

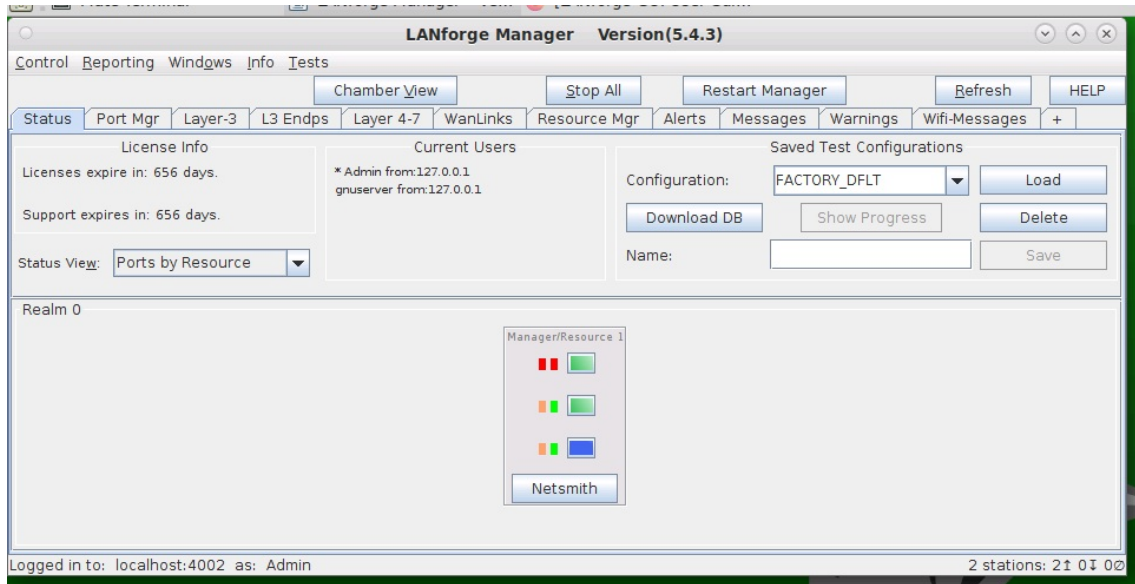
## Routed Mode WanLinks with Virtual Routers

**Goal:** Setup a Routed Mode WanLink between two Virtual Routers.

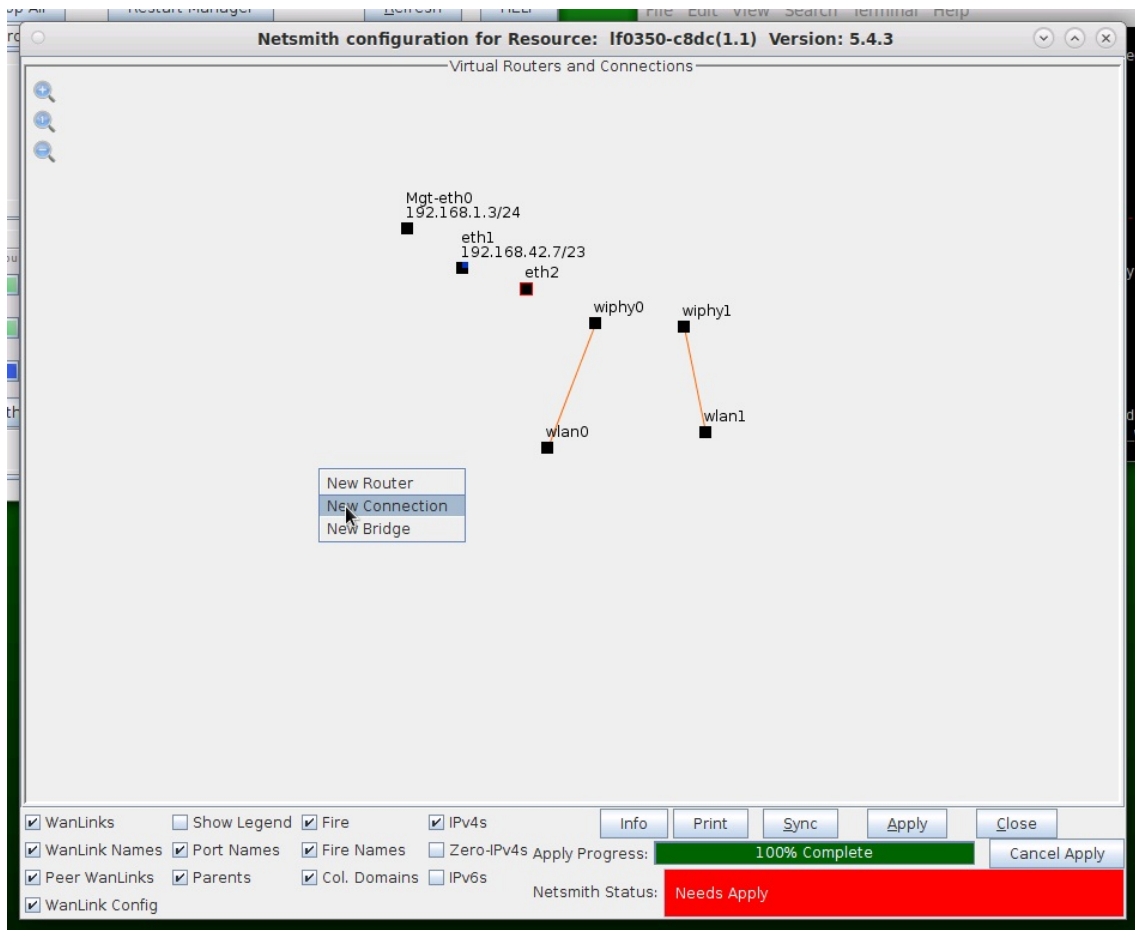
In this test scenario, LANforge-ICE is used to simulate a routed network where incoming traffic on one port is sent through one Virtual Router then through a WanLink, then through a second Virtual Router and then finally out to a port on a different network.

1. Setup a Netsmith Connection.

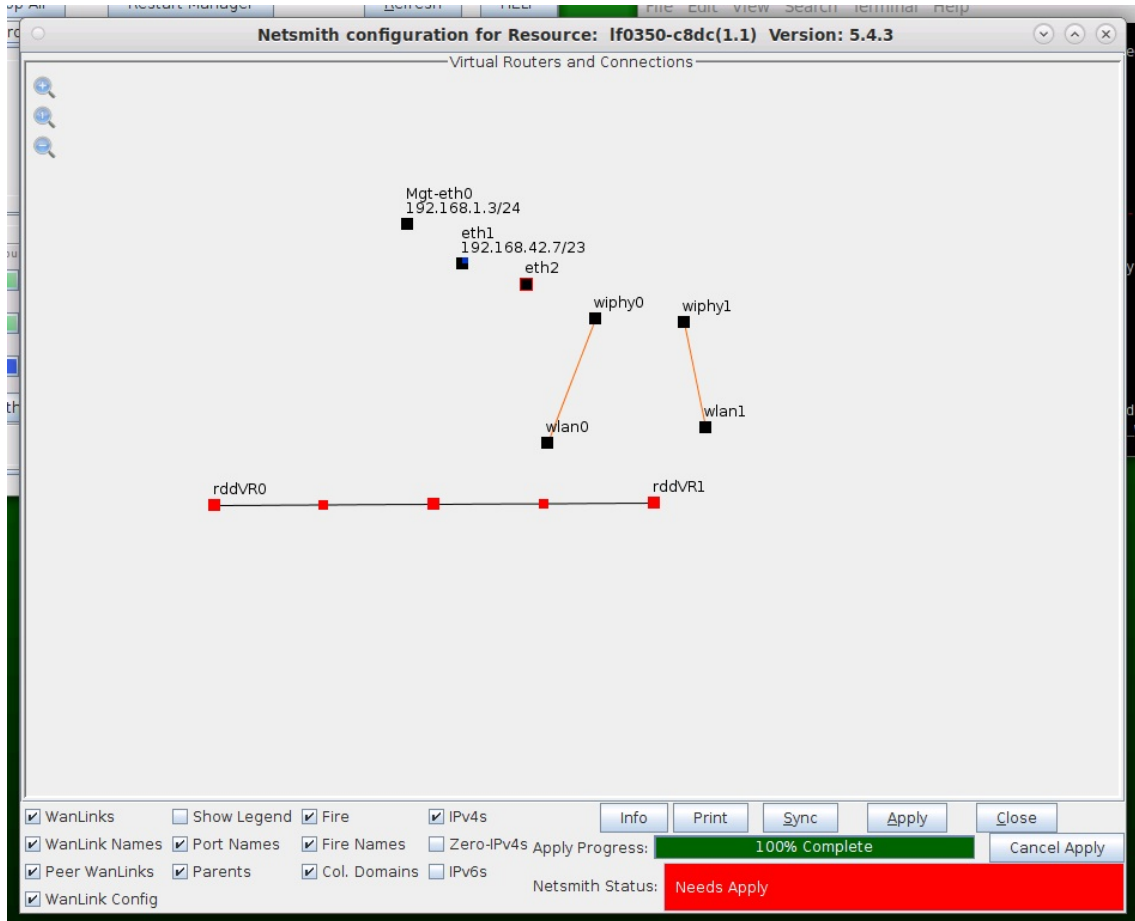
A. Go to the **Status** tab and click **Netsmith**



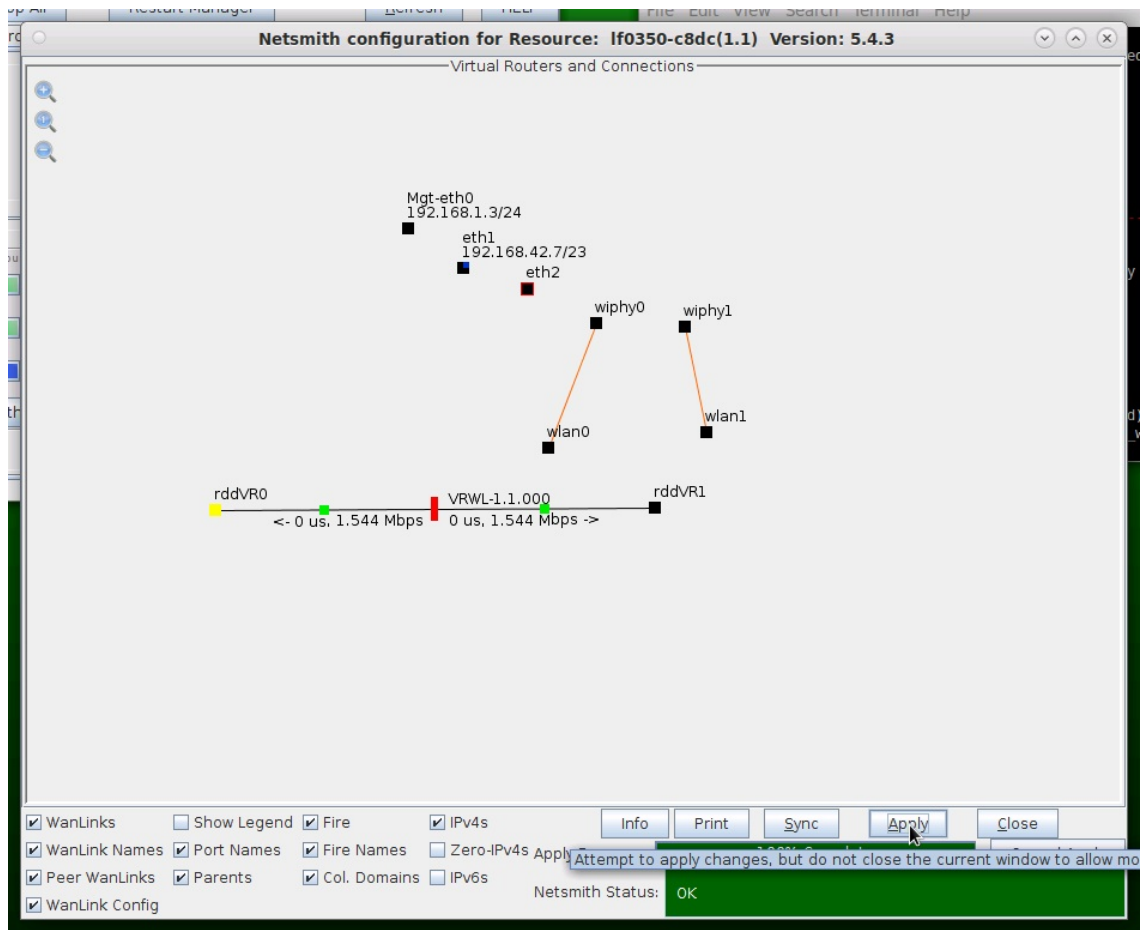
B. Right-click in the Netsmith window and select **New Connection**



C. Accept defaults, Auto Create everything then click **OK**



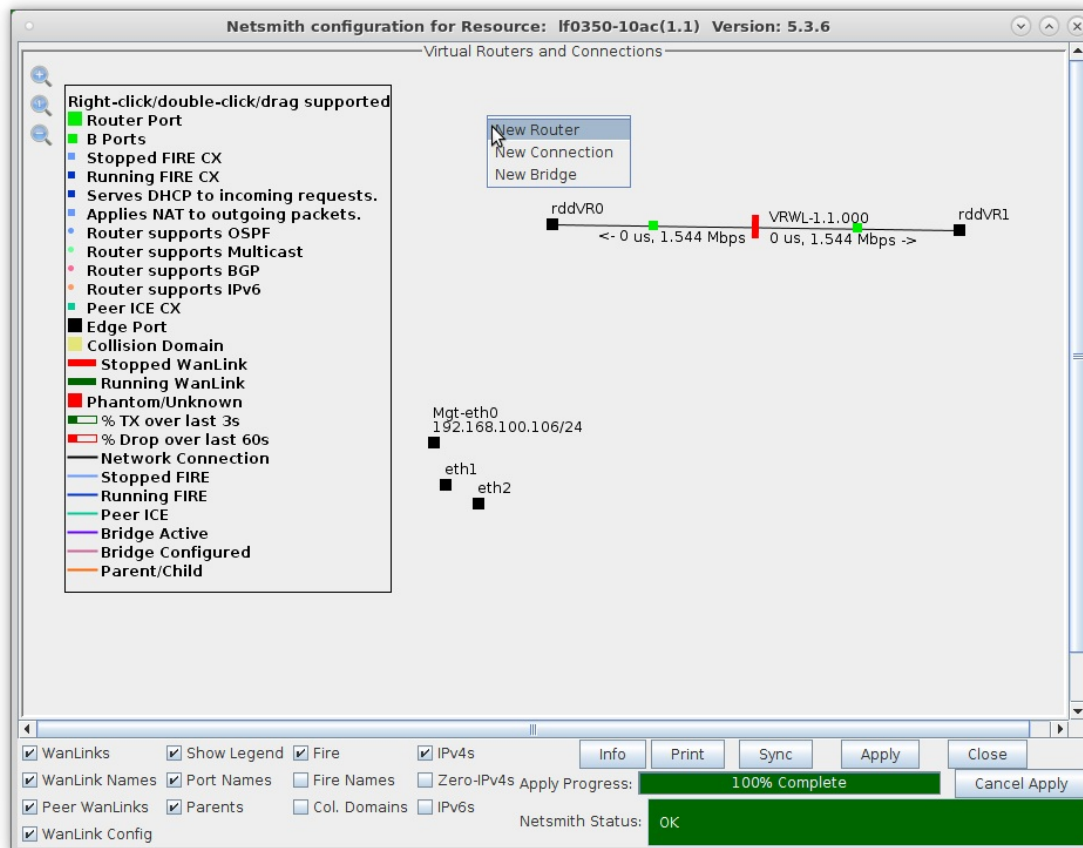
D. Click **Apply** in the Netsmith window to create the connection



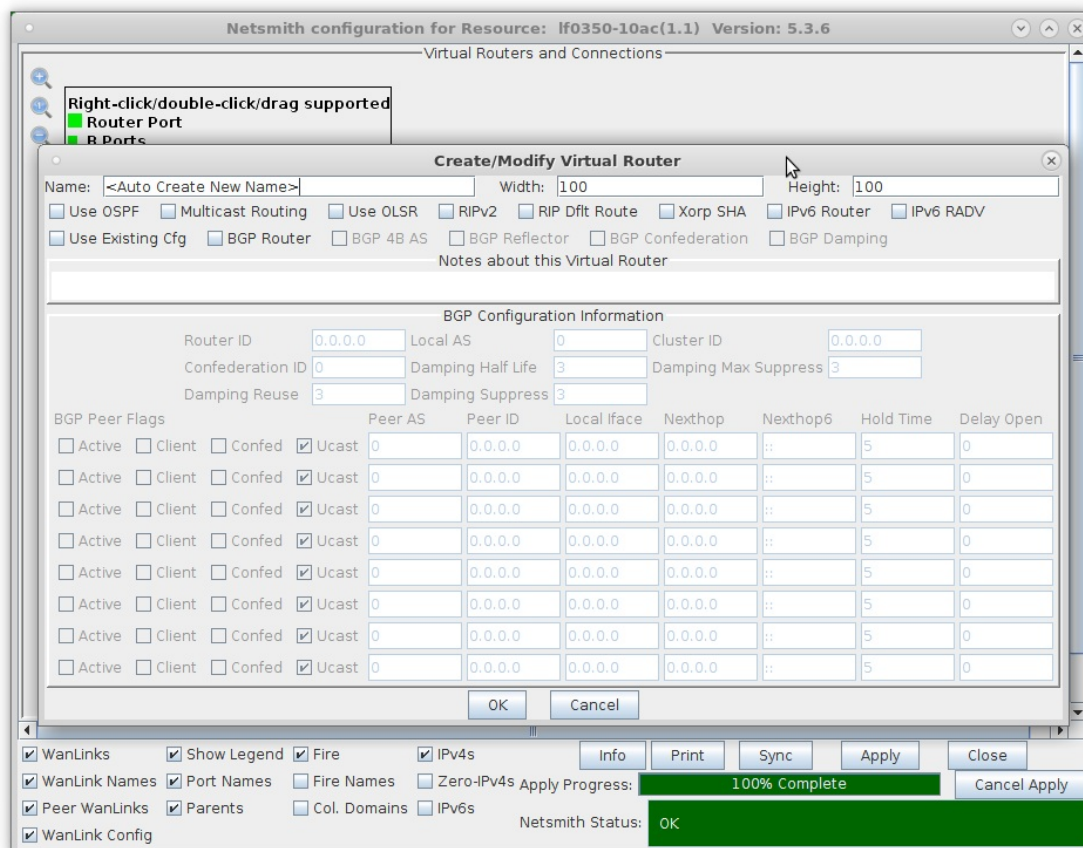
For more information see [LANforge-GUI User Guide: Netsmith](#)

2. Setup two Virtual Routers.

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

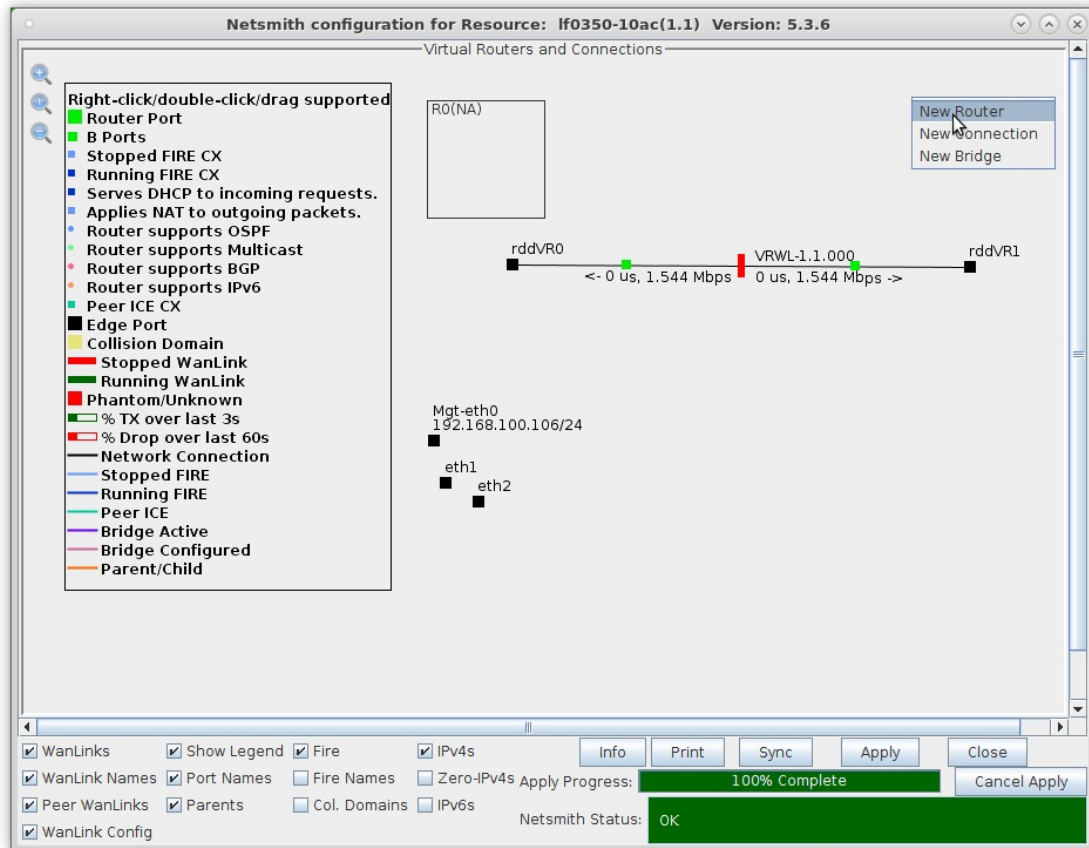


B. Accept defaults, or change the name, graphical size and notes about the Virtual Router.



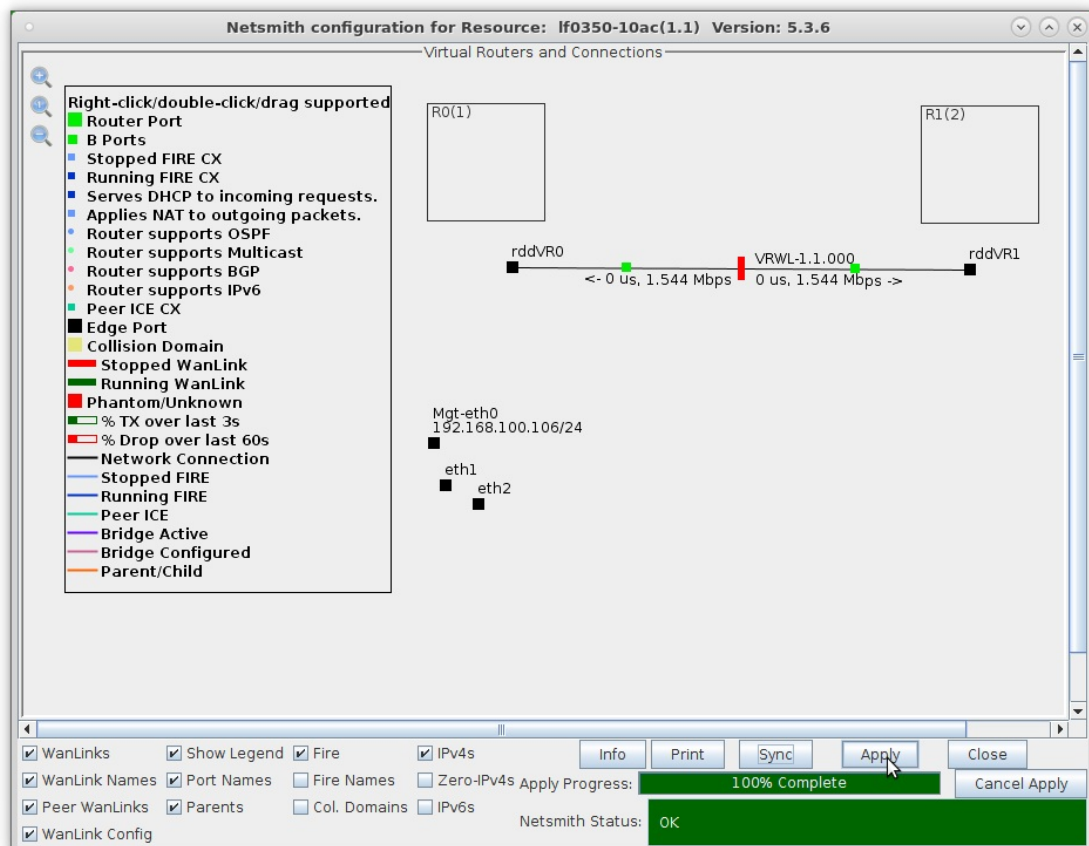
A. Click **OK** when done

C. Click the **Apply** button and repeat for the second Virtual Router



A. **NOTE:** After making any changes to the Netsmith window, you must click **Apply** or your changes will NOT be implemented and could be lost.

D. Click the **Apply** button followed by the **Sync** button

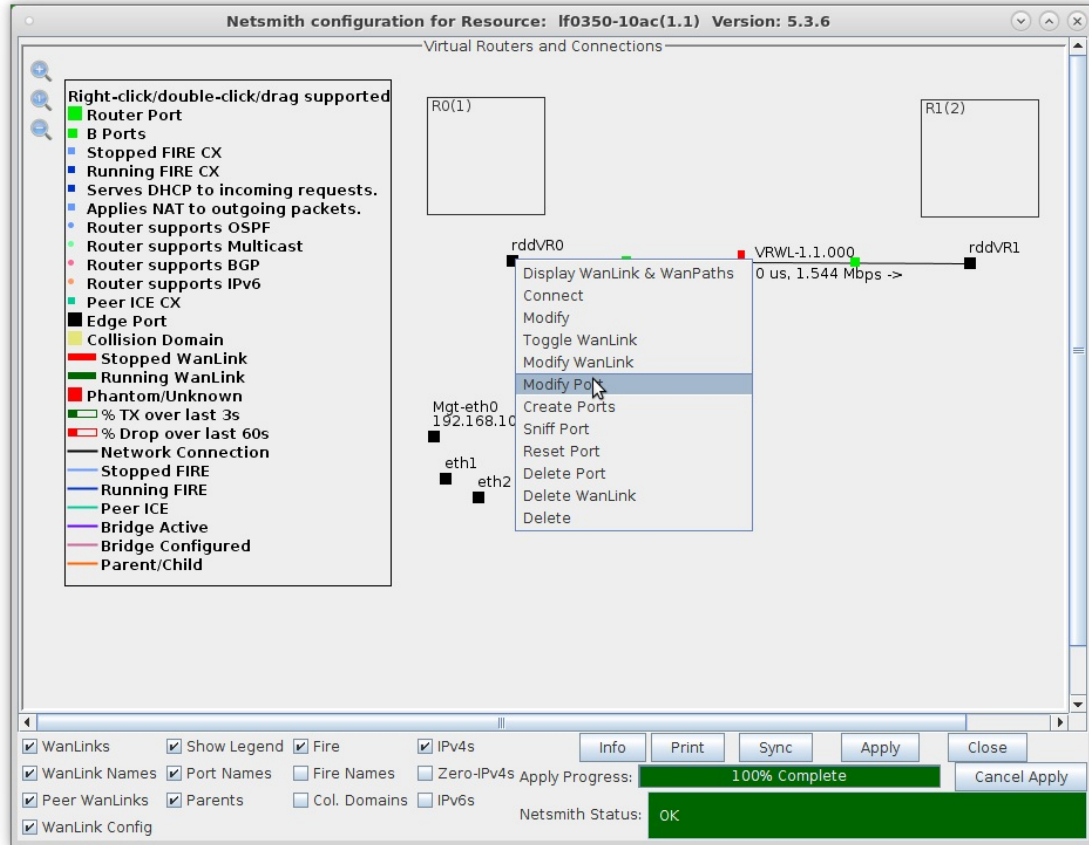


A. **NOTE:** Clicking **Sync** makes sure any changes are synchronized with the current database.

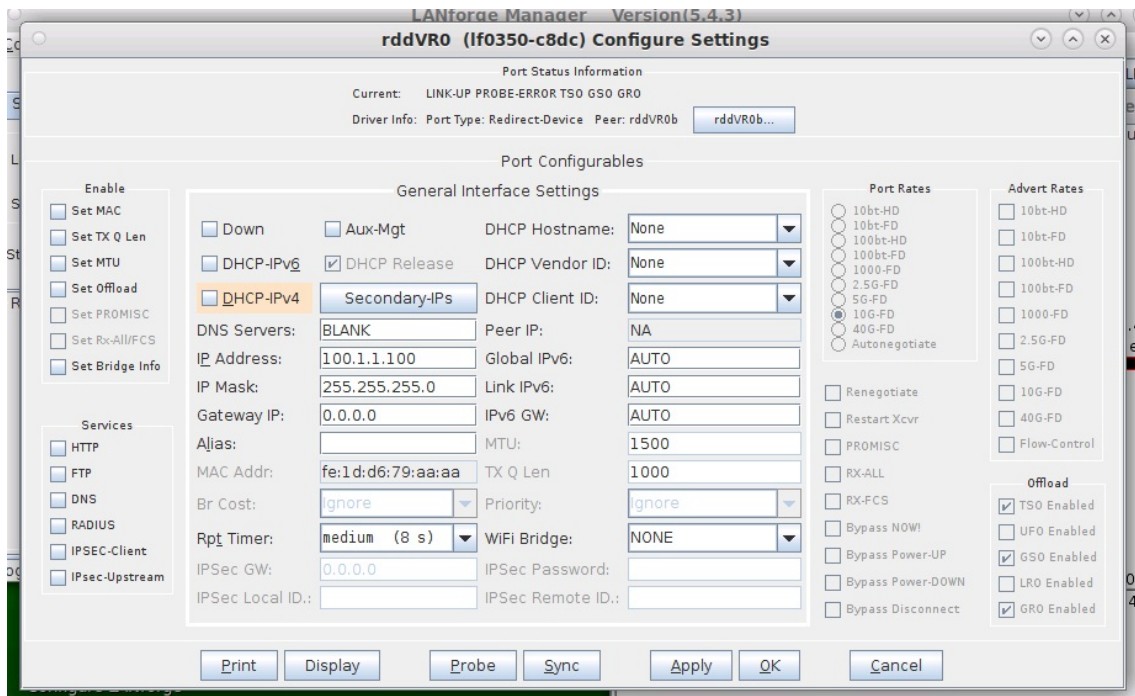
B. Also, note the Netsmith Apply Progress bar displayed at the bottom of the Netsmith window.

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

3. Configure the ports on the ends of the WanLink.
  - A. Right-click port rddVR0 and select **Modify Port**

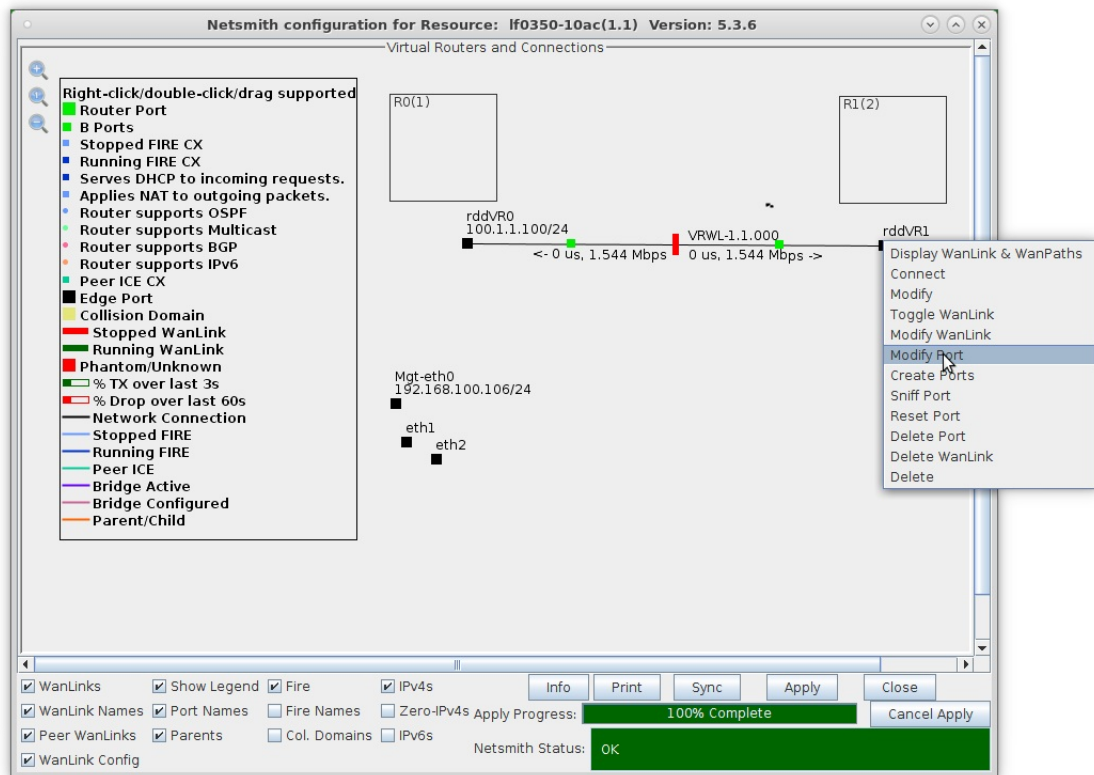


- B. Assign an IP address and Network Mask.

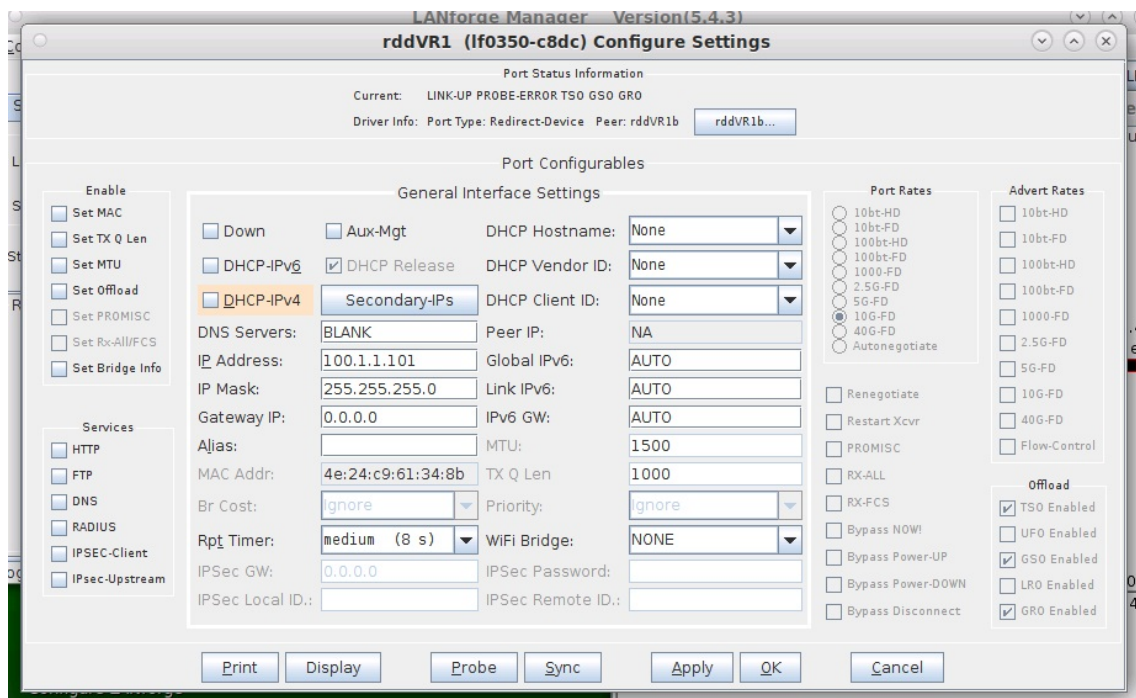


- A. This example uses 10.1.1.100 and 255.255.255.0.

C. Right-click port rddVR1 and select **Modify Port**



D. Assign an IP address and Network Mask.

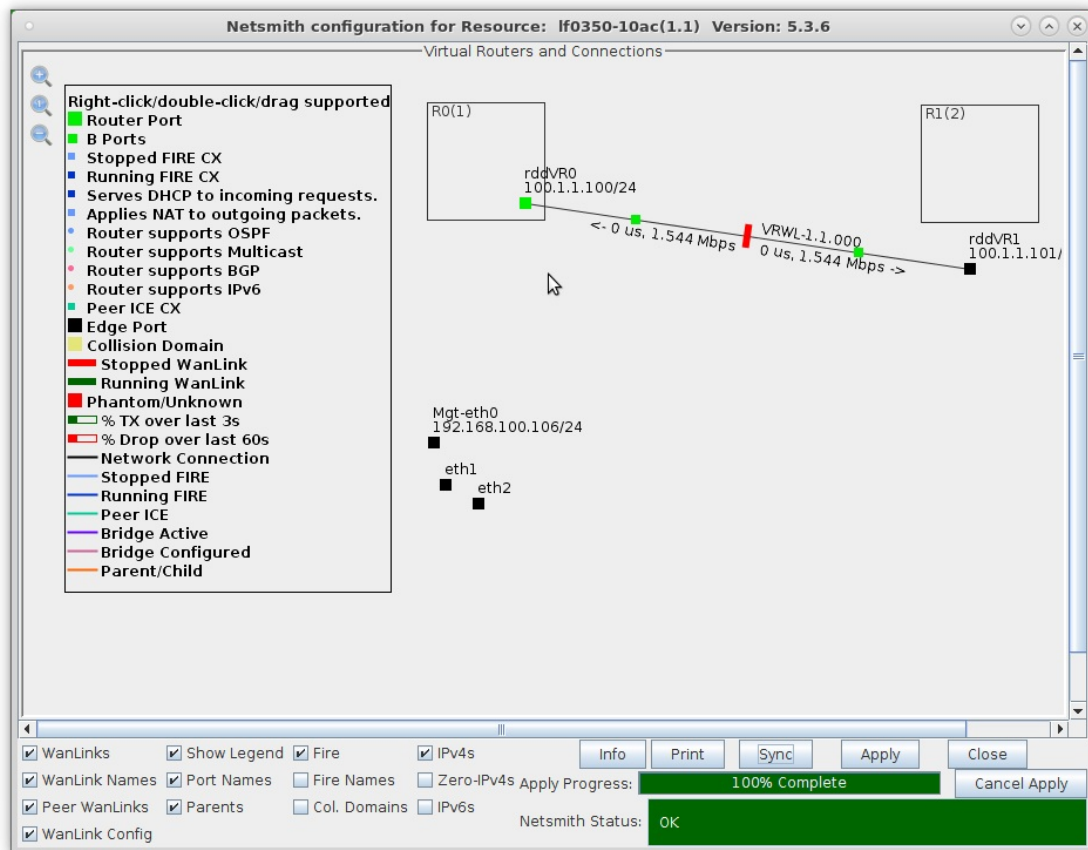


A. This example uses 10.1.1.101 and 255.255.255.0.

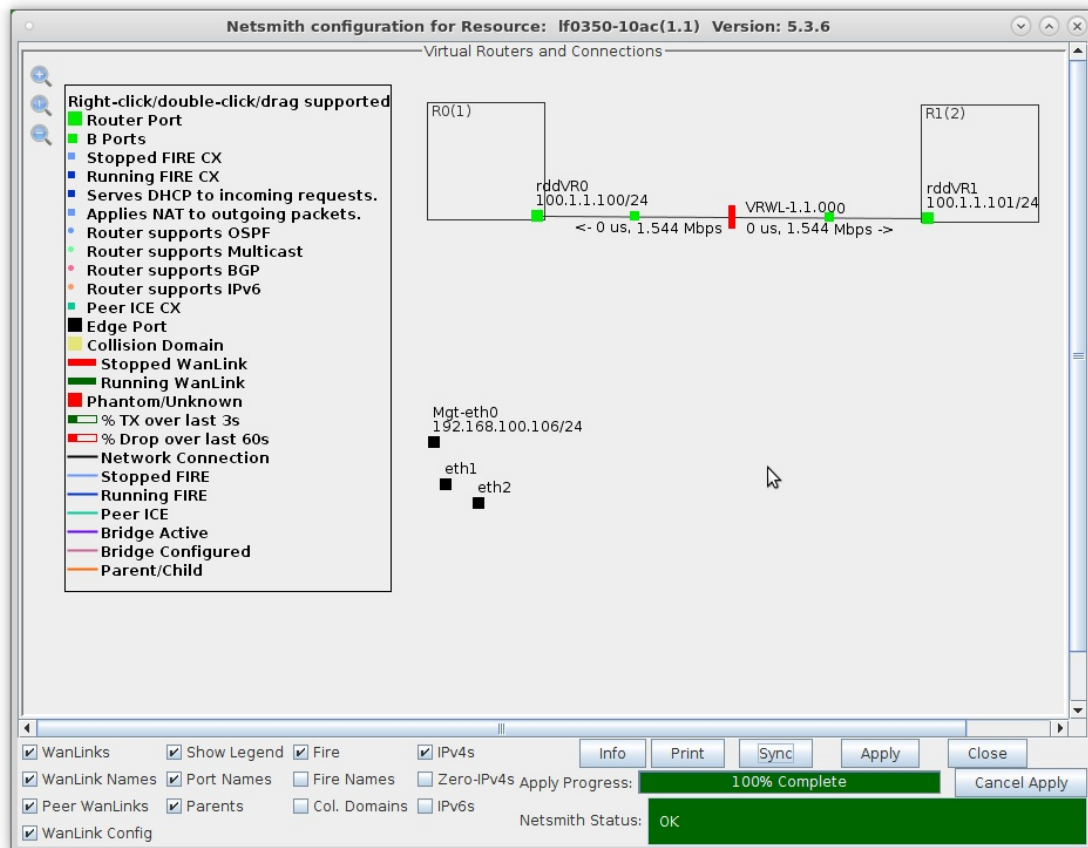
For more information see [LANforge-GUI User Guide: NetSmith](#)

4. Drag the ends of the WanLink into the Virtual Routers.

A. Left-click and drag rddVR0 into Router R0(1)

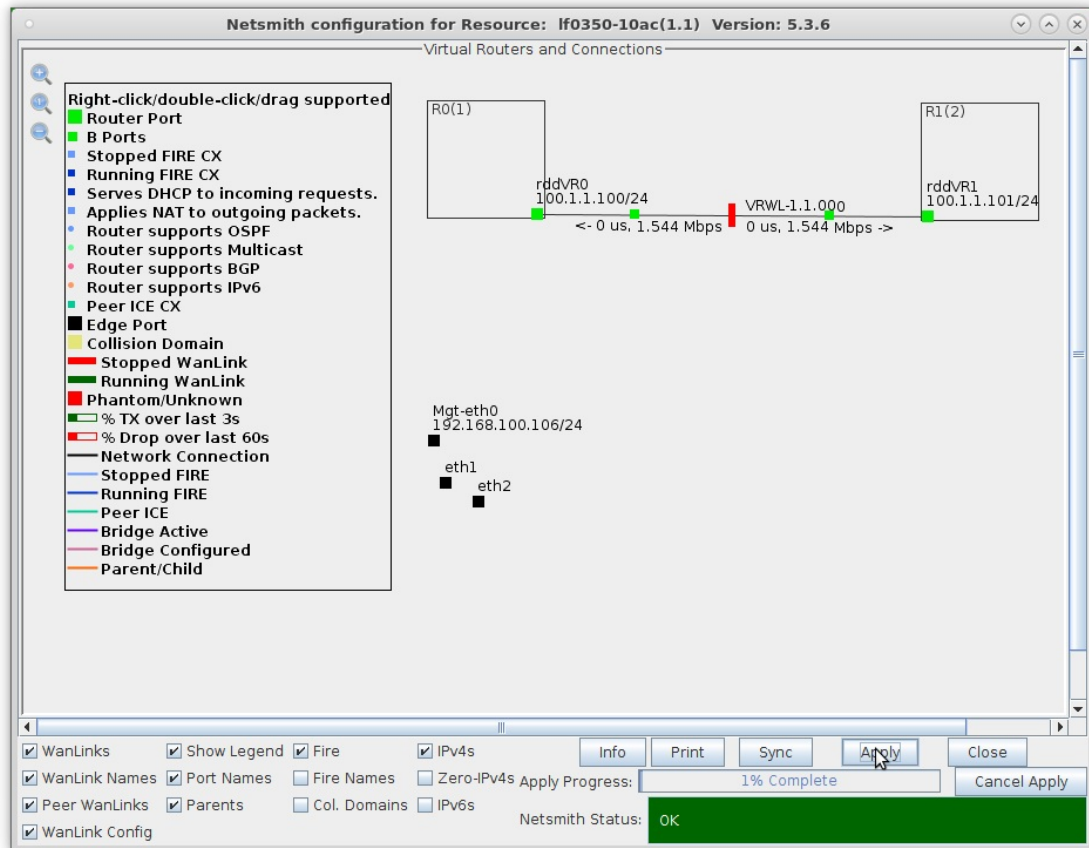


B. Left-click and drag rddVR1 into Router R1(2)





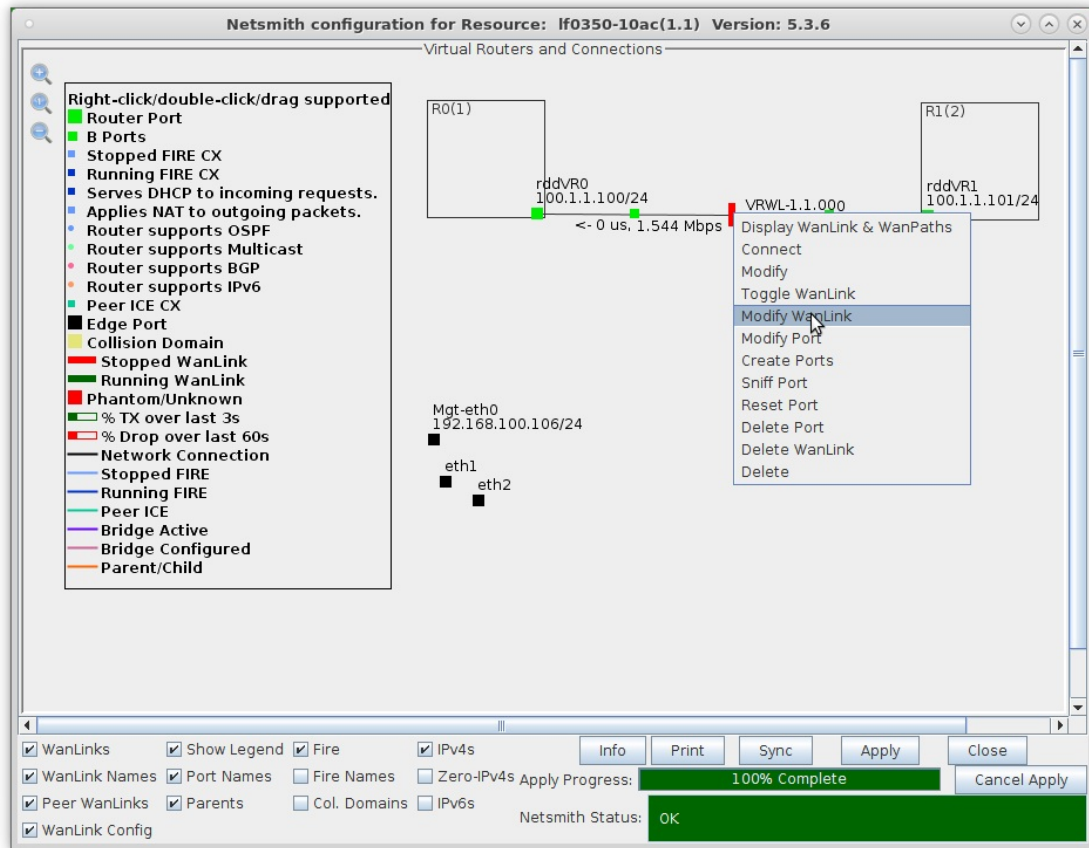
C. Click the **Apply** button at the bottom of the Netsmith window



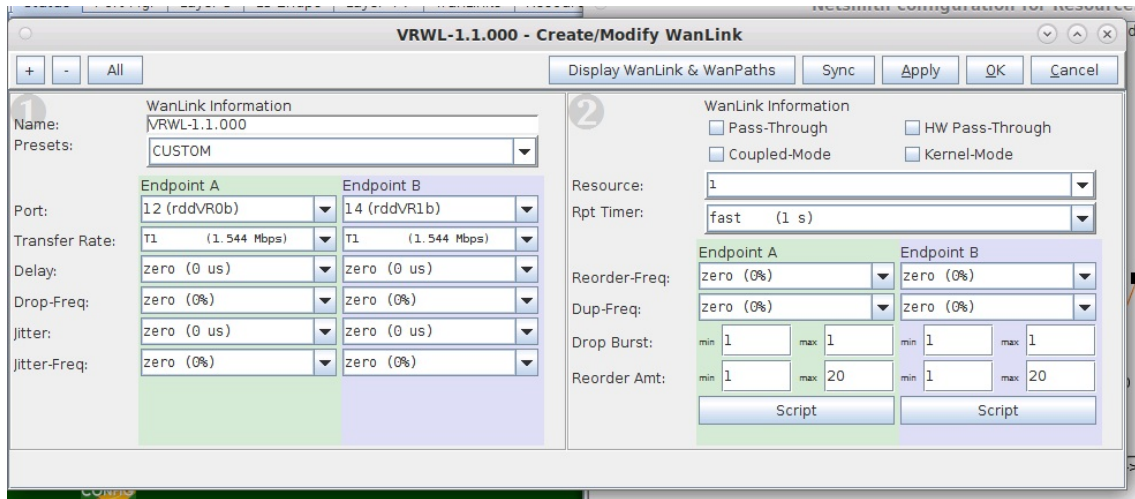
For more information see [LANforge-GUI User Guide: Netsmith](#)

5. Setup the Routed Mode WanLink characteristics.

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

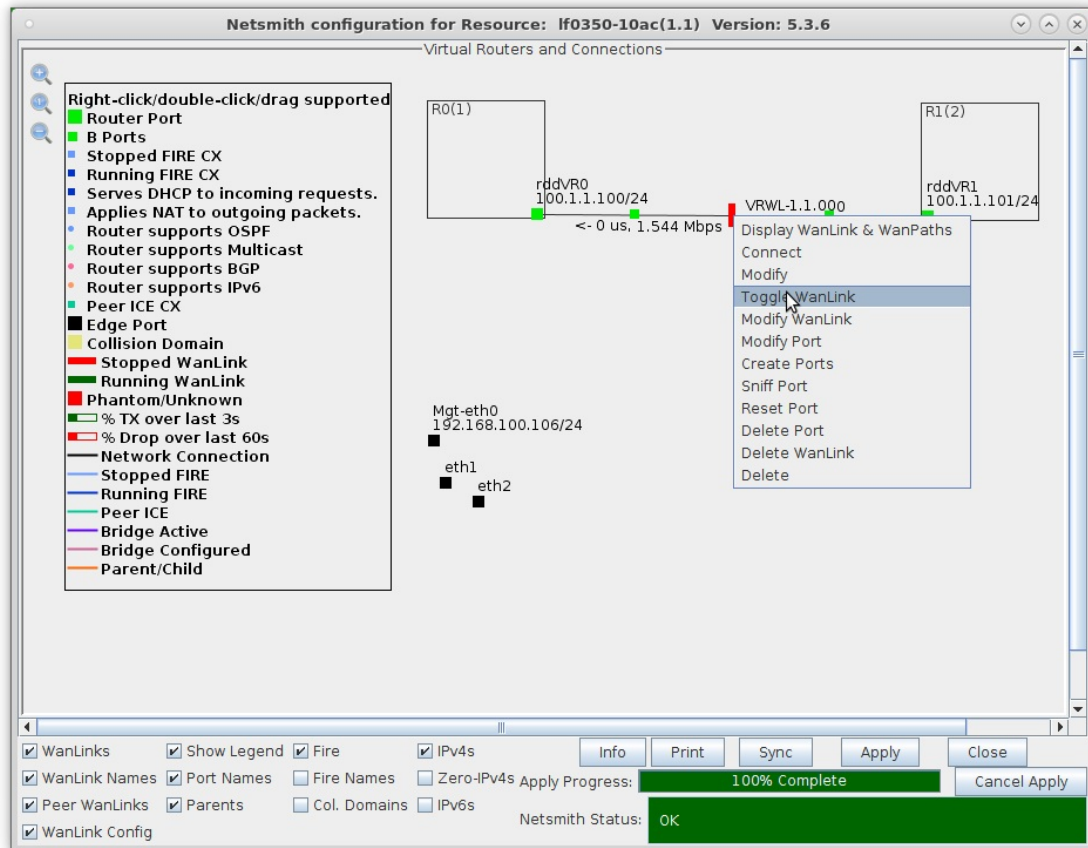


- B. Verify that the B-side ports, rddVR0b and rddVR1b are filled in.



- A. **NOTE:** Be sure to set the impairment, if any, and transfer rate.  
 B. Click **OK** when done

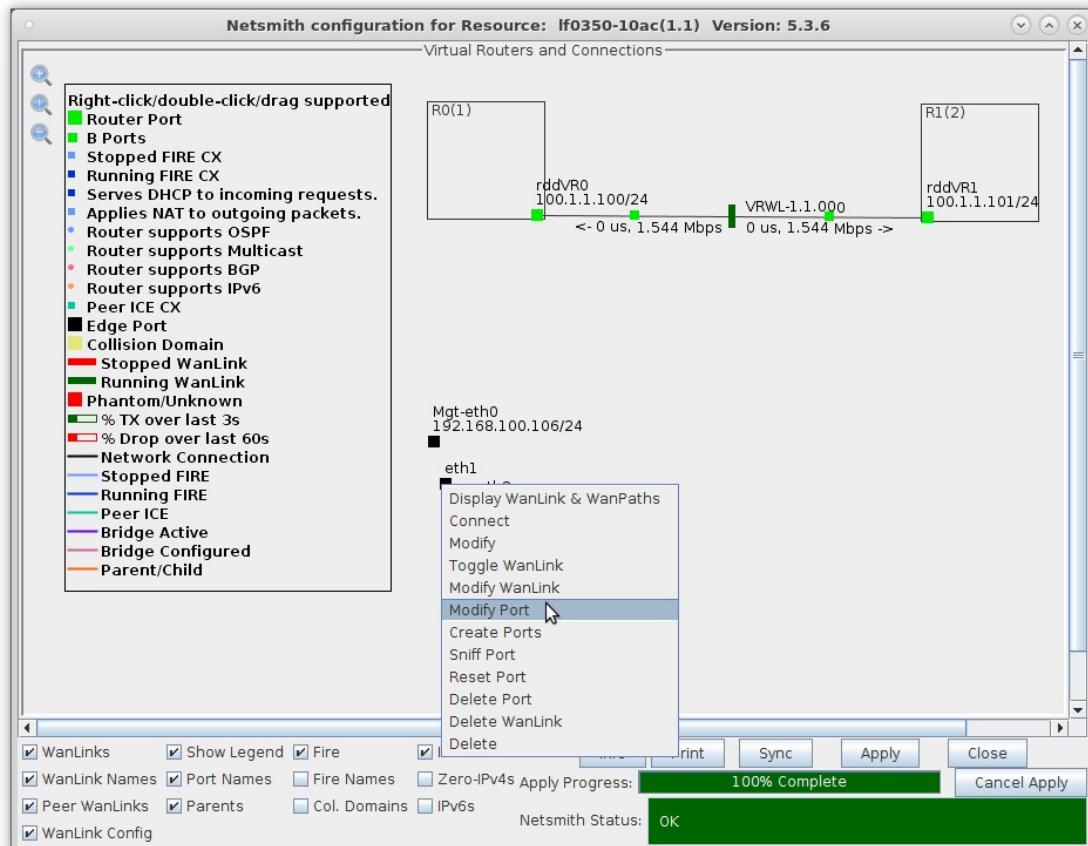
C. Right-click the WanLink and select **Toggle Wanlink** to set its status to Running (green).



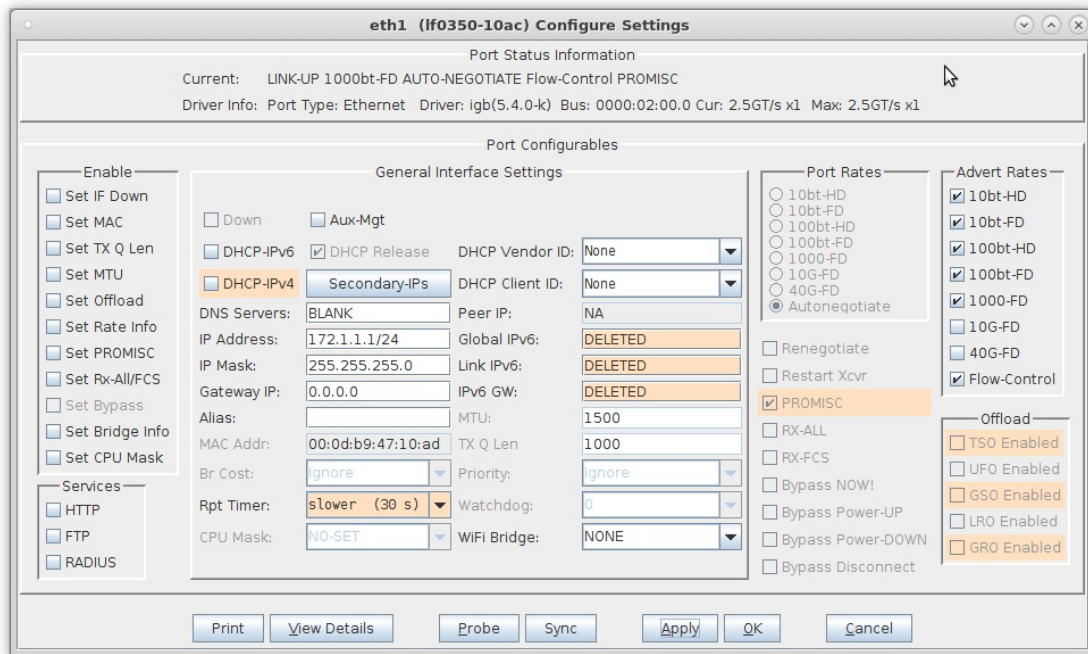
For more information see [LANforge-GUI User Guide: Netsmith](#)

6. Setup the physical ports.

A. Right-click port eth1 and select **Modify Port**

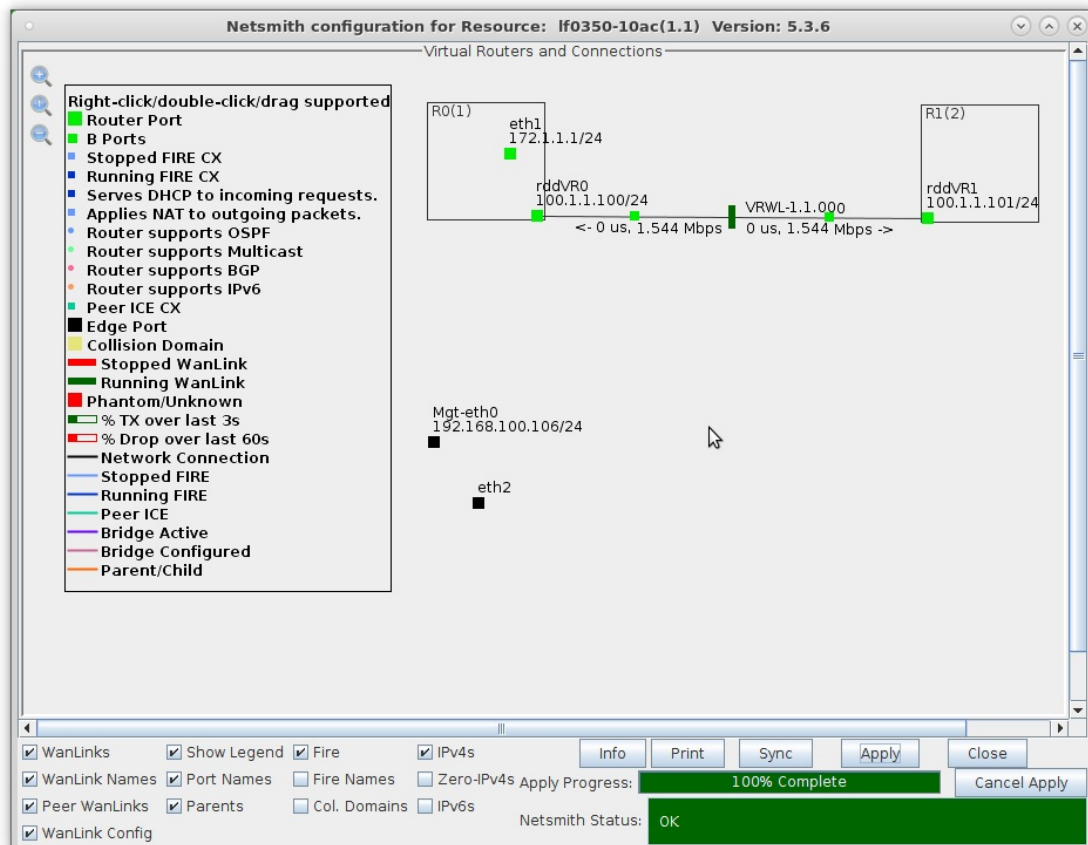


B. Assign port eth1 an IP address and Network Mask

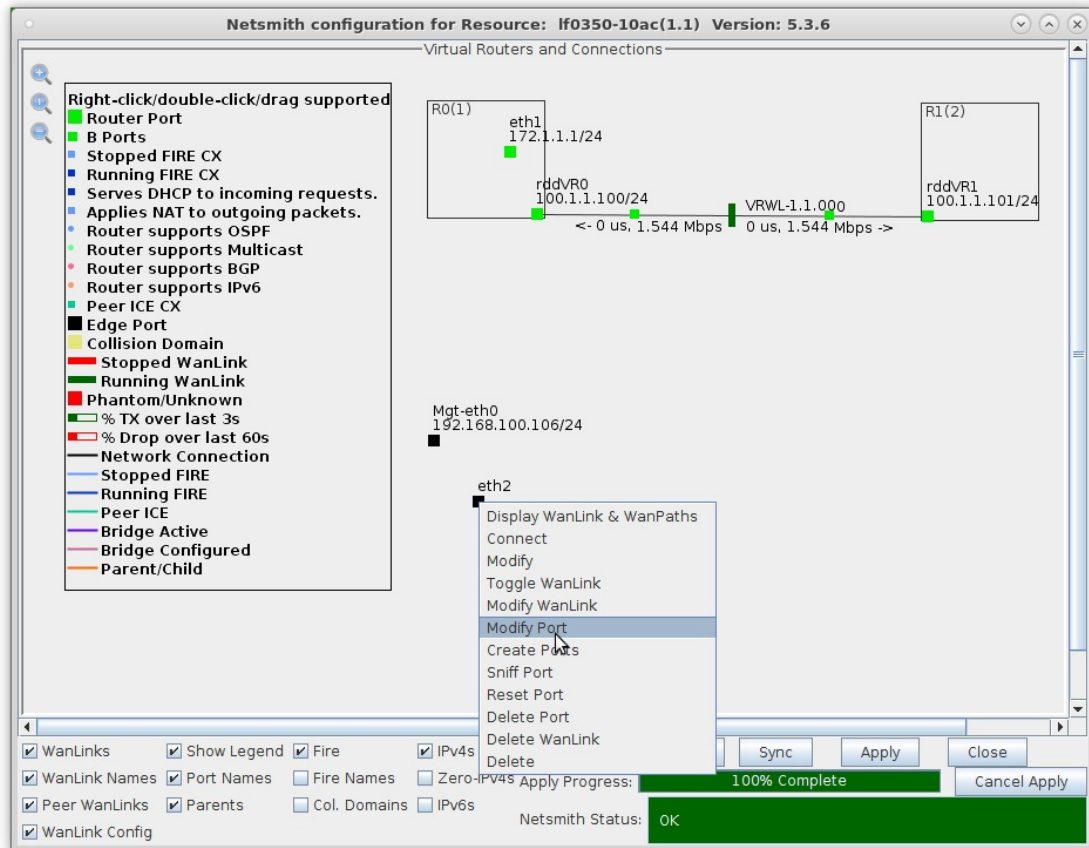


A. **NOTE:** This example uses 172.1.1.1 and 255.255.255.0

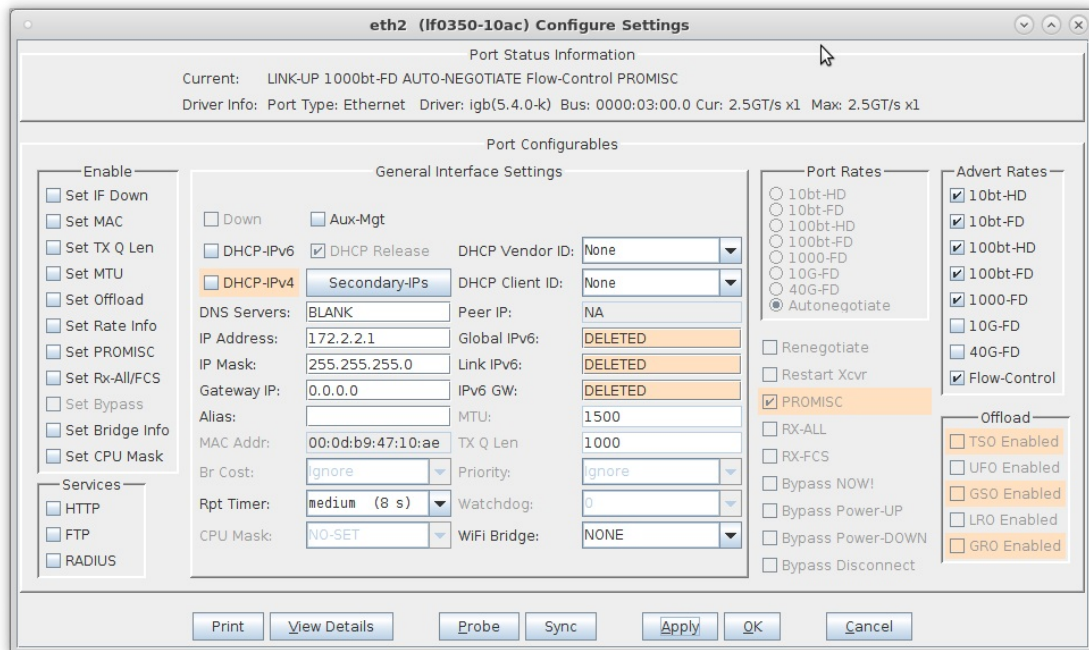
C. Drag port eth1 into Router R0(1)



D. Right-click port eth2 and select **Modify Port**



E. Assign port eth2 an IP address and Network Mask.

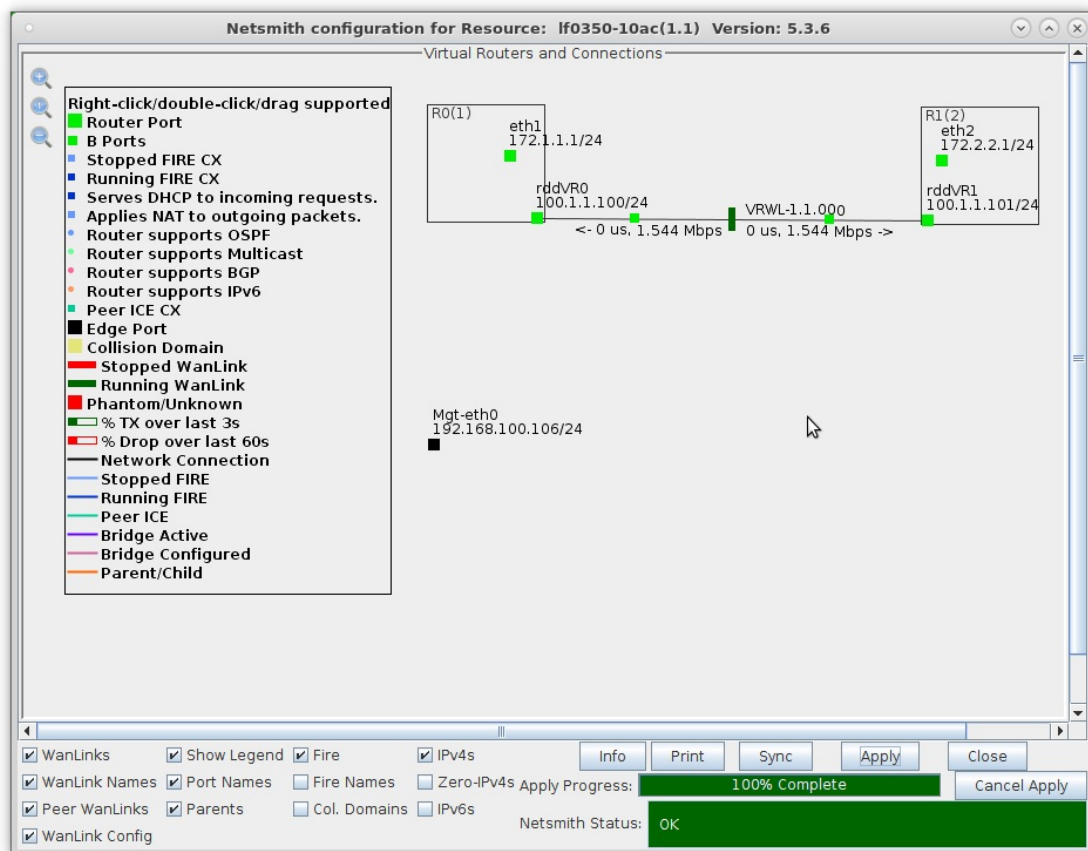


A. **NOTE:** This example uses 172.2.2.1 and 255.255.255.0

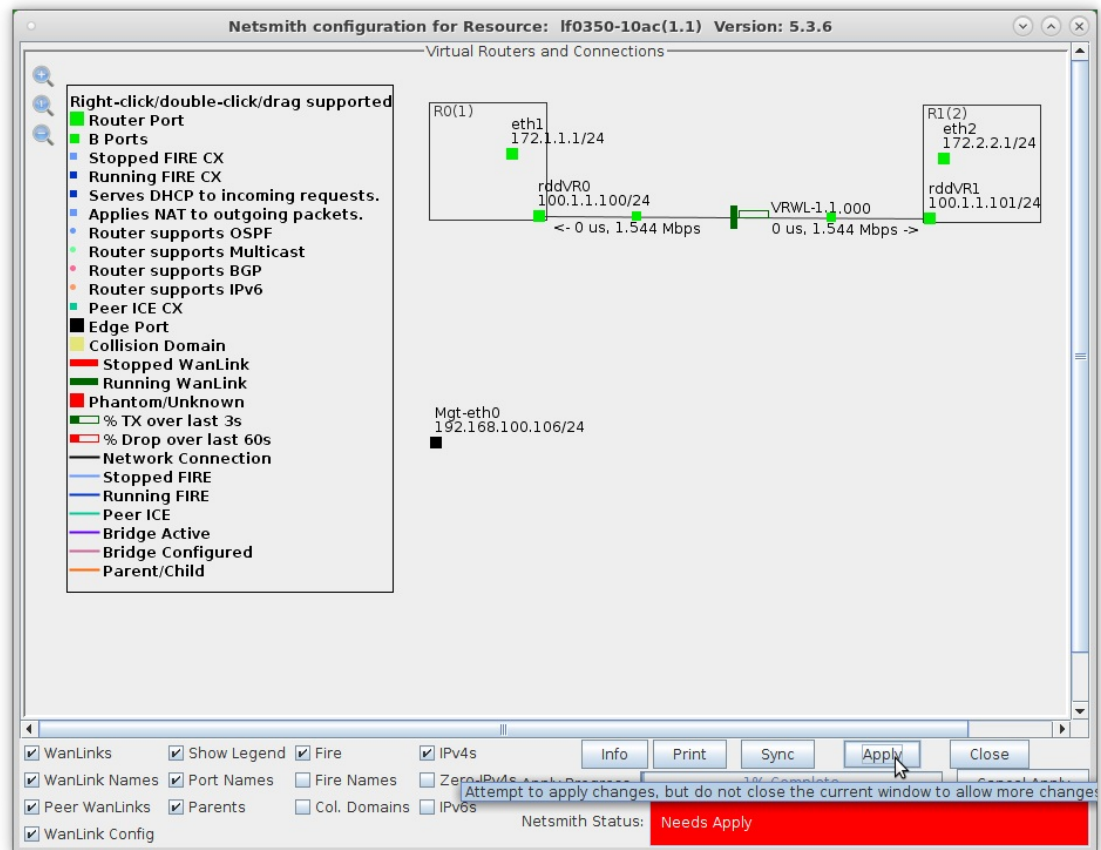
- F. If either physical port connects to a larger routed network, right-click the port and select **Modify** and enter values for Next Hop and Subnets as follows:

- A. **NOTE:** Next Hop is the default gateway of your next network hop  
 B. Up to 8 different subnets can be configured or 0.0.0.0/0 for any subnet  
 C. Click **OK** when done, then click **Apply** in NetSmith to apply your changes

- G. Drag port eth2 into Router R1(0)



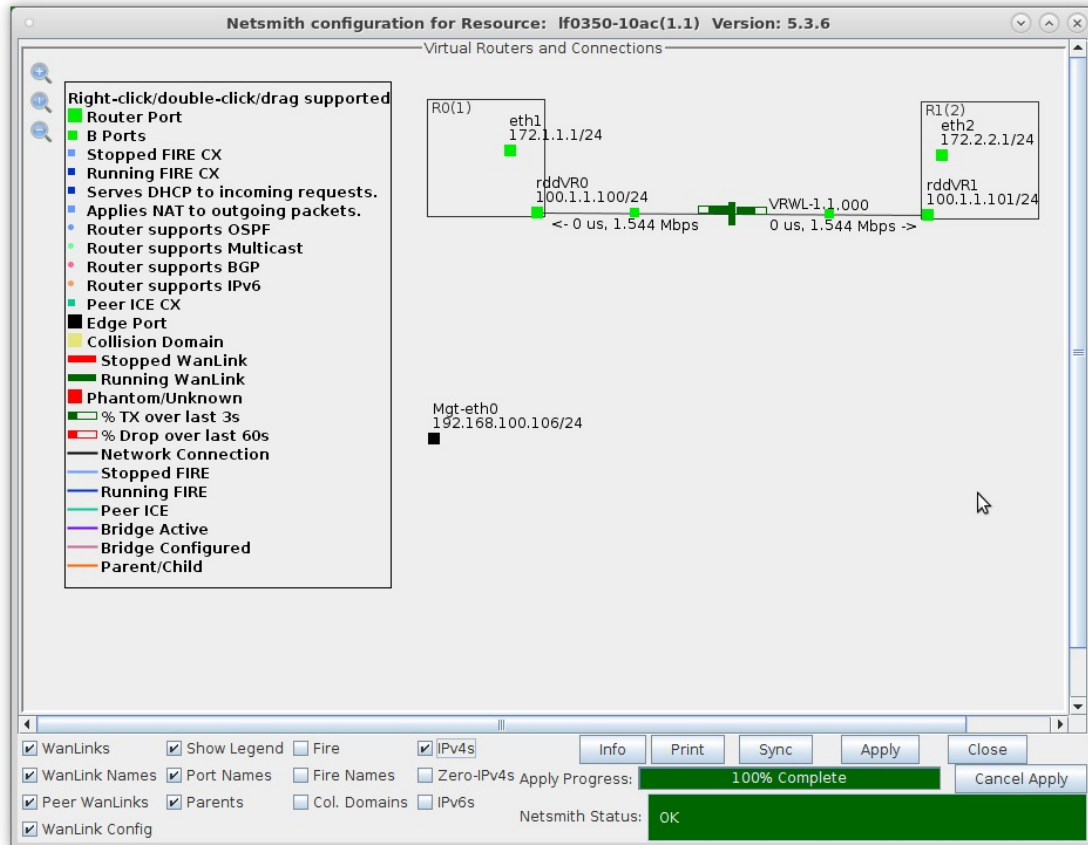
H. Click the **Apply** button at the bottom of the Netsmith window



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

7. Run traffic and verify results. (Refer to LANforge FIRE Cookbook to run traffic)

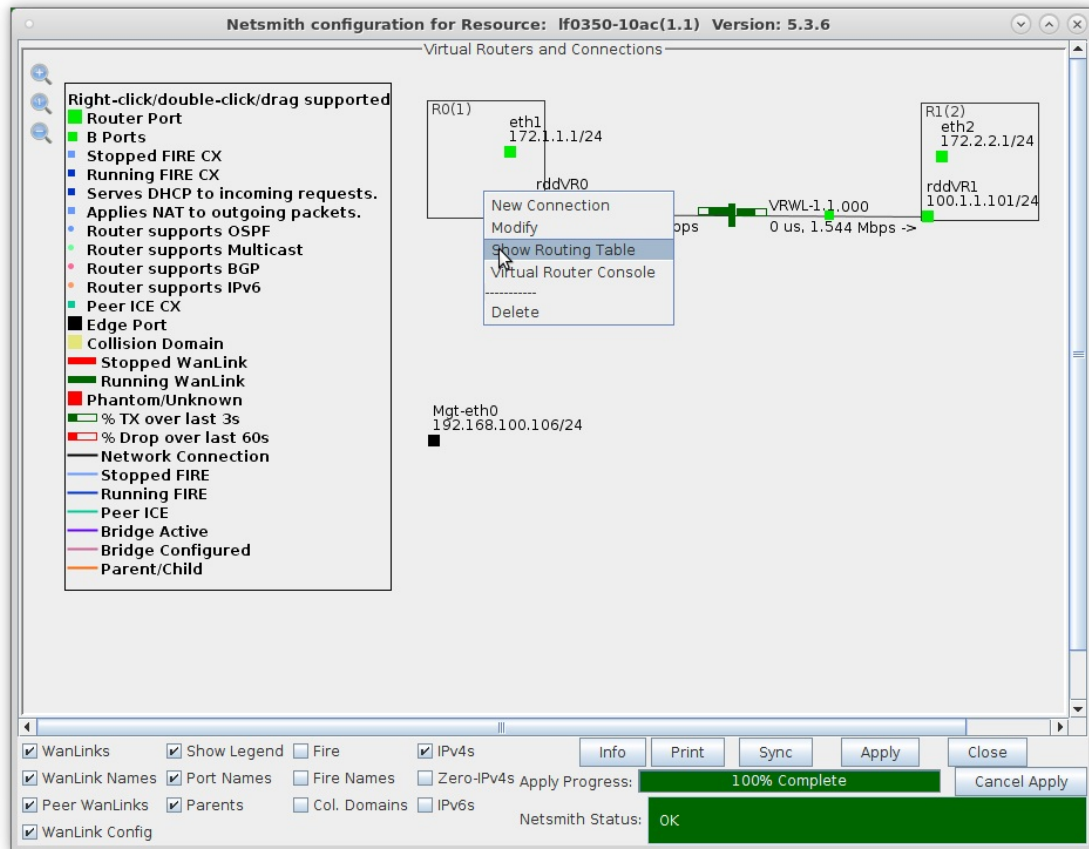
- A. Verify that the traffic on eth1 is being sent to Default Gateway 172.1.1.1 and that traffic on eth2 is being sent to Default Gateway 172.2.2.1



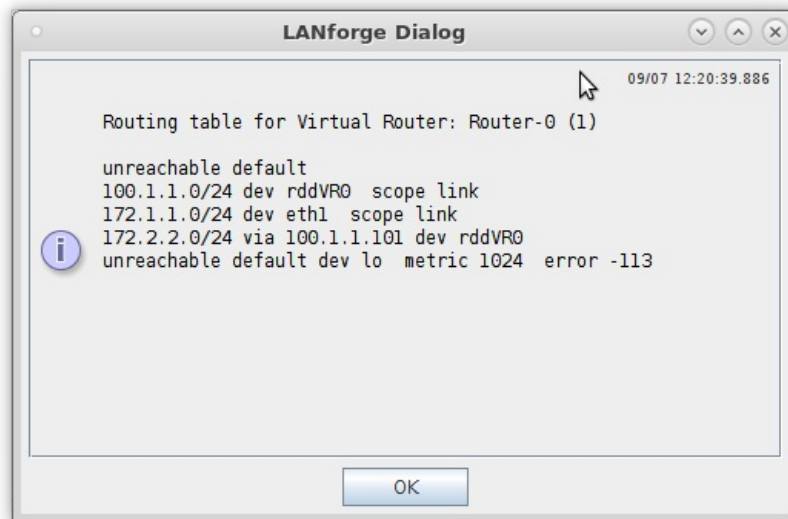
- A. **NOTE:** In this example, traffic to eth1 is from a port configured with IP address 172.1.1.105 Network Mask 255.255.255.0 and Default Gateway 172.1.1.1
- B. Traffic to eth2 is from a port configured with IP address 172.2.2.106 Network Mask 255.255.255.0 and Default Gateway 172.2.2.1
- C. To generate routed network traffic refer to the LANforge FIRE Cookbook [Routed Network Testing](#) section.
- D. If your physical configuration is complete, Netsmith should appear as shown here:



- B. Right-click one of the Virtual Routers and select **Show Routing Table** to view the internal routing table for the Virtual Router



- C. LANforge Virtual Routers by default use simple subnet routing, but can also use OSPF or BGP routing protocols. LANforge can also perform IPv4 multicast routing.



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

For more information see [LANforge FIRE Cookbook](#)

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