Informatics for Astronomers - WS2019

Miguel Verdugo, Gerald Mosenlechner, Roland Ottensamer, Leopold Haimberger

Exercise sheet 2 - Linux Basics

Your preparation of exercises should include two aspects:

(1) Try to present exercises in a way that everyone can follow (even if that person didn't do the exercise at all), so please explain all the (vital) parts of your solution in a slow and comprehensive way.

(2) Try to also include some background information where applicable, and/or explain the possible context/motivation for the given exercise.

Please strive for that in all exercises to come. From now on this will also be part of the assessment.

---

1. An important characteristic of Linux is the strict handling of (user)permissions. Enter `ls -l` and explain the output. How can file/directory permissions (`rwx`), and user/group membership (of files/directories) be changed?

2. What are processes under Linux? How can you get a good overview over currently running processes (in a Linux terminal)? What do the most important parts of the output of `top` or `htop` mean?

   - How do you terminate a program in Linux?

3. Use `ssh` to connect a server (e.g. `login.univie.ac.at`).

   - Use `scp/sftp` to download/upload files

   What `ssh/scp/sftp` stands for? Why?

4. How can you find which filesystems you have in your computer? What is the difference between filesystem and hard drive? How can you find how much space your files use in the hard drive?

5. Redirect the output of the command `ls` to a file. What is the difference of an output redirection with > compared to one with >>?

   - Try to come up with a reasonable use-case of the input redirection (<) and explain it

6. What does the pipe | do? Please explain it with few examples.