

# How\_to\_Create\_a\_Network\_of\_Machines\_in\_VirtualBox\_with\_SSH\_A

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## 1 How to Create a Network of Machines in VirtualBox with SSH Access

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### Instructions

- Go to File > Host Network Manager, and click Create.
- Go to DHCP Setting, and Disable them. We're giving our machines static IPs.
- Select the Ubuntu Desktop you have installed, and click settings.
- Navigate to the Network Tab, check out the settings for adapter 1. 'Attached to:' should be set to NAT, and it should be enabled.
  - This will allow our guests to make an internet connection through our host connection.
- Go to adapter 2, enable it, and change 'Attached to:' to Host-only Adapter. Be sure its Name is set to the same one we just created in the Host Network Manager
- Go to the Base Ubuntu Desktop you created, Ctrl click and select Clone.
- Name the clone 'ubuntu-1', and click the checkbox that reinitializes the MAC address of all network cards.
- Select Full Clone
- Select Current Machine State, and click clone.s
- Repeat the process, but change the clone's name to 'ubuntu-2'.
- Launch both Clones and log in using your original credentials from the base machine you cloned from.
- Open terminal in both, and check to make sure they have an internet connection. You can do this by typing `ping google.com`.
- Now we need to change the hostnames of both machines, because they are identical, which is not what we want.
- BOTH MACHINES: Do this by typing `sudo nano /etc/hostname`.
  - Remove both hostnames currently in the files and change one to ubuntu-1, and the other to ubuntu-2.
  - Type Ctrl-X, y, and press enter.
- BOTH MACHINES: And typing `sudo nano /etc/hosts`.
  - Change the name under localhost to the name used in /etc/hostname.

```

coreyms at coreyms-VirtualBox in ~
$ ifconfig -a
enp0s3    Link encap:Ethernet  HWaddr 08:00:27:b0:a8:01
          inet addr:10.0.2.15  Bcast:10.0.2.255  Mask:255.255.255
          .0
          inet6 addr: fe80::9324:73d0:706:826d/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:79 errors:0 dropped:0 overruns:0 frame:0
          TX packets:143 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:10063 (10.0 KB)  TX bytes:13867 (13.8 KB)

enp0s8    Link encap:Ethernet  HWaddr 08:00:27:5f:f3:4f
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:77 errors:0 dropped:0 overruns:0 frame:0
          TX packets:121 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:16341 (16.3 KB)  TX bytes:19622 (19.6 KB)

```

ubuntu-1

- Type Ctrl-X, y, and press enter.
- BOTH MACHINES: Type `ifconfig -a`.
  - The `inet addr:` is bound to our first adapter
  - We are going to set `enp0s8`'s `inet addr:` to the ip address in our Host Network Manager
- BOTH MACHINES: Type `sudo nano /etc/network/interfaces`
  - Add the following, BUT CHANGE the 1 to a 2 for ubuntu-2:

```

auto enp0s8
iface enp0s8 inet static
address 192.168.56.1
netmask 255.255.255.0

```

  - This sets up a static ip for the machine.
  - Type Ctrl-X, y (save), and press enter.
- BOTH MACHINES: Run `sudo reboot`
  - Those changes shouldn't need a reboot to take affect, but better safe then sorry.
- BOTH MACHINES: Log Back in, and open terminal.
  - Should see that the hostname has changed.
- BOTH MACHINES: Re-run the `ifconfig -a` command.
  - The static ip address you assigned to `enp0s8` should now show up.
- BOTH MACHINES: Now have either machine ping the other to test that they are indeed on the same network.

```

coreyschafer at Coreys-iMac in ~
$ ssh coreyms@192.168.56.101
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@    WARNING: REMOTE HOST IDENTIFICATION HAS CHANGED!    @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
IT IS POSSIBLE THAT SOMEONE IS DOING SOMETHING NASTY!
Someone could be eavesdropping on you right now (man-in-the-middle attack)!
It is also possible that a host key has just been changed.
The fingerprint for the ECDSA key sent by the remote host is
SHA256:+DpRlEfHp3hwLOEZvLArDwiPya34r/4lNUubLW8Kcko.
Please contact your system administrator.
Add correct host key in /Users/coreyschafer/.ssh/known_hosts to get rid of this
message.
Offending ECDSA key in /Users/coreyschafer/.ssh/known_hosts:7
ECDSA host key for 192.168.56.101 has changed and you have requested strict check-
ing.
Host key verification failed.

```

### SSH-fail

```
$ ping 192.168.56.<other_machines_number>
```

- Now lets check if our host machine has access to both. Open terminal, and ping either machine.
- Now lets check if we can ssh into either machine.

```
ssh <username>@<machine's IP>
```

\* Now this might happen:

```
Lawrences-MacBook-Pro:~ lawrencelee$ ssh lawrencelee@192.168.56.1
ssh: connect to host 192.168.56.1 port 22: Connection refused
```

\* This means you probably do not have Open SSH installed, a SSH server.  
 \* BOTH MACHINES: Run `sudo apt-get update` and `sudo apt-get install openssh-server -y`  
 \* If you did happen to have it installed and were still not able to connect try restarting the  
 `sudo service ssh restart`.

- Now try shh-ing in again.
- Once ssh-ed in, try uname -a to verify details about the machines OS (i.e. OS version, date it was initalized, etc.).
- Should you encounter the following error:

This can occur if you've been messing around with a few different machines, and you get to the point that you need to remove your keys belonging to a hostname from a know hostfile. \* To remedy this type the following:

```
$ ssh-keygen -R <ip address of machine>
```

This removes the old key and stores it in a file, and then generates a new one. \* Now have VirtualBox create snapshots for either machine (TURN OFF MACHINES FIRST). \* Set their names to SSH Setup, and place their static IPs in the description.

Lets make it so we can ssh in to our machines using their hostname. \* On your local machine, type sudo nano /etc/hosts. \* In the file add:

192.168.56.3      ubuntu-1  
192.168.56.2      ubuntu-2

- Now we should be able to ssh in like so:

```
$ ssh <usr name>@<hostname>
```