

## Instructions

Complete the problems assigned below and turn in your answers by start of class on the due time above. Please feel free to email your homework or bring it with you to class.

Answer the following questions. This will require you to fully explore and learn the concepts and behavior of the commands presented in the lecture and text. Show the command used to answer and command as well as the output.

1. You are to complete the small script below, such that it creates several user accounts. The script takes a single argument, which is the name of a file that contains a list of login names and UIDs, one name and UID per line. The script uses the **useradd** command to create each account. The login names and UIDs are supplied in the file named **names**; passwords should be set to the string ' \$1\$et0EX8CV\$Ze0VQbx9pW73H0Fc8dc2A/' (be sure the quotes are used and that the string is exactly copied); the group will be **cis68c1** which is GID **4321**. You will need to be sure the group exists first in **/etc/group**. You are to use the **-m**, **-p**, **-u**, and **-g** options for **useradd**. Save the code segment below to a file named **addusers** and make the file executable - it will allow you to read from the file of name/UID pairs. The **#!/bin/bash** line must be the first line in the file. Complete the line that has the command **useradd** with the correct arguments.

```
#!/bin/bash

while read login uid; do
    # $login is the login name
    # $uid is the UID
    useradd ... # complete this line
done < $1
```

You will invoke your script as follows:

```
# addusers names
```

where **names** is the list of login/UID pairs. This should create an account for each user in the **names** file. The password should be **password**. Try logging in to a couple of the accounts to be sure they are created correctly. Also, look at the files in the home directories to see what was copied. If everything works successfully, anyone in the class should be able to login to your machine using their own Foothill UNIX account login name. The file **names** is available on the class website under the Files section. You can recreate this file yourself with the command:

```
niscat passwd.org_dir.ctis.foothill.fhda.edu | grep cis68c1 | awk -F: {print $1, $3} > names
```

Hint 1: place the command **echo** in front of the **useradd** command to echo what would happen. Then, when you are ready to run the command, remove the **echo** command. Hint 2: create a second copy of the script, named **delusers**, but replace the **useradd** command with a **userdel -r** command. This will remove the accounts listed in **names**, to help you test your command.

2. Write a **crontab** entry that runs every evening at 2:35am that issues a command to remove the files **core** or **core.#** (where # is any number of digits) from the local filesystem (not networked filesystems) that have not been accessed in the past 5 days. Be certain not to remove the entry **/dev/core**, which is a legitimate entry and should remain.
3. Write a crontab entry that runs every evening at 11:49pm that issues the command(s) necessary to rotate the log file **/var/log/boot.log** → **/var/log/boot.log.1**, **/var/log/boot.log.1** → **/var/log/boot.log.2**, etc. where larger numbers are older log files. Keep up to 10 files (1-9, plus the original), and remove any older files. You may find it easier to use a small shell script to perform the rotation. Hint: work on the oldest files first, and then proceed to the newer ones. Do not use the **logrotate** utility.
4. What are the TCP port numbers for **gopher** and **finger** commands?
5. What is **portmap** and **comsat** and what do they do?
6. What is the broadcast address for the IP address 110.202.43.19 with netmask 255.255.0.0?

7. Give the command(s) that you would run to change the IP address of your system. Do not change any configuration files.
8. What is the file **wtmp** used for and where is it located? Which utilities use it?
9. Write a command that will kill *all* of your processes. Hint: `awk '{print $2}'` will be useful as will backquotes. Also, place an `echo` in front of your command to avoid actually killing all of your processes while you try out your command! It would be best if you can make the command generalized so that others could run the same command and it works correctly without modification.
10. How do you boot Linux directly into single user mode?
11. What is a multicast address?
12. If you run the command:

```
telnet losaltos.fhda.edu 21
```

you get an **ftp** connection and not a **telnet** connection - why? Try it. You can type **quit** to exit.
13. What is a multicast address?
14. What command do you run to set the name of your system?
15. What command do you run to see the status of your **eth0** network interface?