

## L4: The Shell



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## Command line

- COMMAND [OPTIONS]
  - | COMMAND pipe to another command
  - > FILE redirect to new file
  - >> FILE redirect to end of file

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## stdIO / stdOUT

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# Pipes

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# Process management

- ps
- suspend
  - CTRL-Z
- fg
- bg
- kill
- COMMAND & start in background

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# kill

- kill [PID]
- kill %[JOBID]

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### Filename exp[*a*]nsion

- echo "/etc/h"
- ? any character
- \* any number of ? (0..n)
- [abc] a OR b OR c
- [0-9] 0, OR 1, ... OR 9
- [1-39] 1 OR 2 OR 3 OR 9
- [0-3][0-9] 00 - 39
- [1-9] [12][0-9] 3[0-4] 1-34

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### Builtin commands

- tr
- tee
- bg
- fg
- jobs

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### SSH



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## Open SSH

- `sudo apt-get install open-ssh-server`

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## ssh, scp and sftp

- ssh remote terminal over secure channel
- scp secure copy
- sftp secure ftp

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## Example

- Demo

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## sshd

- To receive ssh requests you need a ssh daemon.
- Preferably you should change the standard port (22)

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## Example

- demo

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## Trouble shooting

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Tunneling/ port forwarding

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