Laboratory #5: File permissions, redirection and searching

Unix (420-321-VA) - Winter 2021
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Goals:

1. Practice file permissions and redirection to files
2. Search for files in the file system tree
3. Consolidate studied commands

Instructions

For your lab report, keep the record of every command you run in each task. You only need to show the output if explicitly asked.

Part I: File permissions

1. Print the string “dateee” and redirect the output to the file lab5.sh.
2. Use *chmod* to add execution permissions to the file.
3. Execute the file with “./lab5.sh”.
4. Use *chmod* to remove all permissions related to the file at once (read, write and execute).
5. Add permission to read and write only to the file owner, using both methods (letters and numbers).
6. Add execution permission only for the owner and group.
7. Use the command *adduser* to create a new users *“john”* and *“peter”*. You need admin power for that. Add only user john to your own user group.
8. Use *“su john”* to change user, then “./lab5.sh” as *john*. Record your command and output. Explain.
9. Use *“su peter”* to change user, then “./lab5.sh” as *peter*. Record your command and output. Explain.
10. Go back to your user, and change the file permissions in a way that *peter* will also be able to execute the script.

Part II: File redirection

1. Once again you will run the script lab5.sh, but this time you’ll redirect the error output to the file error.txt. Describe what you see in the terminal and in the file.
2. Now make sure you are logged in as a regular user (not root), and run the command “find / -name gnu”. No need to report the output, it will be big.

3. Run the same command again, but this time redirect the error messages to the file error.txt. Instead of overwritting the error file, just append content to it.
4. Copy the output of your command in your report.
5. Run the same command again, but this time redirect only the output lines to the file output.txt. Describe what you see in the terminal and in the file.
6. Last time you'll run the command, redirect both output and error to the file all.txt.
7. Did you get any output in the terminal this time?

Part III: Searching for files

11. Find all files in your filesystem containing the string GPL in their name.
12. Combine with another command to see how many files you found.
13. Do the same search, this time case-insensitive. Again, check how many files you've got.
14. If you were using *find*, try to perform the same search using *locate*, and vice-versa. Can you tell which one is faster?
15. Use shell commands to count how many files there are in the folder /*usr/*bin.
16. Now use a command to count files inside /usr/bin with the permission 755.

Part IV: Commands table

It is time again to send your updated table of commands. This time, please highlight commands you need some help to understand, if there are any. Make sure you include the following list of commands and options:

chmod (ugoa +/- rwx)
chmod – octal system (0-7): 1=execute; 2=write; 4=read
zip (-r -sf)
unzip (-l)
date (-u, +"Year: %Y, Month: %m, Day: %d", -d 20210105)
ncal (-h -b -j)
head (-n)
tail (n)
exit
passwd
who, w
whatis
ln (-s)
file (-f)

hostname
uname (-a)
uptime
type
id
adduser
deluser
history
grep
diff
sort
wc
whereis
find
locate

Part V: Deliverables

1. Open LibreOffice to create your lab report.
2. Include a header with course name, section, your student name, the license of your work.
3. Include all commands needed to perform tasks in parts I, II, III as well as output if requested.
4. Include your updated table of commands. Highlight any command you need some help to understand.
5. Export your file as PDF and upload it to Omnivox.