CS 361S - Network Security and Privacy
Spring 2017

VM Setup Guide

The objective of this document is to get your virtual environment set up on your machine, in preparation for Project #1 and Project #2, as well as ironing out any issues that you might have. You will do this project, and all later ones, using VMWare Workstation Player 12.5 or VMWare Fusion (OS X). Since VMWare Player is not available, nor will it be installed on, the UTCS machines, all projects must be done on your own machine.

You will need:

- VMWare Workstation Player for Windows or Linux: http://www.vmware.com/products/player/playerpro-evaluation.html

  OR

- VMWare Fusion for Mac OS X: https://www.vmware.com/products/fusion/fusion-evaluation.html (Note: Neither of the instructors have Macs to test this. Students in the past have had success importing the VM in VMWare Fusion or Oracle VirtualBox)

- X Window System:

  Microsoft Windows: http://sourceforge.net/projects/vcxsrv/

  Apple Mac OS X: http://xquartz.macosforge.org/landing/

  Ubuntu Linux: Install xorg and optionally a window manager.

  OR

- Xming for Windows: https://sourceforge.net/projects/xming/

- Project #1 Virtual Machine (VM) Images:

  Part 1:
  https://cs.utexas.edu/~ojensen/courses/cs361s/vms/cs361s-proj1-2017.ova

Getting Started

1. Download VMWare, the X Window System, and the project images. Install VMWare and the X Window System.

2. Import the VM into VMWare Player/Fusion.

   Note: You are allowed to use whatever virtualization product that you want. However, support will only be provided for VMWare Player and the correctness of your submissions for future projects will be based on their execution in VMWare Player.

3. The machine has two accounts: root/root and user/user. You will do your work as user, but feel free to explore as root.

Setting up Networking

The VM is configured to use a host-only virtual network adapter. You will verify that you can interact with the VM over SSH. Perform these steps for both VMs.

1. Start up your VM and log in as root. Type ifconfig to see the IP address of the VM. It should be listed in the field inet addr: under eth0.
2. The VM also has an SSH server. SSH into the VM from your machine, using the IPaddress produced by ifconfig (see above) as the destination. You can also use this to transfer files into the VM using scp.

Note: If you don't get an IP address and/or aren't able to SSH into your VM, you may need to experiment with your network configuration. This can be done by selecting the VM, choosing Settings, Network, Adapter 1, and changing the Attached to: option. You will need to reboot the VM after each change (using reboot in the VM console window). **Do NOT use the** Bridged Adapter **option, unless you understand the security implications!**

Using SSHFS (Optional)

Normally, to copy files to/from the VM, you would need to use scp. For convenience, you can instead use sshfs to "link" the VM's filesystem with a directory on your host machine.

1. Install the sshfs package on your *host* machine and create an empty netfs directory.
2. Run sshfs root@[VM IP address]:/ netfs and enter the VM's root password. You can now access the VM's filesystem via the netfs directory with your host machine's applications.

Project 1

We need to ensure that you are able to interact with your VM's version of Firefox, the web browser present on the VM for Project #1.

1. Power on the VM for Project #1.
2. SSH into your VM with X11 forwarding enabled (from your *host* machine):

   ssh -X user@[VM Part #1 IP address].

3. Run firefox & to bring up the web browser.
4. Browse to: http://dncmail.org/(accessible only from within the VM, of course).
5. If you can see dncmail.org, you should be good to go.