G53SEC Manual: Networking Virtual Machines

Introduction

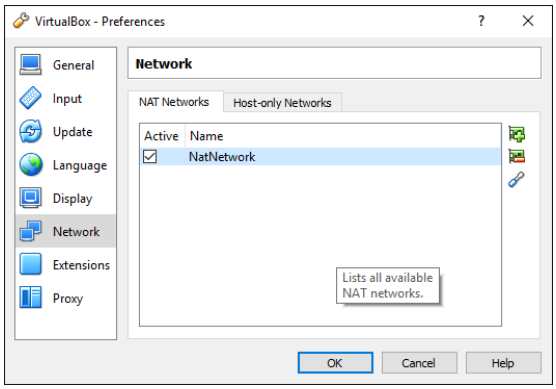
Virtualbox has some pretty powerful networking tools, but they can be a pain to setup for a newcomer. This document will describe how you can network up a number of VMs into a safe virtual network.

> **Important**
> Do not use your Kali VMs to "pen test" or otherwise exploit the University network. It's hard to overestimate how much trouble you would be in. Stick to the small VM network we will setup, IPs 10.0.2.X.

Networking Virtual Machines

When we're only using a single machine, networking isn't much of a concern. We'll now need to set up a small internal network between the two VMs, so they can talk, but we don't open them up to the wider internet, or the School network. They'll still be able to access the internet, or download software and updates via the machine you're sitting at.

First we must instruct VirtualBox to create a small NAT network with its own DHCP server, serving IP addresses to the VMs. Click File -> Preferences, then select Network. Make sure there is an entry called NatNetwork, which might be there by default. If not, click the small + button in the upper-right corner, to add a network. You can edit it if you like, but it will work immediately. Click OK and return to the main page.



Next we need to instruct each VM that they will be connecting to this network. Select a VM and bring up the settings page. Click Network, and then for Adapter 1, choose "NAT Network" from the drop down list. A new list will become enabled in which you select the network you named in the previous step, which is probably also NatNetwork, confusingly. Click OK and then repeat the process for the other VM. As an aside, you can allow the VMs to put their network cards into promiscuous mode, which is useful if you want to use wireshark. The way lab 6 is set up it wont make much difference, but you can select VMs here to allow sniffing between them.

TESTING CONNECTIVITY

Boot up both virtual machines, log into both, and bring up two terminals. In both cases check the network is up and running, and that you have been provided a valid IP from the VirtualBox DHCP server:

```
sec@kali:~$ sudo ifconfig
eth0      Link encap:Ethernet  HWaddr 08:00:27:59:b3:9c
          inet addr:10.0.2.4  Bcast:10.0.2.255  Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fe59:b39c/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:4 errors:0 dropped:0 overruns:0 frame:0
          TX packets:52 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1380 (1.3 KiB)  TX bytes:8676 (8.4 KiB)
...
```

You should see the IPv4 address listed under “inet addr:”, both machines should have different addresses like the one above. If the IP address is the same for both, that indicates a problem with your setup, or that they accidentally have the same MAC address (HWaddr). You can now test the connection between machines by pinging back and forth. Pinging is blocked