

## Create a VirtualBox virtual machine

- Use Ubuntu Server 12.04 32-bit, an image is available in /nfs/faculty/crandall/Public/
- 128 MB of RAM
- Dynamically expanding 8GB hard drive (default)

## Edit configuration of VM

- Add install CD under Storage
- Disable audio
- Leave Adapter 1 as NAT
- Disable USB controller

**IMPORTANT: Make sure “Use host I/O cache” is checked for the hard drive SATA controller**

**IMPORTANT: Do NOT configure remote desktop**

## Click start to boot

- Select "Install Ubuntu Server"
- Select eth0 as the primary network interface
- Select “Guided – use entire disk”, no need for LVM
- Don't encrypt your home directory
- Just hit enter when it asks about an HTTP proxy
- Choose to install the OpenSSH server
- Say yes to installing GRUB on MBR

## Boot for the first time

- Do a “lshw –class network” and a “cat /etc/udev/rules.d/70-persistent-net.rules” to sanity-check
- Do a “sudo apt-get install openssh-server” if you forgot to install SSH before
- Do a “sudo apt-get update”
- Do a “sudo apt-get dist-upgrade”
- Shutdown

## Make clones

```
setebos:~/VirtualBox VMs/Ubuntu1> VBoxManage clonevdi Ubuntu1.vdi Ubuntu2.vdi
```

Create a new VM with the same settings as the first (name and MAC addresses have to be different, of course)

## Boot your VMs

“sudo vim /etc/udev/rules.d/70-persistent-net.rules” to configure the hardware, NIC 1 should be eth0, NIC 2 should be eth1, etc., and you need to update this every time the hardware configuration changes.

“sudo vim /etc/network/interfaces” to configure networking, see screencaps below

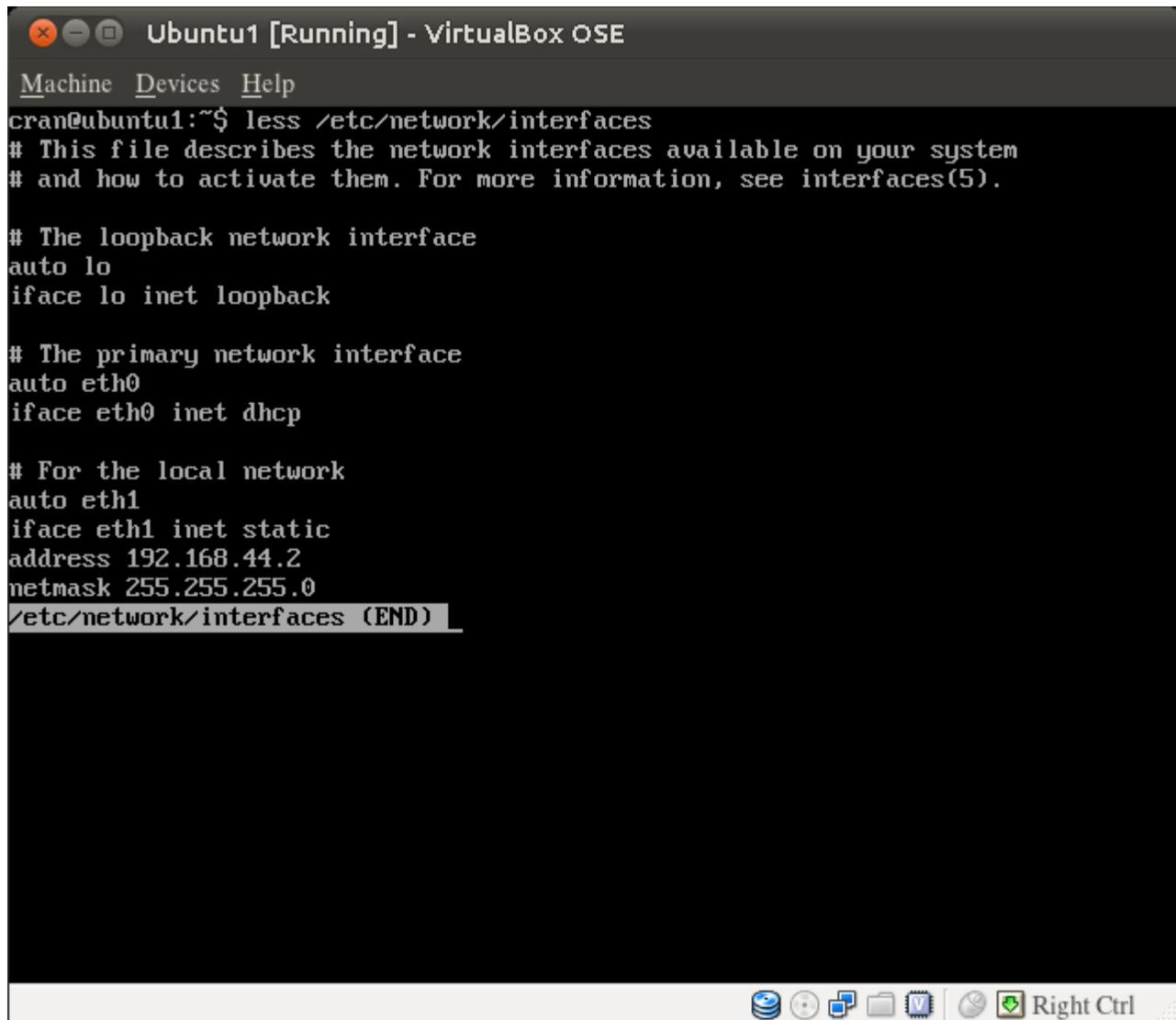
Shut your VMs down and add NICs necessary to connect them, then boot them up and configure them. When your network is all set up you should be able to ssh from one machine to the other, if not ARP is the first place to start debugging. The screencaps below are for last year's configuration, you can refer to them for syntax but you'll need to figure out the right configuration for what you're trying to accomplish.

```
Ubuntu1 [Running] - VirtualBox OSE
Machine Devices Help
cran@ubuntu1:~$ less /etc/network/interfaces
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto eth0
iface eth0 inet dhcp

# For the local network
auto eth1
iface eth1 inet static
address 192.168.44.2
netmask 255.255.255.0
/etc/network/interfaces (END)
```

A screenshot of a VirtualBox OSE window titled "Ubuntu1 [Running] - VirtualBox OSE". The window shows a terminal session where the user has run the command "less /etc/network/interfaces". The terminal output displays the contents of the "/etc/network/interfaces" file, which defines network interfaces: "lo" (loopback), "eth0" (primary network interface using DHCP), and "eth1" (local network interface with static IP 192.168.44.2 and netmask 255.255.255.0). The terminal prompt is "cran@ubuntu1:~\$". The window has a menu bar with "Machine", "Devices", and "Help". At the bottom of the window, there is a taskbar with icons for a database, a smiley face, a folder, a monitor, a clock, and a "Right Ctrl" button.

Ubuntu2 [Running] - VirtualBox OSE

Machine Devices Help

```
cran@ubuntu2:~$ less /etc/network/interfaces
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto eth0
iface eth0 inet dhcp

# For the local network
auto eth1
iface eth1 inet static
address 192.168.44.3
netmask 255.255.255.0
/etc/network/interfaces (END)
```

 Right Ctrl

**General**  
Name: Ubuntu1  
OS Type: Ubuntu

**System**  
Base Memory: 128 MB  
Boot Order: Floppy, CD/DVD-ROM, Hard Disk  
Acceleration: VT-x/AMD-V, Nested Paging

**Display**  
Video Memory: 12 MB  
Remote Desktop Server Port: 9999

**Storage**  
IDE Controller  
IDE Secondary Master (CD/DVD): Empty  
SATA Controller  
SATA Port 0: Ubuntu1.vdi (Normal, 8.00 GB)

**Audio**  
Disabled

**Network**  
Adapter 1: Intel PRO/1000 MT Desktop (NAT)  
Adapter 2: Intel PRO/1000 MT Desktop (Internal network, 'intnet')

**USB**  
Disabled

**Shared Folders**  
None

**Description**  
None

**Preview**  
