CSCI 476: Computer Security

Fall 2022

Lab 0: Getting Started and Lab Setup

Objective:

This assignment is meant to be a low stakes way to introduce you to this course and some of the technologies we will use. You may have opportunities to complete parts of this assignment in class, but you should plan to work on this outside of class as well. Of particular importance, by the end of this assignment you should be setup with a suitable environment for completing assignments for this course.

Task 1: Course Questionnaire

Please fill out the course questionnaire for 476:

Link: https://forms.gle/poFTc4QqeR9iC5P96

(There are some issues with accessing this form while on the MSU network. If you encounter this problem, try accessing the form on your home network or on your phone)

Task 2: Join Discord

Join our class Discord. That is where I will be posting announcements and discuss security stuff.

Link https://discord.gg/EZtTd43kgk

Please change your nickname on the server to your name along with the classes you are taking. Give

Example: Reese Pearsall (476, 466), Susan McCartney (466), etc.

Then give yourself the CSCI 476 role by going into the `#role-spam` channel and type `!join-476`

If you have the default Discord profile picture, you should change it to something cool!

Task 3: VirtualBox & The SEED VM

1. Install VirtualBox on your machine. Select the relevant download for your OS and architecture under "VirtualBox X.Y.Z platform package"
    a. VirtualBox installation website: https://www.virtualbox.org/wiki/Downloads
2. Follow the SEED VM setup instructions to configure your VM.
    a. From https://seedsecuritylabs.org, I recommend Approach 1: Use a pre-built SEED VM under the Ubuntu 20.04 VM section
    b. Download SEED-Ubuntu20.04.zip *(The download will take a bit)*
    c. Unzip it, and you should be able to see a folder.
    d. Then follow the "Install SEED VM on VirtualBox" manual.
3. To log in, the password for the SEED user, is `dees`

Task 4: Running a basic Python program

1. On your new SEED labs VM, you should create a Lab 0 folder within your home directory. This is where you will keep your files from lab 0. In general, I recommend creating a new directory each time you start a new lab.

    `mkdir Lab0`

2. We will first create a basic "Hello World" program in Python. You can create any new file using the `touch` command

    `touch hello_world.py`

3. Next, lets add the necessary code. You can do this in any text editor, such as VIM, Emacs, Nano, or just Text Editor GUI

    `vi hello_world.py, emacs hello_world.py, nano hello_world.py`

    (If you want to use a text editor other than vi, you will need to install it)

```
#Lab 0 Running a Python program example
print("Hello World!")
```

4. In the command line, run the command `ls -l hello_world.py`. This will show you the file permission for the python file you recently created.

```
[08/25/22]seed@VM:~/lab0$ ls -al
total 12
drwxrwxr-x  2 seed seed 4096 Aug 25 14:21 .
drwxr-xr-x 19 seed seed 4096 Aug 25 14:21 ..
-rw-rw-r--  1 seed seed   52 Aug 25 14:21 hello_world.py
```

(note: Python only requires file contents to be read to run a program, which is why you don't see the "x" permission)

5. To run your python program, you can type the command `python3 hello_world.py`
6. Record your output and include a screenshot in your submission

Task 5: Running a basic C program

1. In your lab 0 folder, we will follow the exact same process, but for a C program

```
touch hello_world.c
```

2. Now add the necessary code with your text editor

```
#include <stdio.h>
//Lab 0 Running a C program example
int main() {
  printf("Hello, World! \n");
 return 0;
}
```

3. Unlike Python, we must now compile the C program before we can run it

```
gcc hello_world.c -o hello
```

4. You should now see a new executable file got created in your lab 0 directory

```
[08/25/22]seed@VM:~/lab0$ gcc hello_world.c -o hello
[08/25/22]seed@VM:~/lab0$ ls -al
total 36
drwxrwxr-x  2 seed seed  4096 Aug 25 14:37 .
drwxr-xr-x 19 seed seed  4096 Aug 25 14:27 ..
-rwxrwxr-x  1 seed seed 16704 Aug 25 14:37 hello
-rw-rw-r--  1 seed seed    75 Aug 25 14:27 hello_world.c
-rw-rw-r--  1 seed seed    52 Aug 25 14:21 hello_world.py
```

5. Run your program

```
./hello
```

6. Record your output and include a screenshot in your submission

Submission

Include any relevant screenshots for each task in your submission. Be sure to include your name in the filename and at the top of your lab report.

Submit to the Lab 0 D2L dropbox as a PDF