

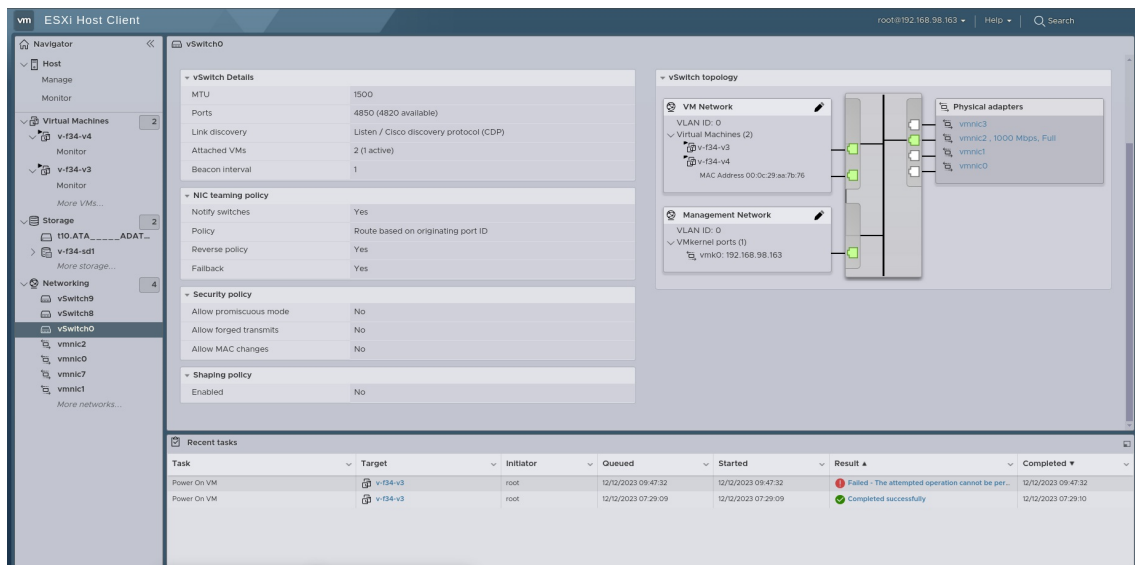
## Install LANforge on ESXi Server (Version 8)

**Goal:** Install LANforge on an ESXi Server, and confirm DHCP can be served over VLANs.

In this test scenario, we use a system compatible with ESXi version 8. ESXi version 8 can run 2 lanforge VMs on 2 different VLANs, host DHCP on one VLAN, and acquire DHCP leases on the other VLAN through a wanlink. This outlines expected behavior and uses cases for VLANs and wanlinks between LANforge and ESXi version 8. Requires LANforge version 5.3.5 or higher.

### 1. Configuring ESXi Server ver. 8.02

- A. This scenario was built upon ESXi 8.02 build 23305546, using a CT-525 with a 4 port 1g nic as well as an accompanying TPLink SG105E Smart Switch.
- B. Log into TPLink SG105E 5 port Smart Switch (usually defaults to 192.168.0.1). Assign ports 2 and 3 to a VLAN, name 8 with ID 8. Assign ports 4 and 5 to a VLAN, name 9 with ID 9. No need for a trunk port at this time.
- C. In ESXi, create 3 vSwitches. vSwitch0, vSwitch8, vSwitch9. vSwitch0 should have been created and configured by default as the management switch. vSwitch8 connects to ports 1 and 2 on the physical NIC, this corresponds to vmnic8 and vmnic9. vSwitch9 connects to ports 3 and 4 on the physical nic, which corresponds to vmnic 10 and 11. Vmnic numbers may vary.
- D. vSwitch0



## E. vSwitch8

**vSwitch8 Details**

MTU	1500
Ports	4850 (4820 available)
Link discovery	Listen / Cisco discovery protocol (CDP)
Attached VMs	2 (1 active)
Beacon interval	1

**NIC teaming policy**

Notify switches	Yes
Policy	Route based on originating port ID
Reverse policy	Yes
Fallback	Yes

**Security policy**

Allow promiscuous mode	Yes
Allow forged transmits	Yes
Allow MAC changes	Yes

**Shaping policy**

Enabled	No
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**Recent tasks**

Task	Target	Initiator	Queued	Started	Result	Completed
Power On VM	v-f34-v3	root	12/12/2023 09:47:32	12/12/2023 09:47:32	Failed - The attempted operation cannot be per...	12/12/2023 09:47:32
Power On VM	v-f34-v3	root	12/12/2023 07:29:09	12/12/2023 07:29:09	Completed successfully	12/12/2023 07:29:10

## F. vSwitch9

**vSwitch9 Details**

MTU	1500
Ports	4850 (4820 available)
Link discovery	Listen / Cisco discovery protocol (CDP)
Attached VMs	2 (1 active)
Beacon interval	1

**NIC teaming policy**

Notify switches	Yes
Policy	Route based on originating port ID
Reverse policy	Yes
Fallback	Yes

**Security policy**

Allow promiscuous mode	Yes
Allow forged transmits	Yes
Allow MAC changes	Yes

**Shaping policy**

Enabled	No
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**Recent tasks**

Task	Target	Initiator	Queued	Started	Result	Completed
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Power On VM	v-f34-v3	root	12/12/2023 07:29:09	12/12/2023 07:29:09	Completed successfully	12/12/2023 07:29:10

G. Next, create 2 port groups. First port group named VLAN8 with an ID of 8, assign vSwitch8 to it, inherit all settings from vSwitch8.

**VLAN8 Details**

Accessible:	Yes
Virtual machines:	2
Virtual switch:	vSwitch8
VLAN ID:	8
Active ports:	1

**vSwitch8 Details**

MTU	1500
Ports	4850 (4820 available)
Link discovery	Listen / Cisco discovery protocol (CDP)
Attached VMs	2 (1 active)
Beacon interval	1

**NIC teaming policy**

Notify switches	Yes
Policy	Route based on originating port ID
Reverse policy	Yes
Fallback	Yes

**Security policy**

Allow promiscuous mode	Yes
Allow forged transmits	Yes
Allow MAC changes	Yes

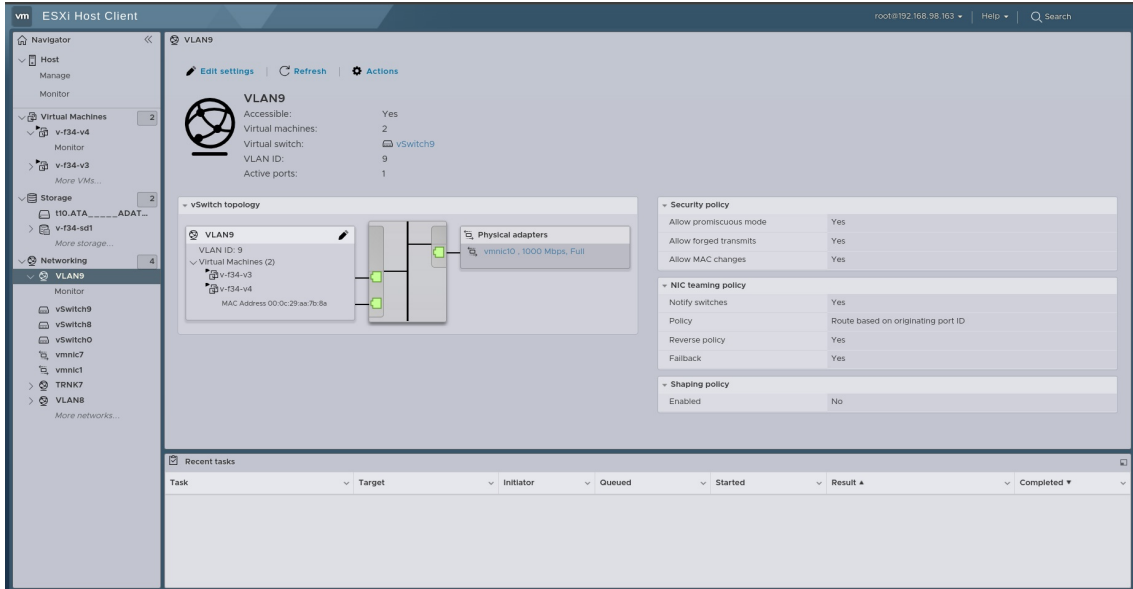
**Shaping policy**

Enabled	No
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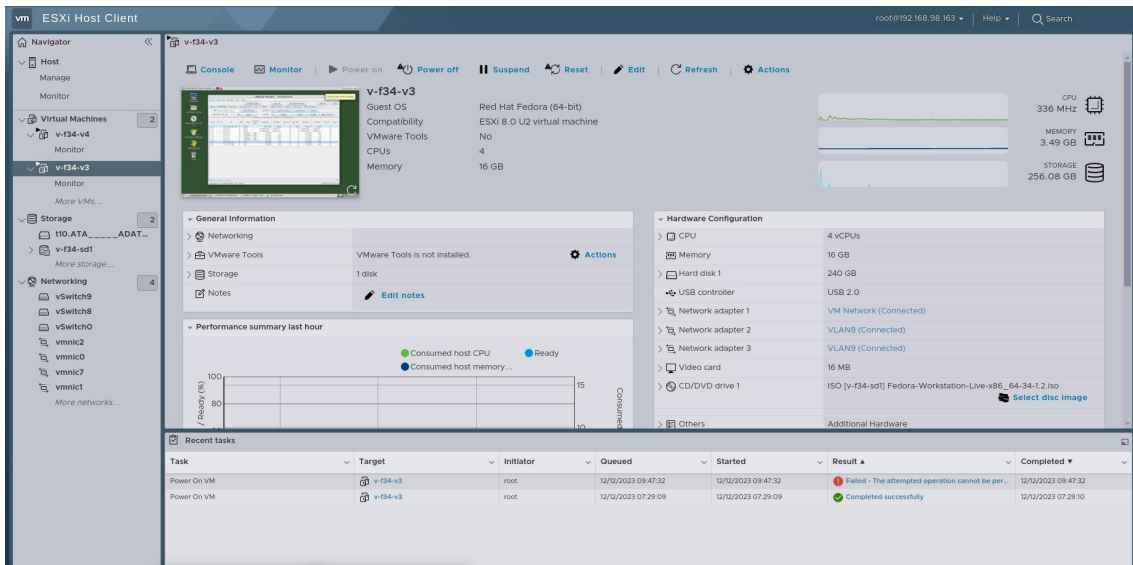
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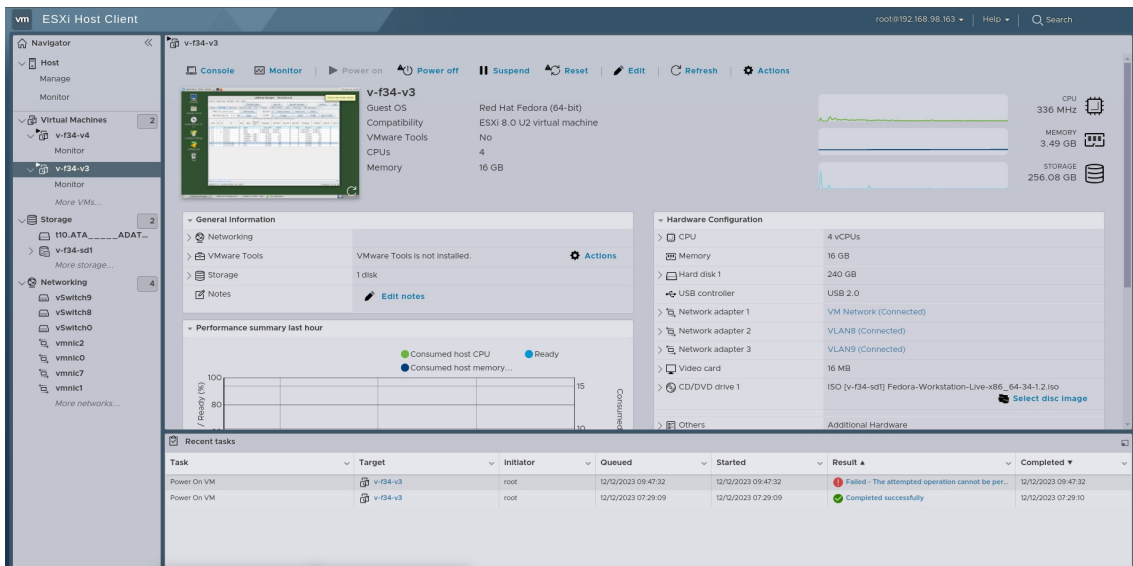
H. Create another port group named VLAN9, with an ID of 9, assign vSwitch9 to it as well, inherit all settings from vSwitch9.



I. Create 2 VMs named v-f34-v3

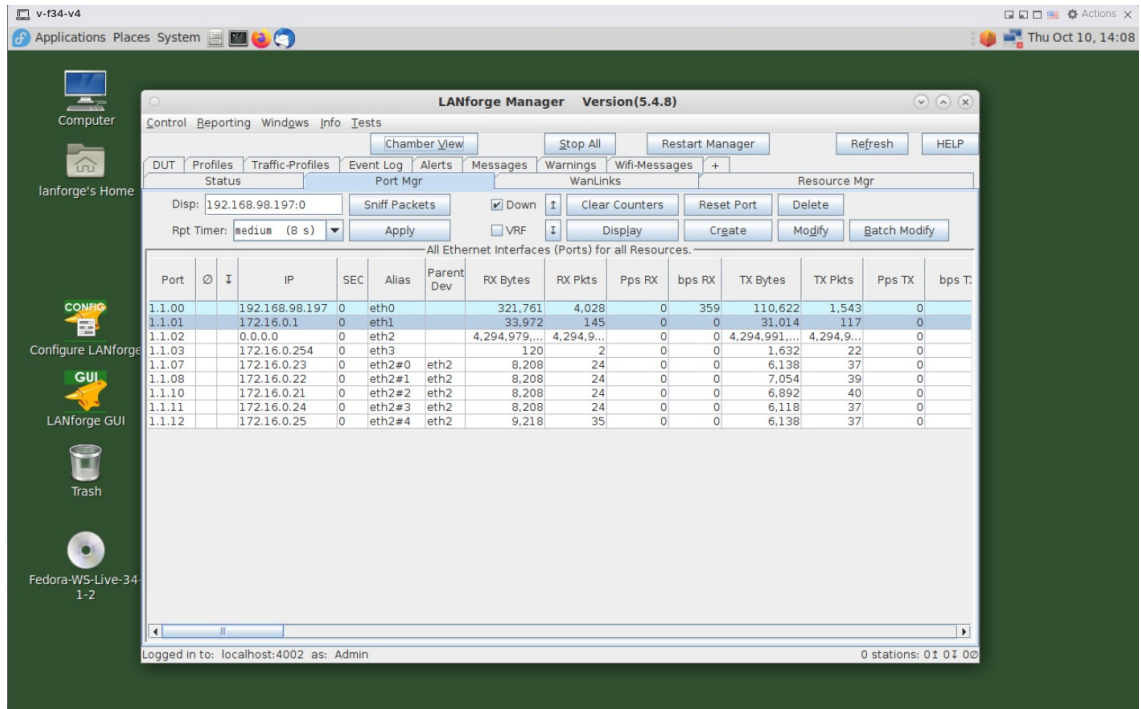


J. and v-f34-v4.

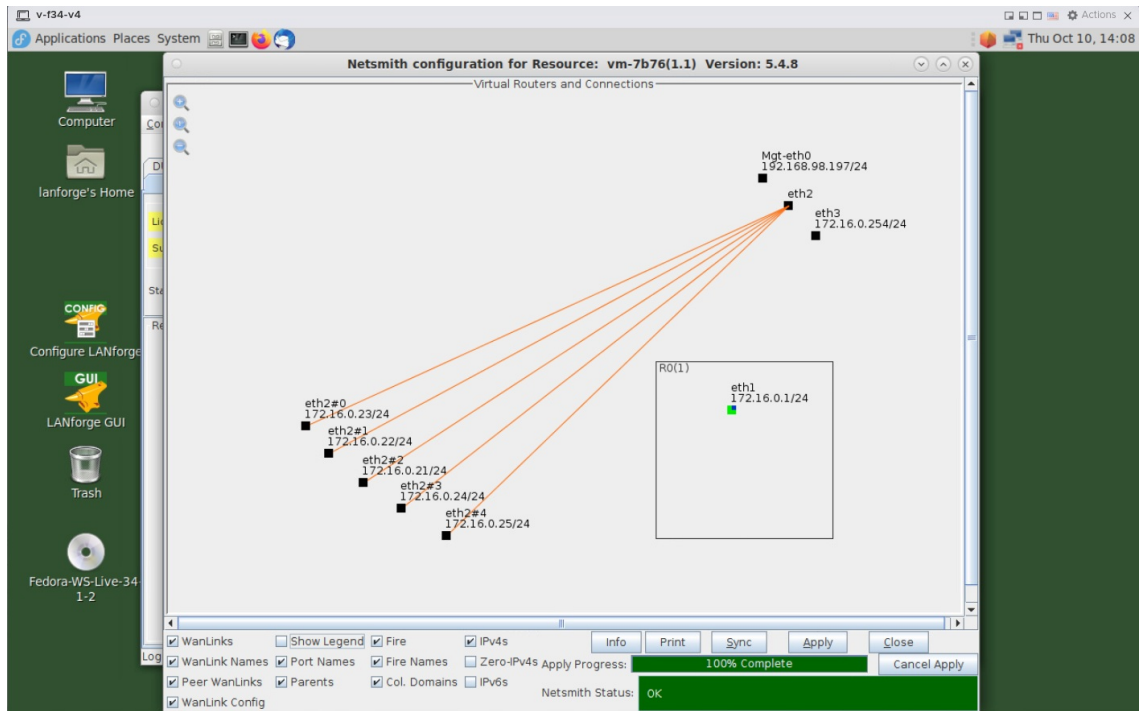


K. Install Fedora 34 on both VMs.

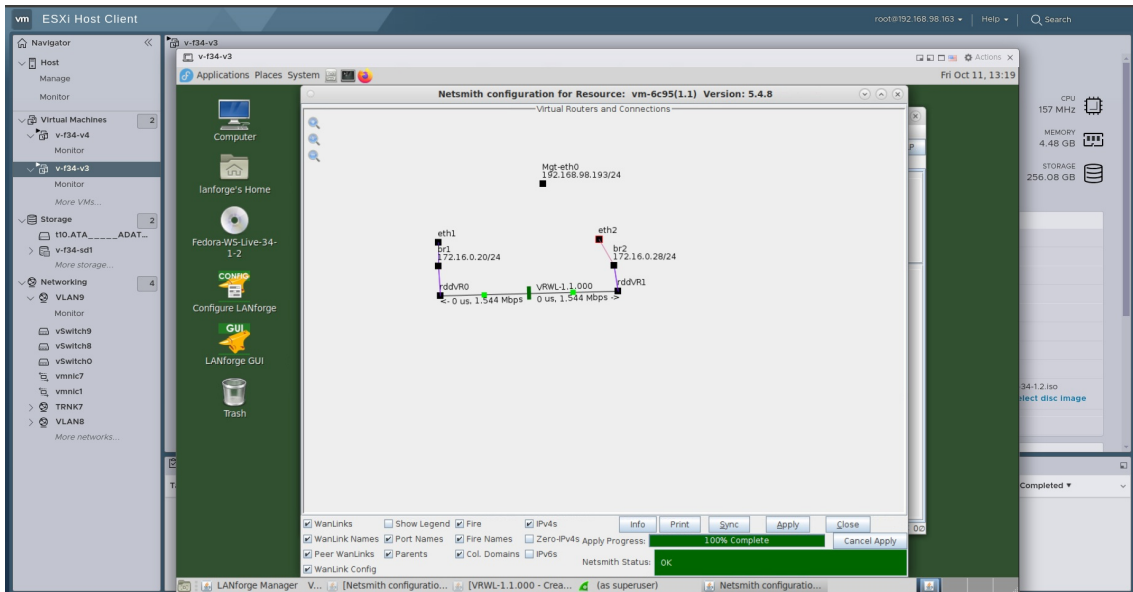
- L. After successful VM creation and Fedora 34 install, power off and add Network Adapters for VLAN8 and VLAN9 respectively.
- M. Install LANforge on both VMs with ./lf\_install.pl
- N. In both LANforge VMs, map eth1 to VLAN8 and eth2 to VLAN9.
- O. In netsmith on LANforge VM v-f34-v4 (traffic generator), create a virtual router, this will be referred to as VR. Place eth1 into VR. In Port Mgr, modify eth1 to have the ip: 172.16.0.1/24.



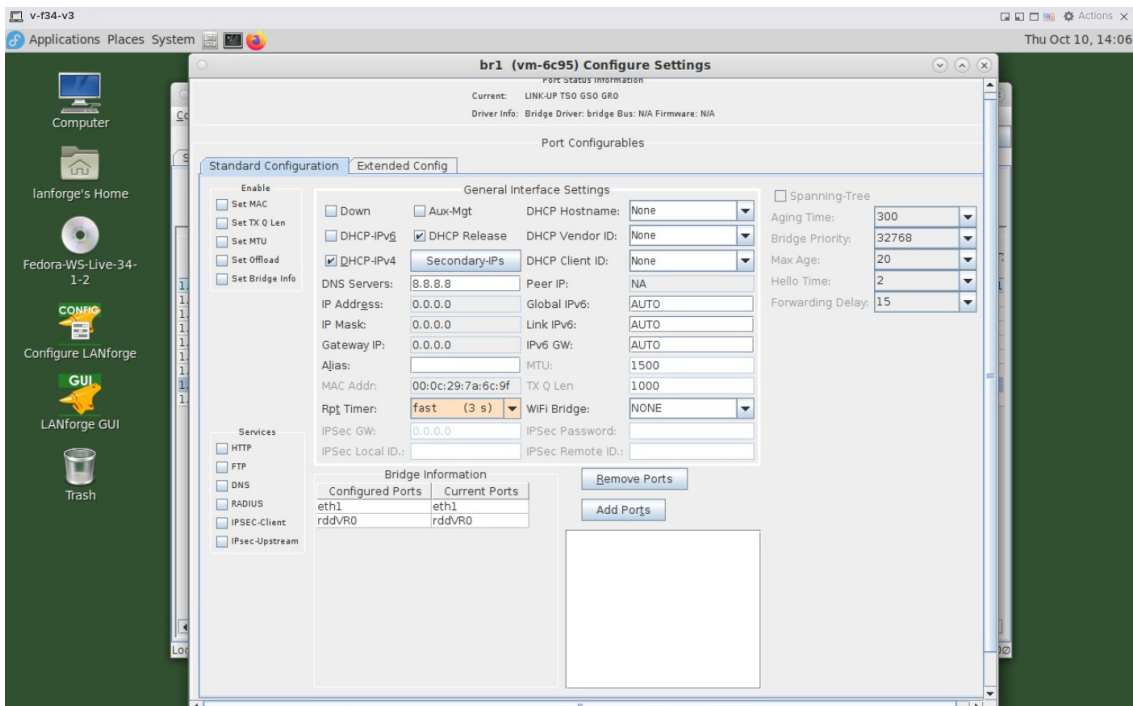
- P. Back in netsmith, right-click and modify eth1 and edit the dhcp range from 172.16.0.20 to 172.16.0.99. Tick the box labeled DHCP.



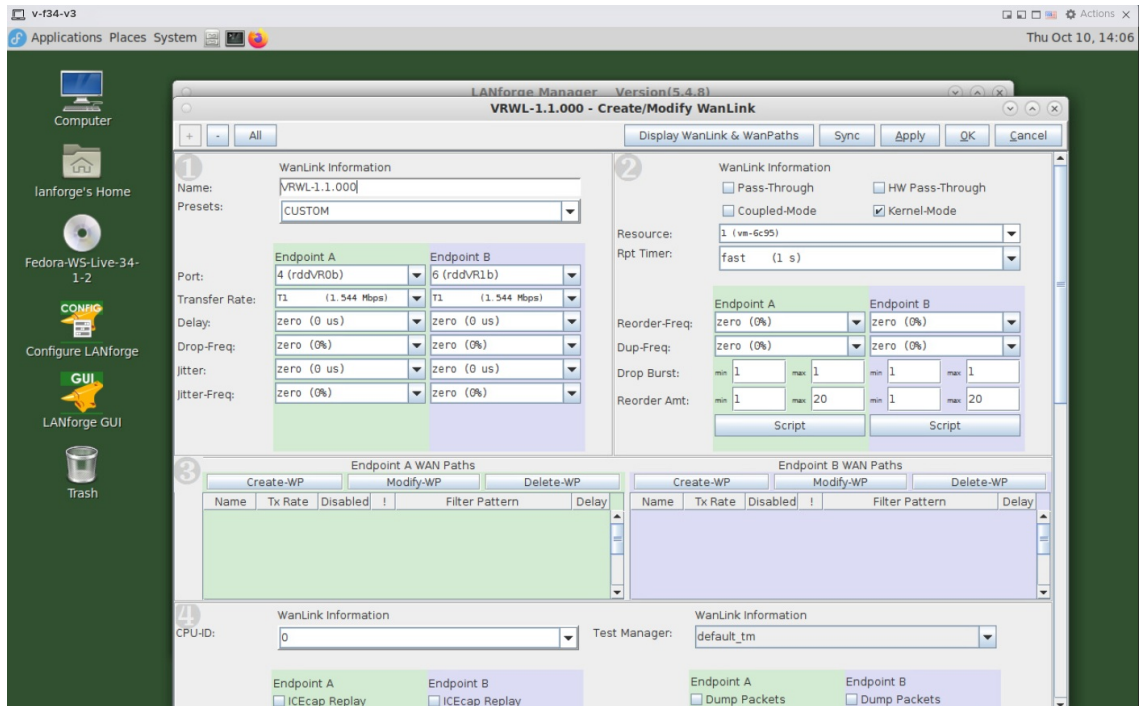
- Q. On LANforge VM v-f34-v3 (wanlink), in netsmith create a new connction (rddVR0 <--> rddVR1). Right-click, select new connection, select bridge, and name it br1 (bridge 1). Select get DHCP.



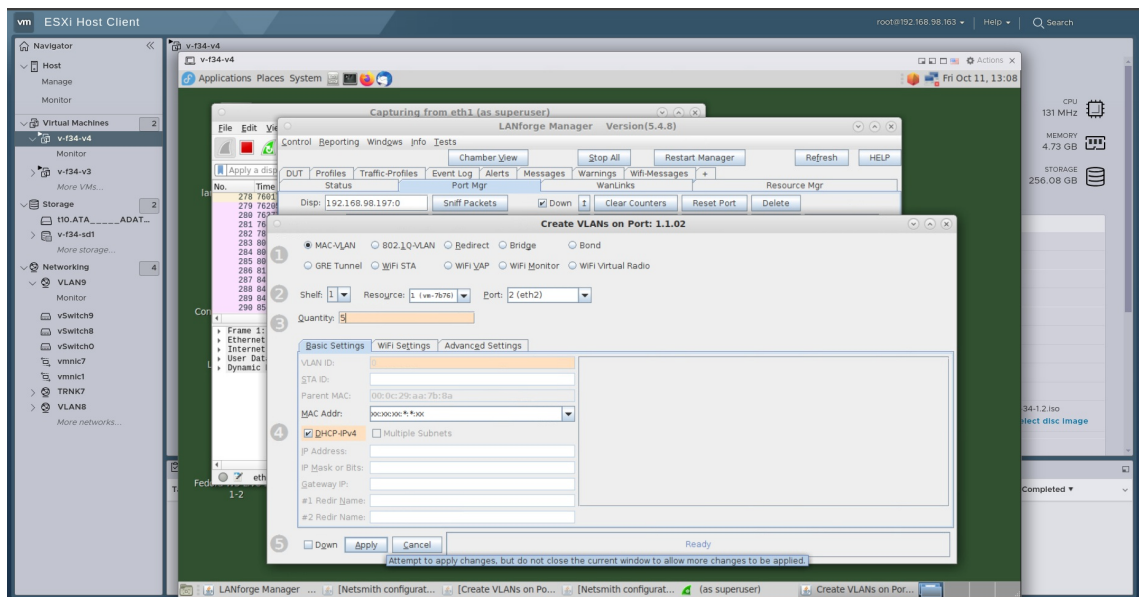
- R. In Port Mgr modify br1 to add ports: eth1 and rddVR0. Repeat steps for br2 (bridge 2). Add ports eth2 and rddVR1 to br2.



S. On LANforge v-f34-v3 (wanlink): navigate to the Wanlinks tab and start the wanlink.



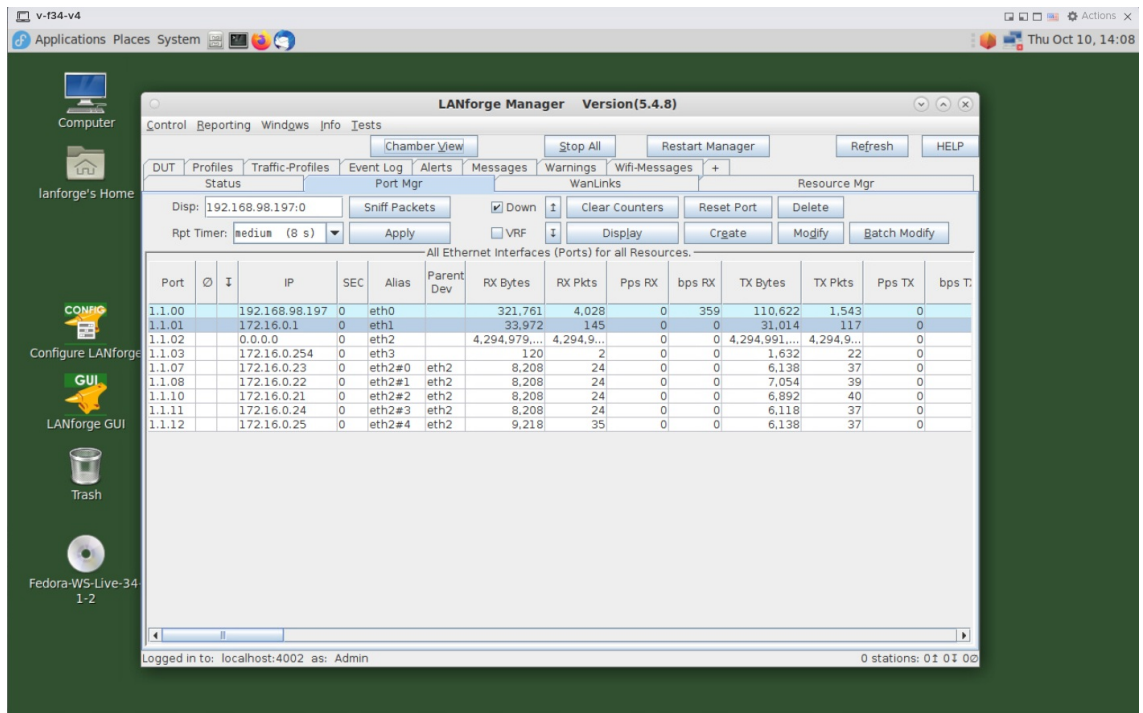
T. On LANforge v-f34-v4 (traffic generator): navigate to Port Mgr, create a MAC-VLAN (quantity 5), with DHCP.



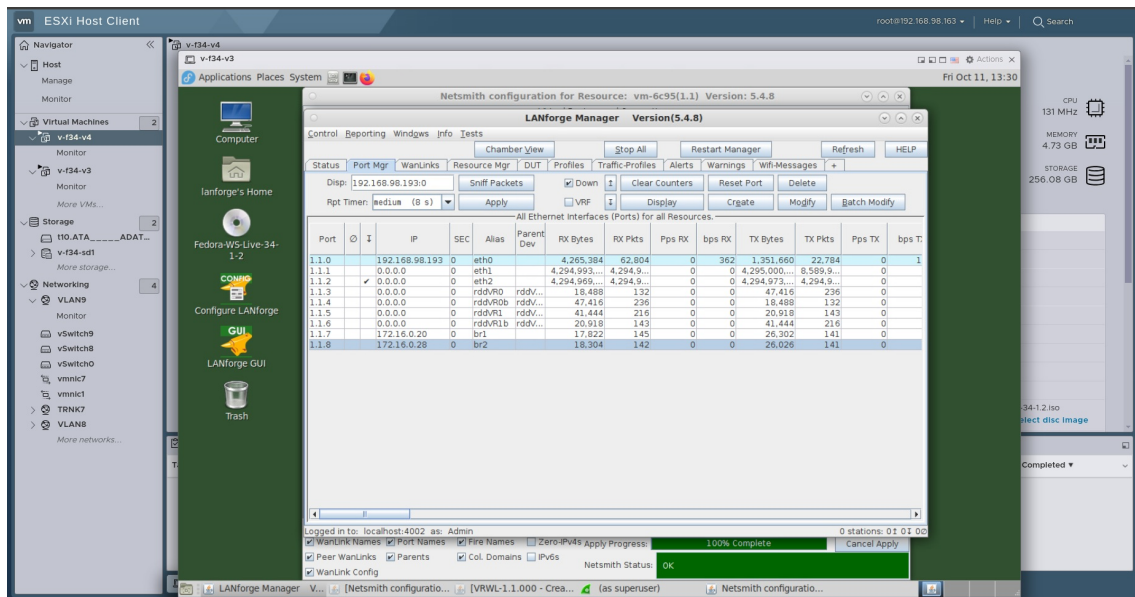
U. On LANforge v-f34-v3: Down and up br1 while packet sniffing br1, br1 should now have DHCP.



V. On LANforge v-f34-v4: Confirm that eth2#0-4 received DHCP.



W. On LANforge v-f34-v3: Down and up br2 after confirming step 17. Br2 should also receive DHCP.



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