

NETROPYVE 4.0

INSTALLATION GUIDE

KVM USING VIRT-MANAGER



APPOSITE
— TECHNOLOGIES

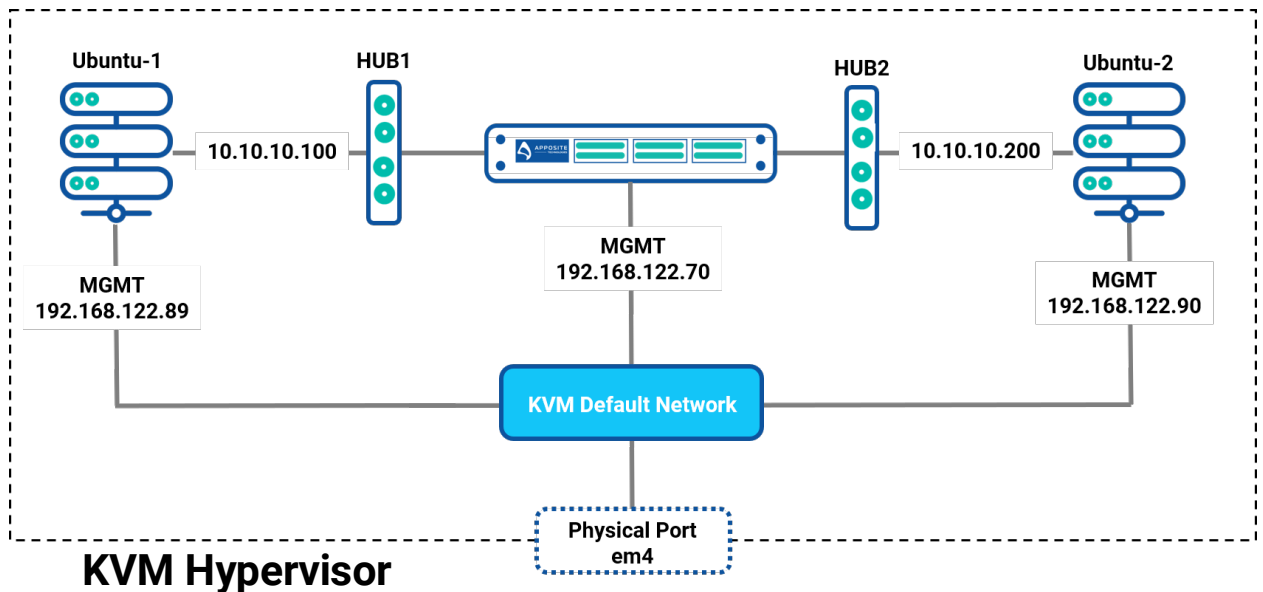
1 OVERVIEW

Objective: To install the NetropyVE product on KVM (qemu version 1.5.3 and above) with the steps to connect the NetropyVE to two virtual machines contained within a single KVM server.

Assumptions: The reader of the document is familiar with KVM, qemu, and virt-manager. The reader already has two virtual machines built and ready to be integrated with the NetropyVE.

This Example: This document will show how to connect two virtual machines to the NetropyVE using the 2nd network cards configured to the virtual machines. The example virtual machines will be called "LA" and "NYC" and be running Ubuntu16 server.

Example Diagram

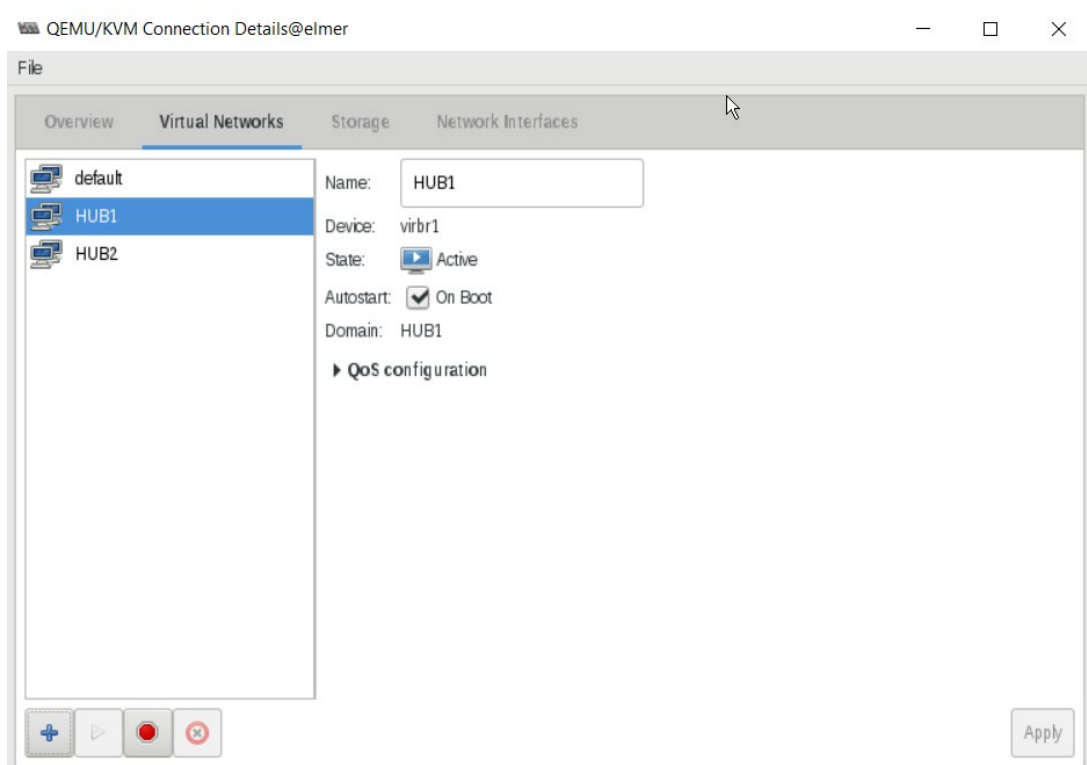


In this example Ubuntu-1 and Ubuntu-2 have second Nic cards that are connected through the NetropyVE. All traffic on the 10.10.10.x network will be impaired.

2 Steps

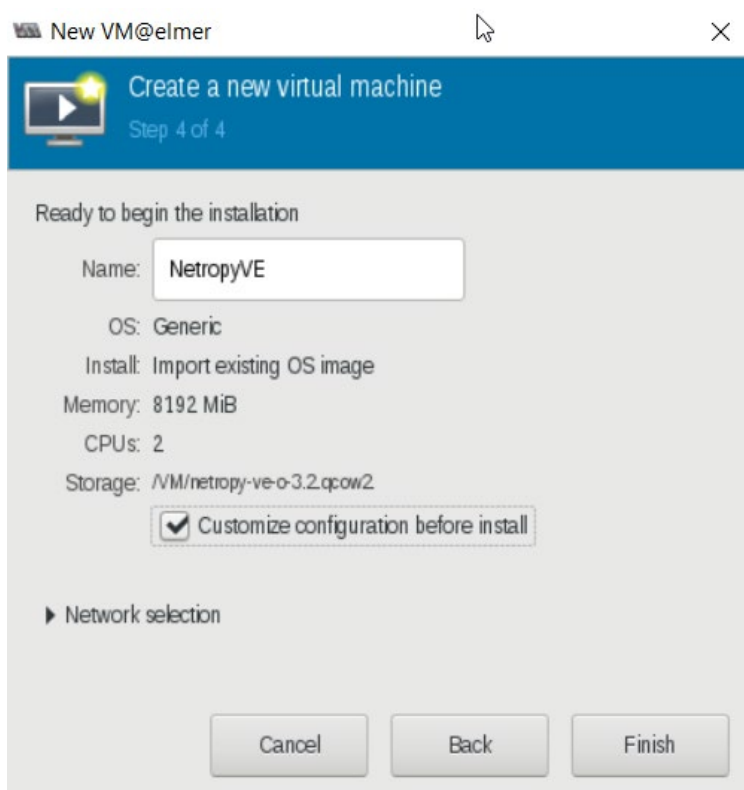
Step 1: Create Virtual networks

- Open virt-manager
- Click on "edit"
 - Connection details
 - Virtual Networks tab
 - Click the "+" at the bottom left of the window
 - Give the network a name. This example we use "HUB1"
 - Click "Forward"
 - Uncheck "Enable IPv4 network address space definition"
 - Click "Forward"
 - Uncheck "Enable IPv6 network address space definition"
 - Click "Forward"
 - Make sure "Isolated virtual network" is checked
 - Click "Finish"
- Repeat the above process and create "HUB2"
- Close the "connection details" window



Step 2: Add the qcow Image

- File -> New Virtual Machine
- Import existing disk image
- Click "Forward"
- Provide the existing path click "Browse"
- Browse local
- Navigate and choose the NetropyVE qcow2 image
- Click "Open"
- Click "Forward"
 - RAM = 8192
 - CPUs = 2
- Click "Forward"
- Name = NetropyVE (or any name you would like to give)
- Check "Customize configuration before install"



- Click Finish

This will open the VM hardware configuration screen for the qcow2 image

- Highlight NIC card and verify it is set to "Virtual Network 'default': NAT"
- Verify the device model is "virtio" ****IMPORTANT**
- Add Hardware
 - Network
 - Network source = "Virtual Network HUB1: Isolated Network, internal and host routing only"
 - Device Model "virtio" ****IMPORTANT**

- Finish
- Add Hardware
 - Network
 - Network source = "Virtual Network HUB2: Isolated Network, internal and host routing only"
 - Device Model "virtio" ****IMPORTANT**
 - Finish
- Upper left corner click "Begin Installation"

You will see the NetropyVE boot up and give you a login screen

Step 3: Configure the NetropyVE

- Login to the NetropyVE with the username "admin"
- Verify the NetropyVE management port gets a DHCP address
 - mgmt show

The screenshot shows a terminal window titled "Press Control_L+Alt_L to release pointer. NetropyVE on QEMU/KVM@elmer". The terminal output is as follows:

```

Netropy UE Network Emulator
Copyright (c) 2010-2017 Apposite Technologies LLC

netropy login: admin
[admin@netropy] mgmt show
  Hostname:      netropy
  Domain:       (DHCP)
  Ethernet address: 52:54:00:a6:ae:70
  IP address:    192.168.122.70/255.255.255.0 (DHCP)
  Default route: 192.168.122.1 (DHCP)
  Name Servers:  8.8.8.8 8.8.4.4
  NTP Servers:   (DHCP)
[admin@netropy] _

```

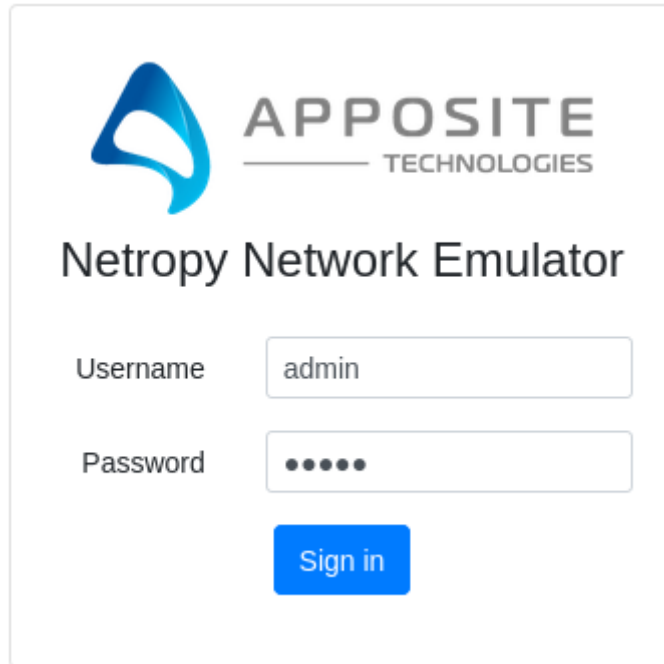
- If you want to configure a static IP you can do so by typing
 - mgmt set addr 192.168.122.70 netmask 255.255.255.0
 - mgmt set gw 192.168.122.1

Step 4: License the Netropy

- Using a web browser type the IP address of the NetropyVE you configured above into the URL
- You will be prompted to login.

User: admin

Pass: admin



The image shows the login interface for the Netropy Network Emulator. At the top left is the Apposite Technologies logo, which consists of a blue abstract shape resembling a stylized 'A' or a drop. To the right of the logo, the text 'APPOSITE' is written in a large, bold, sans-serif font, with 'TECHNOLOGIES' in a smaller font below it. Underneath the logo and company name, the title 'Netropy Network Emulator' is displayed in a large, bold, sans-serif font. Below the title, there are two input fields: 'Username' with the text 'admin' entered, and 'Password' with five black dots representing a masked password. A blue button with the text 'Sign in' is positioned below the password field.

- Click "I Accept" to accept the License Agreement
- Click "I Accept" on the Netropy Warning
- Enter the license key provided and click "Apply key"

Netropy License Expired

The license on this unit has expired. To renew the license, please contact your Apposite reseller or the Apposite sales team at renewals@apposite-tech.com.
For more information on license renewals, see the Apposite website at <https://www.apposite-tech.com/renewals>.

To install a new license, please enter the license key below and click 'Apply Key'. The license key can also be entered from the License Key tab on the Administration panel.

Serial number: **VN-320959B1B6**

License Status: **Missing or Invalid**

License Key

089f-2919-2ba7-4671-be95-3268-1bc1-5353

Apply Key

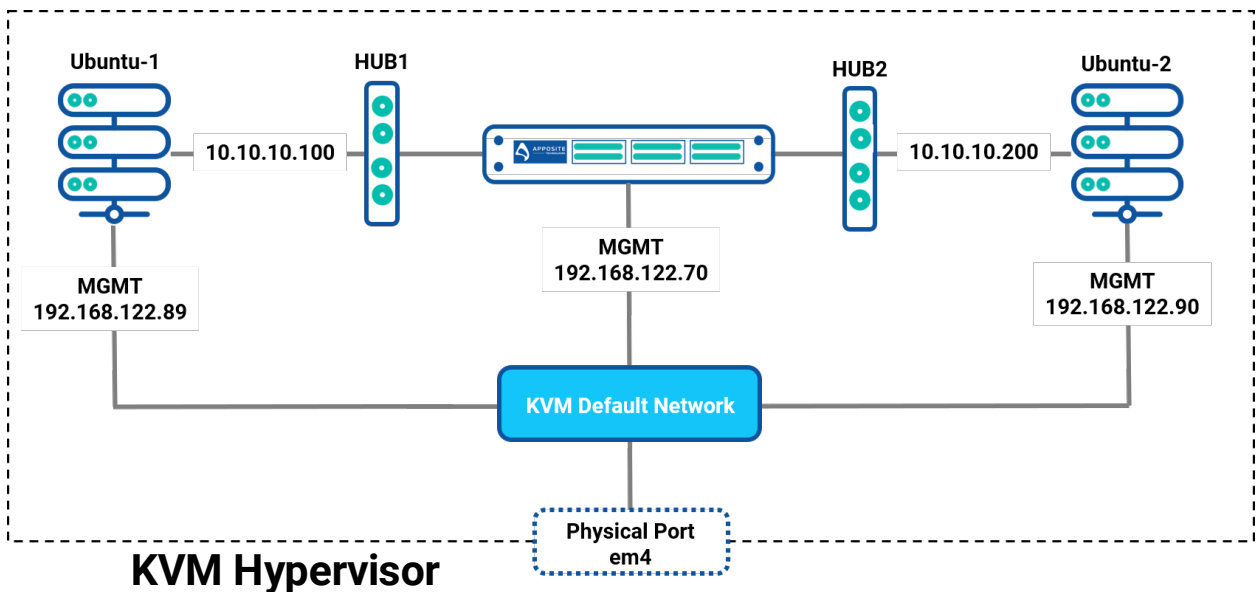
Close

If you do not have a Key please contact your Apposite Sales rep or sales@apposite-tech.com.

In the diagram below the following is configured:

Ubuntu-1
ens3=192.168.122.89
Network: NAT
ens9=10.10.10.100
Network: HUB1


Ubuntu-2
ens3=192.168.122.90
Network: NAT
ens9=10.10.10.200
Network: HUB2



This means anything that runs through 10.10.10.x will travers through the NetropyVE and can be impaired.

Step 5. Test Emulation

Login to the NetropyVE via http

- Click on the  icon next to "Default Path"
 - At the top change the name at the top (this example "Ubuntu-1 to Ubuntu-2")
 - Set the "Bandwidth" of "Port 1 – Outbound to WAN" (this example is 1Gbps)
 - Under "WAN Port 1 to Port 2" set the Delay to constant (in this example 40ms)
 - Set the "Bandwidth" of "Port 2 – Outbound to WAN" (this example is 1Gbps)
 - Apply Changes

Topology / Path / Manage Playback Ubuntu-1 to Ubuntu-2 Delete Path Apply Changes

Port 1 - Access Emulation

Outbound to WAN

Bandwidth: 1 Gbps

Background Utilization: Off

Queue Limit: Default

Queue Strategy: Default (FIFO)

MTU Limit: Off

Frame Overhead: 18 - Ethernet HDR+FCS

WAN Emulation

Port 1 to Port 2

Delay: Constant

Latency: 40 ms

Loss: Off

Network Outage: Off

Corruption: Off

Reordering: Off

Duplication: Off

Port 2 - Access Emulation

Inbound from WAN ENABLED

ENABLED Inbound from WAN

Port 2 to Port 1

Delay: Constant

Latency: 40 ms

Loss: Off

Network Outage: Off

Corruption: Off

Reordering: Off

Duplication: Off

Outbound to WAN

Bandwidth: 1 Gbps

Background Utilization: Off

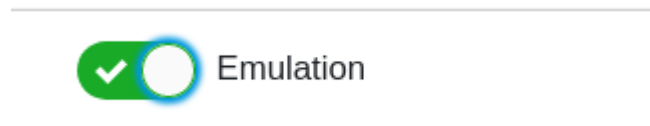
Queue Limit: Default

Queue Strategy: Default (FIFO)

MTU Limit: Off

Frame Overhead: 18 - Ethernet HDR+FCS

Close the window and turn emulation on



Emulation should now be on. If you ping from Ubuntu-1 to Ubuntu 2 using the 10.10.10.x network

```

appo@ubuntu-1:~$ ping 10.10.10.200
PING 10.10.10.200 (10.10.10.200) 56(84) bytes of data.
64 bytes from 10.10.10.200: icmp_seq=1 ttl=64 time=80.6 ms
64 bytes from 10.10.10.200: icmp_seq=2 ttl=64 time=80.6 ms
64 bytes from 10.10.10.200: icmp_seq=3 ttl=64 time=80.6 ms
64 bytes from 10.10.10.200: icmp_seq=4 ttl=64 time=80.7 ms

```


Apposite® Technologies LLC

17835 Ventura Blvd suite 211

Los Angeles, CA 91316 USA

1.310.477.9955

info@apposite-tech.com

www.apposite-tech.com