

Tools SoSe 2026 – Exercises

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1 Exercises

1.1 Exercise: Linux

1.1.1 Hierarchical process termination

- Login to the Pool-PC in front of you using your UniID
- Open two terminal windows
- `gedit` on the first terminal
- Use the second terminal to find out the PID of the first terminal session
- Kill the first terminal session via the second session
- `gedit` should close as well

1.1.2 Basic input redirection

- Create a file with some words in it. Put one word per line. You can do this with e.g. `nano` or `vim`.
- Print the file to the command line with `cat`.
- Sort the file line-wise with the sort command, like: `sort < myfile.txt`

1.1.3 Pipes example

- There is a dictionary file located at `/usr/share/dict/words`
- We want only want to have the lines that match this:
 - Line starts with a capital N (help: use `egrep` with RegEx: `^N`)
 - Line does not end with 's (help: inverse match with RegEx: `\'s$`)
- We want to reverse-sort the result (help: study parameters of `sort`).
- We want to count the characters of the resulting output (help: study parameters of `wc`).
- The output should be a number!

1.2 Exercise: Authentication

1.2.1 SSH Keys

- Generate a keypair on your client machine (e.g. the pool computer or your laptop): `ssh-keygen -t ed25519`
- Add the public key to `$HOME/.ssh/authorized_keys` on `zitigate` and your target machine (e.g. `physik1.kip.uni-heidelberg.de`).
- Edit your ssh-configuration to use `zitigate` as a jump host to connect to your target machine.
- Verify if you can directly reach the target without a password.

1.2.2 Kerberos Authentication

- Log in to the pool PC in front of you
- Inspect the details of your Kerberos ticket
- Delete the ticket
- Recreate a new ticket

1.3 Exercise: Remote Desktop

1.3.1 Windows Terminal Server

- Open a terminal window on the pool PC in front of you.
- Create a desktop connection to `ts.ad.uni-heidelberg.de` using the `xfreerdp3` command.
- Hint: use the options `/u`, `/d`, and `/v`.