# COMP1562, Lab #9 Selected aspects of Linux system administration

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**(by M. Pelc and K. McManus)**

**Description:**

**This week task is in whole related to selected aspects of Linux system administration.**

**Learning Outcomes:**

**Students will be able to understand how selected admin commands work and how some selected system files can be used to achieve specified administration goals.**

**TASKS**

In the next 2 weeks you will try to address the below Linux administration problems either, via executing appropriate system commands or via editing / modifying appropriate system files. Your solutions to the problems will have to be uploaded in a single TEXT file, each line of the file being answer / solution to the task / question specified. Each line has to start with the task number followed by system command (for the solutions requiring executing system commands) or line you would enter into shell / appropriate configuration file content (for the solutions requiring modification of appropriate system files) to achieve requested result.

For example, if task 3 was to provide command configuring network interface eth0 so that the IP address was 192.168.0.2, network mask was 255.255.255.128 and the broadcast address was 192.168.0.255, you would enter the line as:

3. ifconfig eth0 192.168.0.2 netmask 255.255.255.128 broadcast 192.168.0.255

And if task 6 required you to show how a line defining alias called ‘cp’ for command ‘cp -i’ you would enter into .**bashrc** file the following:

6. alias cp=’cp -i’

1. Which file you would use to redefine existing system variable **PATH** (provide full path)?
2. How you would redefine the **PATH** variable to add path to **/home/john/bin** directory?
3. Which file you would use to limit maximum number of logins for a user **mariusz** to 3 logins at a time (provide full path)?
4. How you would modify the above file to achieve the result (please show how the line you would add to the file would look like)?
5. You were requested to add to the system new user called **tatiana**. You want to execute the command adding the user to the system so that default shell for **tatiana** was be **/bin/sh** and her initial / primary group was **students**. How the command would look like?
6. One of the system users asked you to change his login name from **pm75** to **mariusz**. How you would achieve this (provide appropriate command)?
7. You want to add user **mariusz** to ACL (Access Control List) of file **/usr/share/ccsm** so that this use had read permission (assume the user does NOT belong to the file group nor he is the file owner).
8. You want to change current permissions for file **/usr/share/ccsm** to **rwxr--r--**. How the command allowing you to achieve the goal would look like.
9. You want to check your file system supports ACL. Which command would tell you this?
10. You want to create in the current directory symbolic link **ptr** to file **/usr/share/ccsm**. How the command allowing you to achieve this would look like?
11. One of the system users **clare** forgot her password. How the command initialising her password change would look like? Assume you execute the command as root (in other words: what command would root execute to change clare’s password).
12. Which file you would modify to add a new DNS server (provide full path)?
13. How would the entry (line) to the above file look like if the DNS server you wanted add to the system was **217.173.13.13**?
14. You want to execute **/usr/share/ccsm** script **every Sunday at 2pm**. How the **crontab** entry allowing you to achieve this would look like?
15. As system admin (root) you copied **/usr/share/ccsm** file to the home directory of user **ben**. Assuming user ben has his home directory in the default location for CentOS system, show how you would make the file to be owned by **ben** and belong to system group **students**?
16. You want immediately lock account for student **ben** (so that he was unable to login to the system) as it turned out he has fee hold status. How the command allowing you to achieve this would look like?
17. You want to check which process(es) running in the system is / are owned by user **ben**. How the command allowing you to achieve this may look like?
18. Suppose you have just finished a completely fresh Linux installation. However, after first system boot it turned out that it by default takes you to the graphical user interface login prompt (meaning the system boots by default into runlevel 5). Which file defines default system runlevel (provide full path)?
19. How you would modify the above file (provide whole line) to change the default runlevel to **3**.
20. You want to change default location for the users home directory from **/home** to **/home/users**. Which file you would use to make it a default setting (provide full path)?
21. How the entry (line) to the above file would look like.
22. You want your Linux server to request network settings for interface **eth0** from **DHCP** server. Which file you would use to force this (provide full path)?
23. How the entry (line) in the above file would look like?
24. As normal / standard Linux system user **mariusz** you spotted that you r default shell is Korn shell **/bin/ksh**. You definitely prefer BASH **/bin/bash** shell over Korn shell (**/bin/ksh**) so you want it to get changed **permanently**. However, you do not want to engage system admin to achieve this as you are perfectly capable to do it on your own. Which file you would modify (provide full path assuming default location for the user’s home directory)?
25. How the line allowing you to change your default shell would look like.
26. How would you interpret Heisenberg Uncertainty Principle in the context of wavelet analysis?

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| **Please mind that in each line you sould use single space character to separate commands, parameters, options, etc. No other characters should be used for the purpose, no double or triple space, etc. Scriptcheck will be expecting just one space characterand anything else will be treated as syntax error.**  **!!!Your solution is expected to be 26 lines long!!!**  **Wherever possible please try / test your solution using your virtual box environment (Linux) provided BEFORE uploading to scriptcheck so that you were sure that the solution you provide is very likely to be correct.** |

**Techniques/resources:**

**Solution of all the above tasks does not require anything except scriptcheck system to enter solutions and calculator to for calculations.**

**Marking:**

**The solutions will be marked in the range 0-100%.**

**Deadline:**

**The solutions should be delivered within TWO week from the lab date.**