Tools at your end:
how to connect and get started
Logging in
Logging in: ssh (linux, MacOS)

- `ssh “secure shell” (ssh home page)`
- `terminal e.g.`

```
[mylaptop@home]$ ssh x_abcde@tetralith.nsc.liu.se
Password: **********
[x_abcde@tetralith]$ 
```

- `ssh functionality`
Logging in: PuTTY (Windows)

Host name in “Session tab”
Logging in: PuTTY (Windows)

- further reading

User name in “Data tab”
An alternative to username + password is **ssh keys**

When used correctly, **ssh keys can**:
- Be a convenience tool
  - And make life even easier using an **ssh config file**
- Improve your **account security**
Logging in: ssh keys

- **Example**
  a. Generate keys on local computer
  b. Copy the public key to HPC

- Be careful with file permissions
- Always use a key phrase when generating keys
An alternative to the terminal login is Virtual Network Computing (VNC) e.g. ThinLinc
Getting data to and from the cluster

- `scp`, `sftp`, `rsync` (Linux, MacOS)
- PuTTY, Filezilla, ... (Windows)

- Tips for transferring data across networks
Working on HPC: Getting started
Get started: Linux

- Learn to love the Linux command line
  - Online resources (cheat sheet)
  - `man pages` and `[command] --help`, e.g.
    - `$ man df`
    - `$ df --help`
# Command line shortcuts

<table>
<thead>
<tr>
<th>Command</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ctrl-c</td>
<td>Interrupt (kill) the current foreground process</td>
</tr>
<tr>
<td>ctrl-d</td>
<td>Close the shell</td>
</tr>
<tr>
<td>ctrl-l</td>
<td>Clear the screen in the terminal</td>
</tr>
<tr>
<td>ctrl-a</td>
<td>Go to the beginning of the line</td>
</tr>
<tr>
<td>ctrl-e</td>
<td>Go to the end of the line</td>
</tr>
<tr>
<td>left arrow</td>
<td>Go left one character</td>
</tr>
<tr>
<td>right arrow</td>
<td>Go right one character</td>
</tr>
<tr>
<td>ctrl-k</td>
<td>Cut the part of the line after the cursor</td>
</tr>
<tr>
<td>ctrl-u</td>
<td>Cut the part of the line before the cursor</td>
</tr>
<tr>
<td>ctrl-_</td>
<td>Undo your last key press</td>
</tr>
<tr>
<td>up arrow</td>
<td>Go to the previous command in the history</td>
</tr>
<tr>
<td>down arrow</td>
<td>Go to the following command in the history</td>
</tr>
<tr>
<td>ctrl-r</td>
<td>Search command history</td>
</tr>
<tr>
<td>ctrl-j</td>
<td>Stop history search and allow to edit command</td>
</tr>
</tbody>
</table>
Getting started: linux

- Tab completion
- Linux history
Some favorite linux commands
  - grep
  - find
  - type
Getting started: Convenience tools

- Persistent sessions
  - screen
  - tmux
  - ThinLinc