

CSE 523S: System Security

Homework #1

The purpose of the homework is two-fold. First, by following the steps below, you will prepare your computer for the work we will be doing in CSE 523 this semester. Second, you will begin the habit of keeping careful, repeatable notes to document your work.

Your homework submission will be a report describing the steps you took to download, install, and configure the [SEED Ubuntu 20.04 VM](#) on your computer. You should configure your VM so you'd be able to copy and paste to and from your host machine. Please also configure `~/.bashrc` to display the *date* and your *name* in the terminal prompt, as shown in the screenshot below:

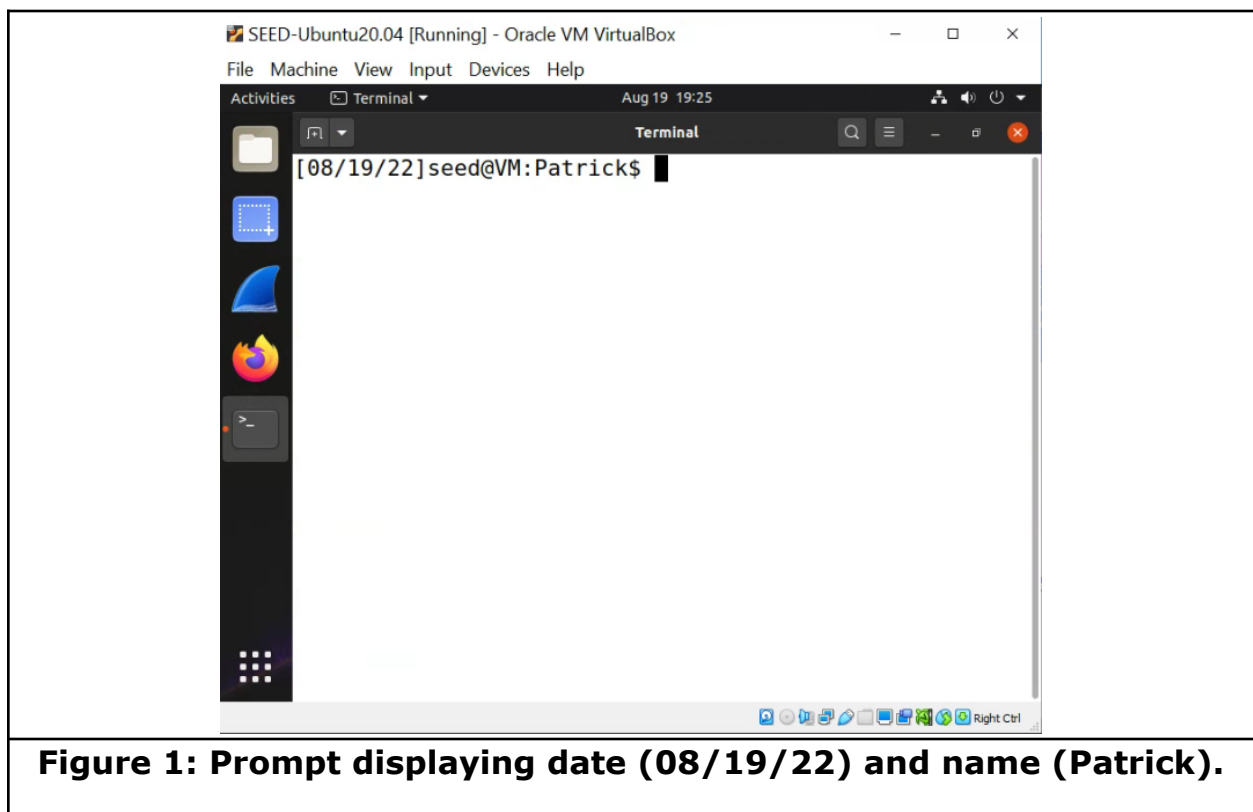


Figure 1: Prompt displaying date (08/19/22) and name (Patrick).

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You can display your first or last name, or a combination of the two. When done, please take a snapshot of your VM as it is sometimes helpful to have a working backup in case something goes wrong. Please read [this](#) if you need to learn more about snapshots.

Grading rubrics

It is possible that this is the first time you have been asked to write a report like this. It can be tricky at first, but you will get better as you practice. We provide the grading rubric below to give you a sense of what we are looking for in the report. You can see that the grading rubric items correspond to the homework tasks given in the instructions. This will be true for future homework assignments as well.

This assignment is worth 5 points, with the following breakdown:

Possible points	Rubric item
2	Successful installation and configuration of the VM. You must include a screenshot showing your prompt to get this credit.
1	A snapshot was taken. Take a screenshot of your snapshot.
2	Sufficient documentation and repeatable notes. Hence, <i>someone</i> * else can reproduce your work. * <i>someone else refers to another student taking this course, not a random person who never used a computer before.</i> <i>You don't have to provide basic instructions such as how to open a browser or how to open a folder.</i>

Learning how to document your work will serve several ends. First, it will function as your turn-in for homework this session. Second, it will allow the TA and I to help you whenever you need it, and to see exactly where you might be stuck. Third, security work requires a systematic, patient, and detail-oriented mindset, and maintaining your notes in this way will get you started down this path (if you aren't on it already).

Tips and pointers

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Configuration tips:

- You can find SEED Ubuntu VM configuration guidelines [here](#).
 - Note: you do not have to follow all the steps in this document, but you will want to pay attention to the 'Bidirectional' configuration.
 - Do not copy the instructions from the document. Use your own words and voice. It is recommended, but not required, to write in first person.
- If you already have the latest version of VirtualBox installed, you don't need to reinstall it. Instead, explain that you have it. If you don't have VirtualBox installed, make sure to describe the steps you take in your report.
- "`source ~/.bashrc`" may be a useful command.

Report tips:

- When describing your steps, it can be helpful to include screenshots. You should ask yourself whether an instruction can be clearer if it is accompanied by a screenshot. Please **do not** include a screenshot for every step you take! Your words and description are important.
- You can include screenshots in two easy steps.
 1. **Capture the window/screen you want.** On Windows, select your window, press Alt-PrtSc. On Mac, press shift-control-command-4 and then draw a rectangle around the area you want to copy. Once you have the image in your clipboard, you can copy-paste it into this document; once the image is in the document, you can crop or resize as needed.
 2. **Create a table to hold the image and caption.** Use Table->Insert table to add a 1-column, 2-row table. Copy-paste your image into the top row; resize the image so that it fits on your page. Add your caption to the second row in the table. Use Table->Table properties to set the table border to 0 pt, unless you like seeing the grid lines.
- Your report doesn't have to be lengthy to be good. Try to be concise but informative.

You can find an **example** of a partial report from an old offering of the course below. Please note:

- The example uses a different VM setup, so **DO NOT follow these**

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instructions.

- The example is partial, not complete (e.g. it does not include screenshots).

The example is provided to give you a sense of the level of detail required and an acceptable writing style.

EXAMPLE BEGIN (OLD REPORT - DO NOT USE THESE STEPS!)

1. Install VirtualBox

Install the [latest version](#) of VirtualBox (6.1.2 as of January 2020) on your computer. If your CPU supports VT-x or AMD-v, you may need to enable it. (Note that sometimes you have to make a change to my laptop's BIOS, power down, remove the battery (!), replace the battery and then reboot for VT-x to be enabled.) Mine was already enabled.

2. Create a new Ubuntu Virtual Machine

We will create an Ubuntu virtual machine in this section.

Download the [Ubuntu 14.04.6 LTS Desktop.iso](#) (**Use the 14.04 64 bit desktop version**) file at the linked URL. Feel free to view the alternative downloads if you'd like to torrent the download. Also, while it is nice if you want to donate, please note that it is freely provided if you click *Not now, take me to the download!* at the bottom of the contribute page.

In this document, you will learn to configure a virtual machine from an image format like .iso. Here are the guidelines for once you've downloaded the .iso file:

1. Open VirtualBox
2. Click the "New" icon
3. Enter a name for your VM and select the proper type and version.
 - a. If you name it something with "Ubuntu", the type and version will be automatically gathered.
4. On the next screen, enter the amount of RAM you want to dedicate to the virtual machine. You are welcome to do more, but at least 1024

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MB is strongly recommended.

5. On the next screen, we will create a virtual hard disk now.
 - a. Select .vmdk as your format.
 - b. Dynamically allocated is fine. Please do 20 GB.
6. After this, your virtual machine should be created, but it is not configured for use.

To configure the virtual machine:

1. Select your newly created virtual machine and click "Settings".
2. Under "Storage", select the Empty disk under "Controller: IDE"
3. Click the CD image next to "Optical Drive: IDE Secondary Master" and select "Choose Virtual Optical Disk File"
4. Navigate to your Ubuntu 14.04 .iso file and select open.

EXAMPLE END

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