

Homework #6

COS 231 Summer 2004

Due Date: July 30, 2004

Since it appears that people are working through the material more slowly than I anticipated, I believe that there will only be time for one additional homework this summer. For this reason, this will be the last homework I will assign. I hope that this will enable most people to finish the course on schedule.

I have decided to drop the various late penalties in the interests of encouraging people to finish the course. Please communicate with me and Jeremy Logan if you have questions about the course. I will be away from e-mail for the next few days, so be sure to send a copy of any e-mail that you send to both me and Jeremy.

This homework has three parts: posting your website; basic computer security; simple scripting. Once you complete the homeworks assigned this summer, you will have a very solid background in unix/linux that should prepare you for further study. You can submit the result as one long file if you wish, or break it up into separate files if you wish.

Part I: Posting Your Website.

I will e-mail each of you a user ID and password to a user account on the Computer Science Department server: gandalf.umcs.maine.edu. You can ssh to this account from linux following using

```
ssh -l ... gandalf.umcs.maine.edu
```

where ... indicates the place to put your userid. If you do not get an e-mail with your user ID and password, please contact me and Jeremy Logan immediately.

The first time that you logon you should change the password. If you do not have a subdirectory called public_html, you should create it. Make sure that the attributes for this directory are set to drwx--x--x. Any file that you expect users to see needs to be set to -rw-r--r-. Files that run CGI scripts (we will not have time to cover these) will also need execution permission.

Once you get the directory properly set up (if it is not already properly set up), you can use a secure file transfer protocol to transfer the website you created for Exercise 8 of HW #4 to your account. Once the website is transferred make sure that everything works correctly. In particular, you should be able to access it using:

```
http://www.umcs.maine.edu/~YourID
```

You should make sure that you have a file called index.html as the homepage for your website.

Part II Computer Security

Please answer the following questions using your textbook and whatever resources you need to use from the WWW. As before, please give a reference to any resources that you use.

- a. What are ports? How are they used? What are some of the most common ports that are used for various unix services? How can you enable or disable ports? How can you tell which ports are active on a computer? What ports are active on your linux system at the time that you first learned about ports and how to get useful information about them?
- b. What does the program PortSentry do? Where can you get it? Install it on your computer and include a copy of the output that it produces. Describe the process you followed to install PortSentry on your computer.
- c. What is a firewall? What sort of a firewall does your linux system have active at the time that you first read about firewalls? Are you happy with your firewall? If not, how will you change it?
- d. What does the program Tripwire do? Where can you get it? Install it on your computer and include a copy of the initial output that it produces. Modify a file so that you cause Tripwire to spot this change. Include a copy of the output that spots the change. Describe the process you followed to install Tripwire on your computer.

Part III Scripts

Go to the following website:

<http://goforit.unk.edu/unix/unix13.htm>

and copy the webpage into a file. Then work through the file and answer all of the questions and do the exercises. Submit the finished file with your work in it. There is more material available on this website, but you are not required to work through it for this homework.

Feel free to consult any other sources that you need in order to finish this homework.