

# Appendix A

## Linux Commands

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> $FOAM_
```

**Bahram Haddadi**



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## Contributors:

- Bahram Haddadi
- Christian Jordan
- Michael Harasek
- Clemens Gößnitzer
- Sylvia Zibuschka
- Yitong Chen
- Vikram Natarajan
- Jozsef Nagy



Technische Universität Wien  
Institute of Chemical, Environmental  
& Bioscience Engineering



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cat, more, less	File viewer with pure read function - in order of ease of operation. In <b>less</b> with <b>pagedown/pageup</b> you can navigate within the file, with <b>/</b> and <b>?</b> can look for strings, <b>q</b> can be used for closing <b>less</b> . <b>cat</b> is back for universally available on Unix.
cd, cd ..	Changing the directory, <b>cd ..</b> goes one directory up and <b>cd ~</b> moves to home directory. Important to note is the space between <b>cd</b> and <b>..</b> as opposed to DOS!
cp, cp -r	Copying files or entire directory trees (with <b>-r</b> option). Caution: There is no warning or prompt when overwriting existing files! The important thing is that a target has to be always given, at least one <b>.</b> which means, copy to the current directory.
ctrl+r	Reverse search, for searching an already typed command in a terminal window.
du, du -s, du -k	Calculates the amount of space consumed in a directory. For safety reasons you should use the <b>-k</b> option (output in kilobytes), since some systems provide the space in blocks that include only 512 bytes ...
exit	Closing connection (terminal window).
gedit	Text editor with graphical user interface. When working with <b>gedit</b> some temporary files (originalFileName~) are created, they can be deleted after saving.
grep	Search command for plain-text data sets for lines matching a regular expression.
gzip, gunzip	Compression/decompression program for individual files (as opposed to <b>zip/unzip</b> , this can also work on directories or file lists). The great advantage of <b>gzip</b> : Fluent® and OpenFOAM® are able to read and write <b>gz</b> files directly, which saves about 30-90% space.
kill, kill -9	Stopping processes. For this the process ID is required, which can be found with <b>top</b> or <b>ps</b> . The <b>Exit</b> is irrevocable course - but you cannot shoot processes, if you are not the "owner".
ls, ls -la	Lists the contents of a directory, with option <b>-la</b> also hidden files are displayed, as well as the file size and characteristics.
mc	Program that enables navigation in the text window, esc-keys, may be necessary: <b>mc -c</b> , for navigating through mc use function keys or <b>esc+[number]</b> combination, e.g. <b>F9</b> or <b>esc+9</b> for moving to the menus at the top.

mkdir	Creates a new directory.
mv	Moving or renaming files and directories. Caution: There is no prompt when overwriting existing files!
Nano, pico	The command to run the <b>nano</b> text editor, a terminal based text editor.
passwd	The command to change the login password.
	It is known as pipe and is used for merging two commands, redirecting one command as input to another, e.g. <b>less grep</b> searches a specified word in the output of file opened with less.
ps, ps -A ps waux	Lists all the processes that were started in the respective command window with the options are all running processes on the system display.
pwd	Shows the current working directory.
rm, CAUTION: rm -fr	Deletes files. The option <b>-r</b> will also remove directories and files recursively and delete directories, <b>f</b> (force) prevents any further inquiry. - <i>Incorrectly applied, this command can lead to irreversible loss of all (private) data. There is no undelete or undo!</i>
rmdir	Deletes an empty directory.
scp	The copy command over the network - as secure FTP replacement. Also dominates the <b>-r</b> (recursive) option. Usage: <b>scp</b> source file destination file with source and the destination format can be USERNAME@COMPUTER.DOMAIN:PATH/TO/FILE. Source or target can of course also be created locally, then (your) user name and computer are not required.
ssh	Telnet replacement with encryption. On Windows, for example, implemented with putty.
tail, tail -f	File viewer, the default outputs the last 10 lines of a file. With option <b>-n XX</b> can spend the last XX lines, with the <b>-f</b> option, the command is running from those lines, which are attached to a file. The command is therefore perfect for watching log files.

top	Displays a constantly updated list of all running processes, with process ID, memory and CPU usage. For processes of one user <b>top [username]</b> should be used, and for quitting <b>q</b> or <b>ctrl+c</b> should be applied.
vi, vim	File editor. For forward searching use <b>/</b> , for backward searching use <b>?</b> . For exiting <b>esc+:x</b> . <b>nano</b> or <b>pico</b> are recommended for beginners, which are easier to handle.