**Title: Setup Static IP addresses**

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**OS: CentOS 7**

**Setup:**

To get started on being able to ping two different virtual machines with VirtualBox then go ahead and download the latest version from this url: <https://www.virtualbox.org/wiki/Downloads> . Make sure that everything has been downloaded correctly. For this tutorial, I will be using a Windows host machine with enough resources for two virtual machines. The first machine will be named master1 and the second will be master2. Each will have 10 GB in storage and 2 GB in RAM. Do the following:

* Go to settings->General->Advanced
  + And change the Shared Clipboard to: Bidirectional
  + And change Drag’n’Drop to: Bidirectional
* Go to settings->System
  + Uncheck the floppy and move it down below hard disk.
* Go to settings->System->Processor
  + Make sure that the Enable PAE/NX is unchecked.
* Go to settings->Storage
  + Click the cd under Controller: IDE, and on the far right click the other cd and pick your virtual optical disk drive. This is where you can add your OS image.
* Go to settings->Network
  + Go to Adapter 2, click the checkbox next “Enable Network Adapter”.
  + Next switch the Attached to from Not Attached to Host-Only Adapter.
  + Next, change the Promiscuous Mode under the Advanced settings to Allow VMs.
  + Then click the “ok” button at the bottom.

**Part 1:**

* Click on the start button for each of the virtual machines and proceed with the installation. Once the installation has finished, power down the machines and go back into the settings to change the boot order in the “System” option. Un-check the optical option and move it below the hard disk. We’re going to do this part on both virtual machines.
* Make sure that when you are in that all your networks are on and running and that you have an internet connection. While I have been working with CentOS 7 if you don’t setup the internet correctly during the operating system install then you will constantly have to turn on the network every time you reboot.

**Part 2:**

* It is a smart idea to give the system a host name so that if you want to edit the /etc/hosts file you can associate an IP address to an easier to remember hostname.
* Type: hostnamectl set-hostname username
* We will give master1 192.168.20.201, and give master2 192.168.20.202. Don’t make the last number bigger than 299, or you will get errors trying to restart the device.
* Type: sudo nano /etc/sysconfig/network-scripts
  + TYPE=Ethernet
  + BOOTPROTO=static
  + DEFROUTE=yes
  + IPV4\_FAILURE\_FATAL=no
  + IPV6INIT=yes
  + IPV6\_AUTOCONF=yes
  + IPV6\_DEFROUTE=yes
  + IPV6\_FAILURE\_FATAL=no
  + IPV6\_ADDR\_GEN\_MODE=stable-privacy
  + NAME=enp0s8
  + UUID=f328ad46-ecf6-438e-9409-ca6bd45945fe
  + DEVICE=enp0s8
  + ONBOOT=yes
  + IPADDR=192.168.20.201
  + NETMASK=255.255.255.0
* Type: sudo service network restart
* Type: sudo ifup enp0s8

**Other:**

You should now be able to ping either machine from each one. If not, then try to fix the errors as best as you can, and use google. Now if you don’t want to setup an IP address you can just ping the enp0s8 device IP address instead.

The NAT stands for network address translation, the NAT virtualizes the internet protocol and decreases the number of IP addresses an organization needs. The Host-only adapter can connect to multiple virtual machines that are running on the same machine. The Bridged Adapter can allow the host machine be able to putty into the virtual machine.

Here is just some of the basic information to know about the networking for any operating system that is running on VirtualBox. The /etc/hosts file maps hostnames to IP addresses, and is where you can add other IP address to associated hostnames. This works well when you want to replace IP addresses for hostname’s, basically like a shortcut. This directory on Red Hat systems /etc/sysconfig/network-scripts/ is where you can associate a network device with a static IP address.