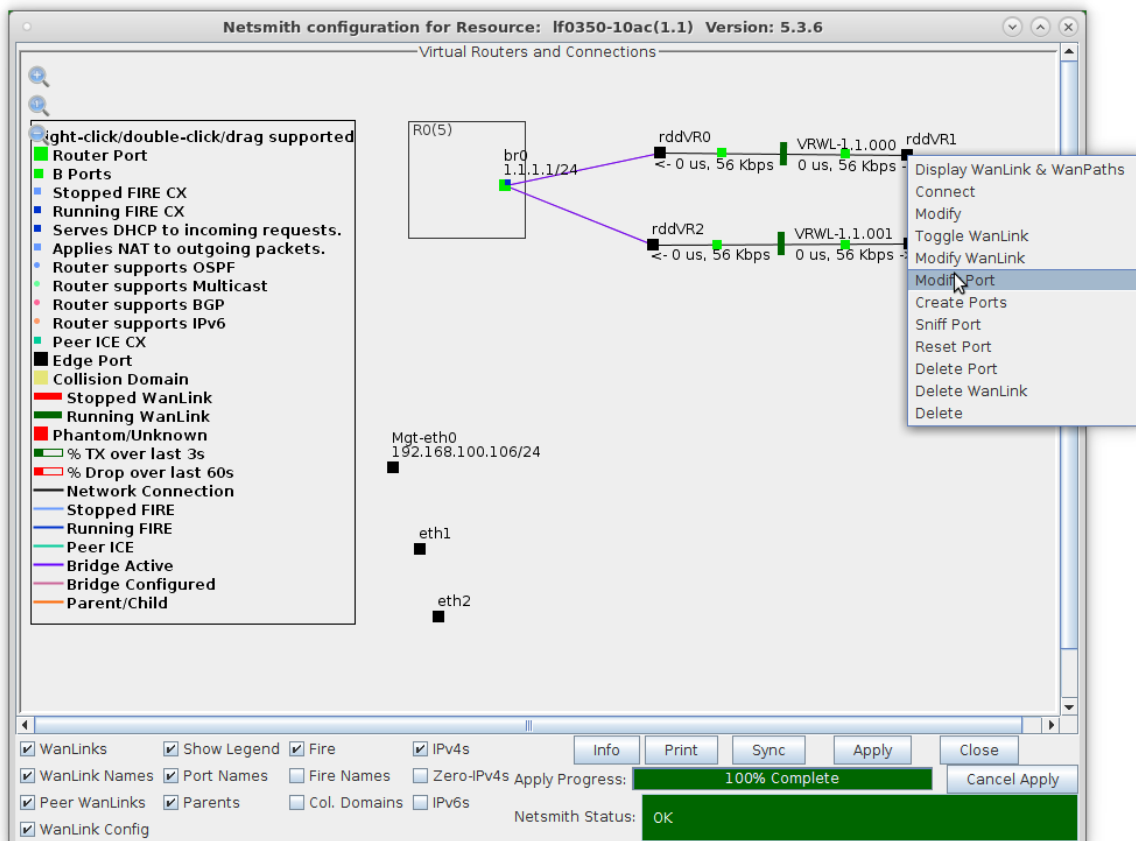
B. Right-click the bridge port and select **Modify**



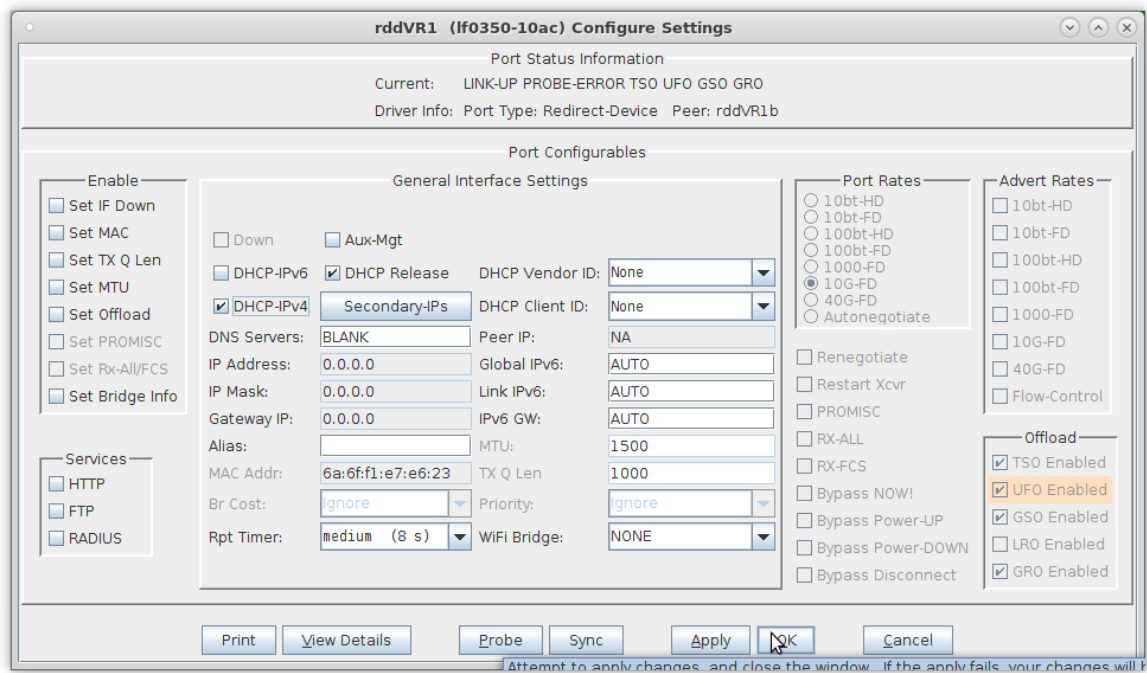
- C. Select the 'DHCP' checkbox at the bottom of the window and enter in your desired DHCP Server configuration, then click **OK**



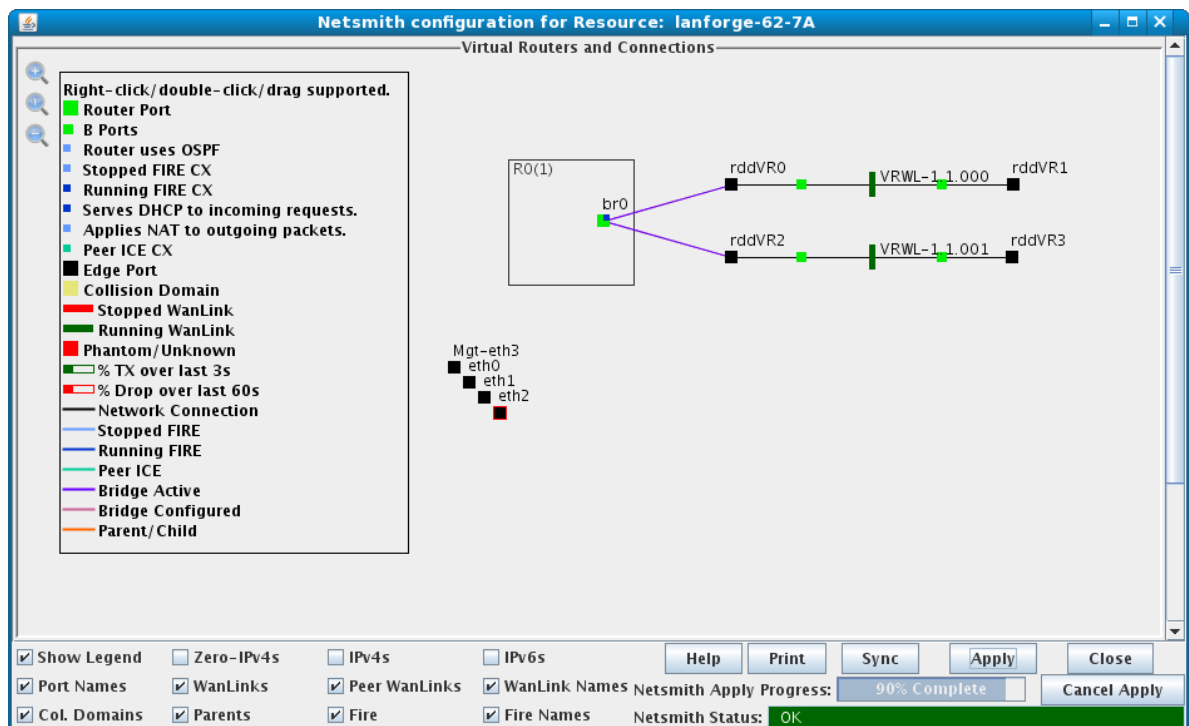
- D. Right-click interface rddVR1 and select **Modify Port**



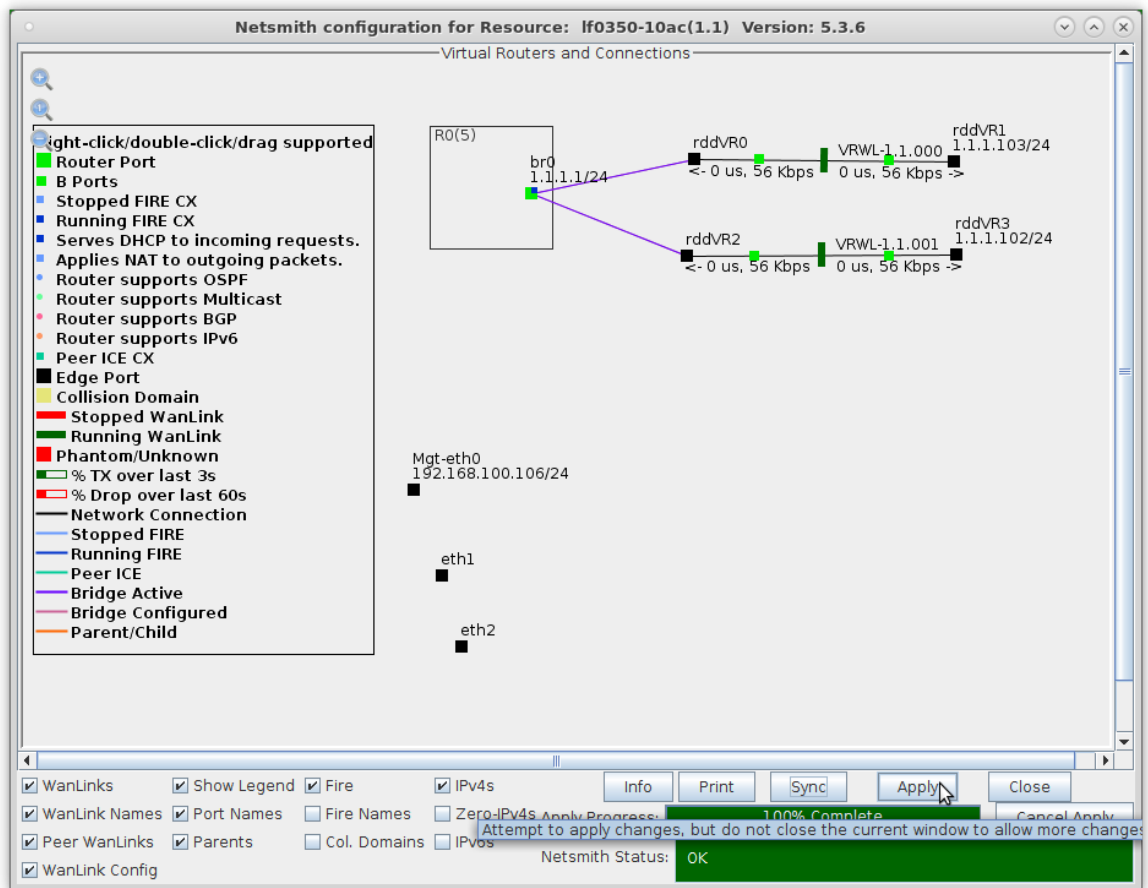
E. Select the 'DHCP' checkbox to make this interface a DHCP client, then click **OK**



F. Repeat for interface rddVR3, then click Netsmith **Apply**



G. After the Netsmith apply, DHCP clients will acquire IP addresses from the DHCP server

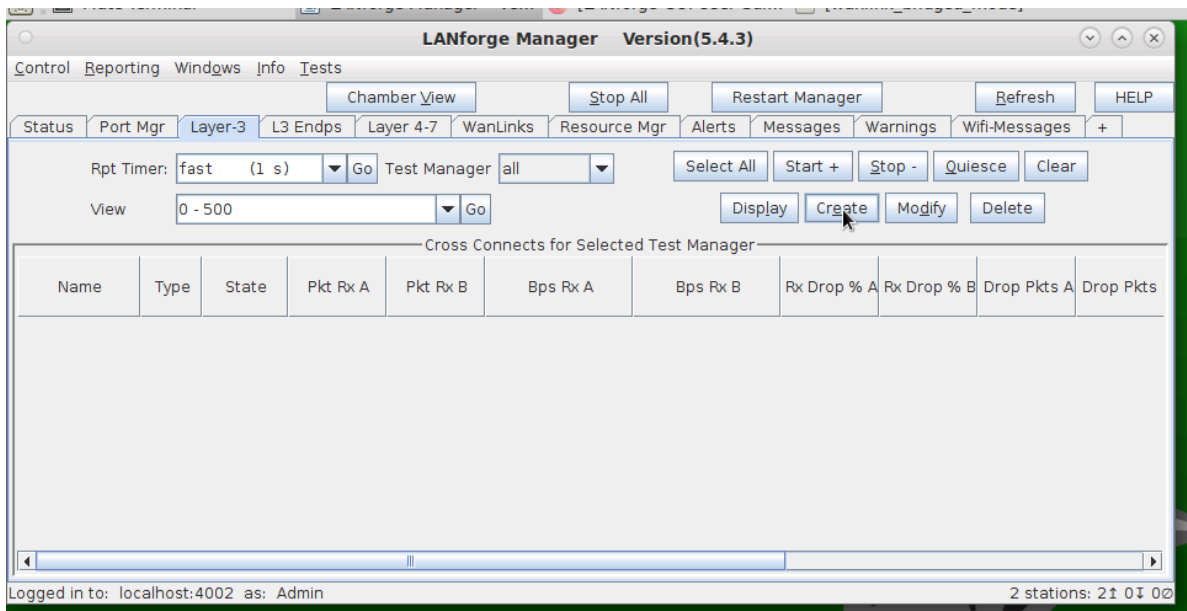


A. Select the 'IPv4s' checkbox at the bottom of the Netsmith window to see the IP addresses of the DHCP clients

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

5. Create a Layer-3 Connection.

A. Go to the **Layer-3** tab and click **Create**



B. The RDD-FIRE connection for this example will use interfaces rddVR1 and rddVR3.

RDD-FIRE - Create/Modify Cross Connect

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

1 Cross-Connect

CX Name: RDD-FIRE
CX Type: LANforge / UDP

Resource: 1 (lf0350-10ac) Endpoint B: 1 (lf0350-10ac)
Port: 5 (rddVR1) Endpoint B: 9 (rddVR3)
Min Tx Rate: 28 Kbps
Max Tx Rate: Same
Min PDU Size: UDP Pld (1,472 B) Endpoint B: UDP Pld (1,472 B)
Max PDU Size: Same
IP ToS: Best Effort (0) Endpoint B: Best Effort (0)
Pkts To Send: Infinite

2 Cross-Connect

Report Timer: fast (1 s)

Endpoint A: Pld Pattern: increasing, Min IP Port: AUTO, Max IP Port: Same, Min Duration: Forever, Max Duration: Same, Min Reconn: 0 (0 ms), Max Reconn: Same, Multi-Conn: Normal (0)
Endpoint B: Pld Pattern: increasing, Min IP Port: AUTO, Max IP Port: Same, Min Duration: Forever, Max Duration: Same, Min Reconn: 0 (0 ms), Max Reconn: Same, Multi-Conn: Normal (0)

Buttons: Script, Thresholds

3 Cross-Connect

Test Manager: default_tm
Quiesce: 3 (3 sec)

IP Addr: AUTO Endpoint B: AUTO

☐ Replay File ☐ Loop ☐ Dest Mac

Filename:
Dest MAC:

4 Cross-Connect

Endpoint A: Snd Buff Size: OS Default, Rcv Buff Size: OS Default, Send Bad FCS: zero (0%), Src MAC: 00:00:00:00:00:00, Proxy Addr: 0.0.0.0, Proxy Port: 0, Socket Priority: 0
Endpoint B: Snd Buff Size: OS Default, Rcv Buff Size: OS Default, Send Bad FCS: zero (0%), Src MAC: 00:00:00:00:00:00, Proxy Addr: 0.0.0.0, Proxy Port: 0, Socket Priority: 0

☐ Use-Proxy

C. Verify the Layer-3 connection was created

LANforge Manager Version(5.3.6)

Control Reporting Tear-Off Info Plugins

Buttons: 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: fast (1 s) Go Test Manager: all Select All Start Stop Quiesce Clear

View: 0 - 500 Display Create Modify Delete

Cross Connects for Selected Test Manager

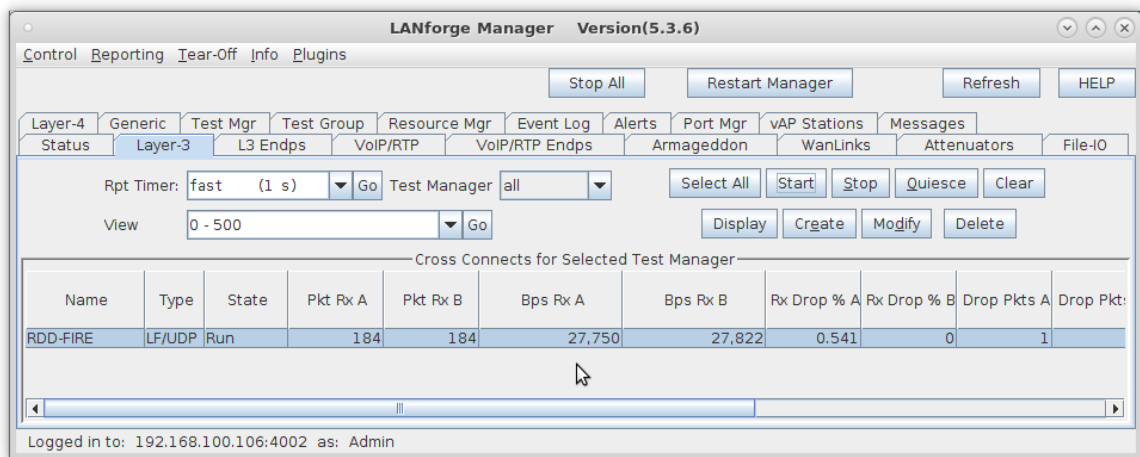
Name	Type	State	Pkt Rx A	Pkt Rx B	Bps Rx A	Bps Rx B	Rx Drop % A	Rx Drop % B	Drop Pkts A	Drop Pkt:
RDD-FIRE	LF/UDP	Stopped	0	0	0	0	0	0	0	

Logged in to: 192.168.100.106:4002 as: Admin

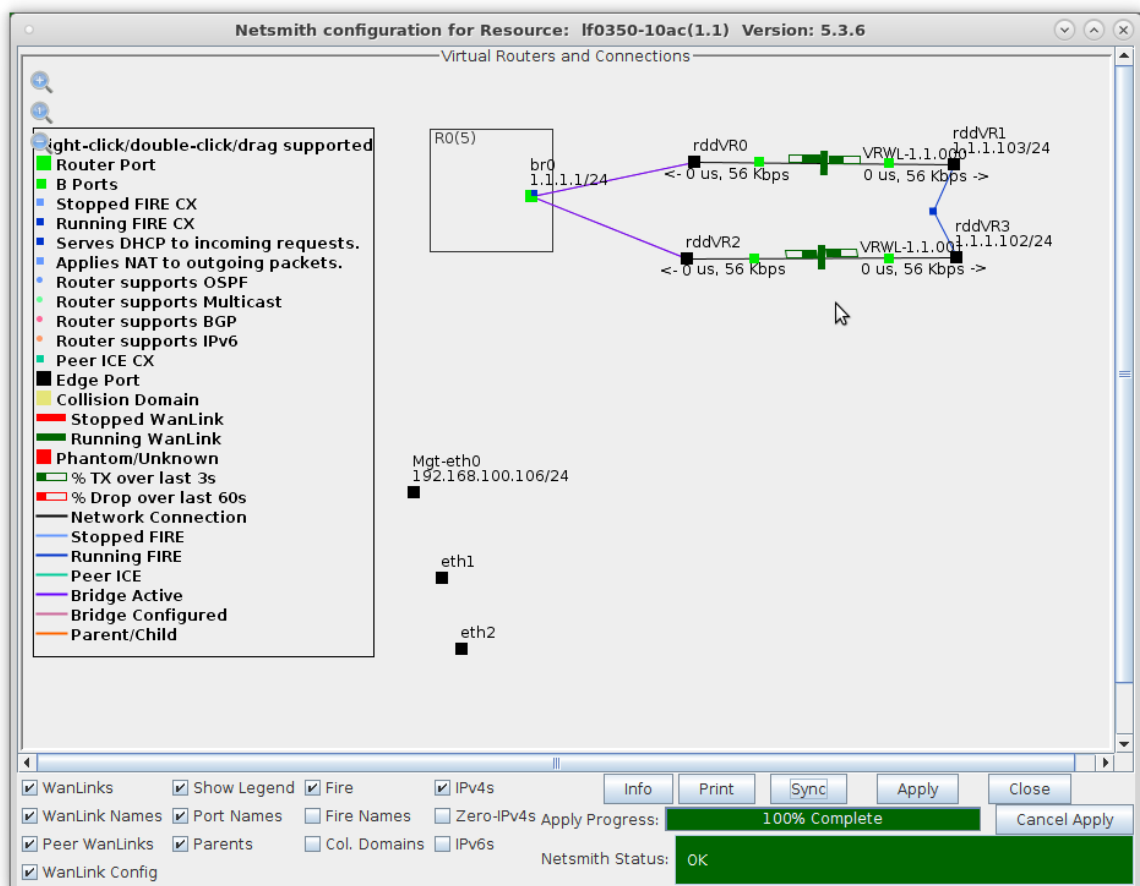
For more information see [LANforge-GUI User Guide: Layer-3 Cross Connects \(FIRE\)](#)

6. Run LANforge-FIRE to yourself through LANforge-ICE!

A. Select the Layer-3 Cross Connect and click **Start**



B. Go to the **Status** tab and click **Netsmith** to view the graphical representation of the setup



For more information see [LANforge-GUI User Guide](#)

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