Network Configuration in VirtualBox for SEED Labs

In many of the SEED labs, we need to run multiple guest VMs, and these VMs should be able to (1) reach out to the Internet, (2) communicate with each other, and (3) communicate with the host. This was easily achieved in VMware if you use the “NAT” setting for each VM, but in VirtualBox, things are different: if we use the “NAT” setting for each VM, we can achieve 1, but not 2 or 3, because each VM will be placed in its own private network, not on a common one; they even have the same IP address, which is not a problem because each VM is the only computer on its own private network. On the other hand, if we use the “Host-only” setting for each VM, we can achieve 2 and 3, but not 1. Using this setting, all the VMs and the host will be put on a common network, so they can communicate with each other; however, because of the lack of NAT, the VMs cannot reach out to the outside.

Therefore, in order to achieve all these 3 goals, we have to use both “NAT” and “Host-only”. Namely, each VM should have two network adapters, one configured to “NAT” and the other configured to “Host-only”. Each VM will basically connect to two virtual networks, one through the “NAT” adapter, and the other through the “Host-only” adapter. Therefore, each VM has two IP addresses. If you want to reach another VM, you need to use that VM’s IP address that is associated with the “Host-only” adapter. See the following diagram.
**Instructions**

**Step 1:** In Virtual Box main UI, click the file on the top left.

![VirtualBox Main UI](image1.png)

**Step 2:** Choose “Preferences...” option, and then click the “Network” tab on left panel.

![VirtualBox Network Settings](image2.png)

**Step 3:** Make sure you have Host-only Network listed there. If not, click the “+” button to create one. Double click on the Host-only network, and look at its specifications. Set the specifications same as the picture above.

**Step 4:** Now set up the network of the two VMs, the setting is the same for both of them. You need to power off the VM in order to make the following the changes.
1> Enable Adapter 1, and choose “NAT”.

2> Enable Adapter 2, and choose “Host-only”.
Step 5: Now power on the two VMs, and check their IPs (the actual addresses may be different).

VM_A: NAT Adapter: 10.0.2.14  Host-only Adapter: 192.168.56.101
VM_B: NAT Adapter: 10.0.2.15  Host-only Adapter: 192.168.56.102

Step 6: Use their 192.168.56/ typed IP to ping to each other.

Step 7: From host machine, you can use the 192.168.56.x IP address to ping the VMs. You can also FTP to these VMs.
Reference:

http://www.coding4streetcred.com/blog/post/VirtualBox-Configuring-Static-IPs-for-VMs.aspx