

CSCI 3751 Fundamentals of Unix

Homework #1 (40 points)

1. Objective:

The objective of this assignment is to practice basic Unix commands and cultivate a deeper understanding of Unix environments.

2. Recommendations:

- We advise execute and confirm each command individually before combining them with the **'script'** command.
- To compile a comprehensive log of all activities undertaken in this assignment, complete all tasks in a single login session. If errors or typos occur, simply correct them and re-enter the command.

3. Preparation steps:

- 1) Ensure your working environment is configured for access to the “**csegrid**” server. If you have not set up your work environment to access “**csegrid**” server, refer to the “**CSE_Grid_Tutorial.pdf**” document in the Week 0 and 1 Modules.
- 2) First, initiate a network connection via VPN (global connect). This step may be omitted if you are already connected to the UCD campus network
- 3) Connect to **csegrid.ucdenver.pvt** via SSH. This server is a Linux machine acting as a load balancer in the CSE department’s Linux cluster. The effective node you logged in will vary based on a round-robin order. Refer to section 2.4, CSE Grid Server Configuration, for more detail.
- 4) Upon login, you should be in your home directory, where your homework begins.
- 5) Ensure you are on **csci-gnode-02** server. If not, run **'ssh csci-gnode-02'**
- 6) First type **script** at the command prompt. This command will log all subsequent interactions to a file named **"typescript"**. You will see a notification: **"Script started, file is typescript"**. Experiment with this command.

Begin by specifying your own file name as follows:

```
$ script hw1-[your last name here].txt)
```

4. Tasks: Please follow the directions in the order specified below. Your activities (the commands and their output) will be automatically logged in the specified *script* file.

- 1) Display the current time and date.
- 2) Show the calendar of the current month of this year.
- 3) List all the users currently logged into the current server.

- 4) Show your login process ID and its parent process ID.
- 5) Display the current working directory. Be sure you are in your HOME directory.
- 6) Create a new directory named "**csci3751**" under the current directory.
- 7) Change the current working directory to "**csci3751**".
- 8) Copy the tar file, "**/var/tmp/CSCI3751/src.3e.tar.gz**", to the current directory.

Note: "**src.3e.tar.gz**" is the tar file of example source codes of our class textbook. They will be used throughout the semester.

- 9) List all the files including **hidden** files in the current directory using **long** format.
- 10) Unzip and **untar** '**src.3e.tar.gz**' into the current directory (Tip: you can unzip and **untar** the file in one command execution)
- 11) Display the name, file size, created date, permission, and ownership of the extracted files.
NOTE: They should be displayed in **descending order of file creation date**.
- 12) Using "**find**" command, find all the file names containing "ak" substring in the file names under the current directory and its subdirectory. The result should be saved into the file, "**find-result**".
- 13) Count the lines in "**find-result**" and append the count number at the end of "**find-result**" file
- 14) Change the file name "**find-result**" to "**find-result.txt**" and move it to your login home directory but your current directory should remain the same.
- 15) Display the file details of your home directory from the current location using relative path.
- 16) Create a soft link of "**find-result.txt**" of **HOME** directory to "**.find-result-clone**" in the **current directory**.
- 17) Show file information, including **inode** details, of "**find-result.txt**" in HOME directory and "**.find-result-clone**" using the same '**ls**' command
- 18) Display the current date and time.
- 19) Exit the 'script' session (press **CTRL-D**)
- 20) Upload the log file (e.g. **hw1-<last name>.txt**) to Canvas.
- 21) You are done!!

5. Deliverable:

1. Upload your log file (the output file, **hw1_<last name>.txt**)
2. **\$HOME/find-result.txt**