# Advanced shell
# IT WS I - Lecture 7

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# Working remotely

- `ssh`

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- `ssh`
- `scp`

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- `ssh`
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- `rsync`

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- `ssh`
- `scp`
- `rsync`
- `passwd`

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- `ssh`
- `scp`
- `rsync`
- `passwd`
- Winscp (Windows based)

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- `ssh`
- `scp`
- `rsync`
- `passwd`
- Winscp (Windows based)
- Putty (Windows based)

# Working remotely

- `ssh`
- `scp`
- `rsync`
- `passwd`
- Winscp (Windows based)
- Putty (Windows based)
- SSH Secure Shell client (Windows based)

# Redirection

- $>$ $\rightarrow$ Send output to file

# Redirection

- $>$ $\rightarrow$ Send output to file
- $<$ $\rightarrow$ Take input from file

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- $>$ $\rightarrow$ Send output to file
- $<$ $\rightarrow$ Take input from file
- $2>$ $\rightarrow$ Send error output to file

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- $<$ $\rightarrow$ Take input from file
- $2>$ $\rightarrow$ Send error output to file
- $>>$ $\rightarrow$ Append output to file

# Redirection

- $>$ $\rightarrow$ Send output to file
- $<$ $\rightarrow$ Take input from file
- $2>$ $\rightarrow$ Send error output to file
- $>>$ $\rightarrow$ Append output to file
- $|$ $\rightarrow$ Send output to program as input

# Redirection

- $>$ $\rightarrow$ Send output to file
- $<$ $\rightarrow$ Take input from file
- $2>$ $\rightarrow$ Send error output to file
- $>>$ $\rightarrow$ Append output to file
- $|$ $\rightarrow$ Send output to program as input
- ‘ ‘ $\rightarrow$ Use command output as argument

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- $2>$ $\rightarrow$ Send error output to file
- $>>$ $\rightarrow$ Append output to file
- $|$ $\rightarrow$ Send output to program as input
- ‘ ‘ $\rightarrow$ Use command output as argument
- *tee* $\rightarrow$ Print as well as send to file

# Redirection

- $>$ $\rightarrow$ Send output to file
- $<$ $\rightarrow$ Take input from file
- $2>$ $\rightarrow$ Send error output to file
- $>>$ $\rightarrow$ Append output to file
- $|$ $\rightarrow$ Send output to program as input
- ‘ ‘ $\rightarrow$ Use command output as argument
- *tee* $\rightarrow$ Print as well as send to file
- $tail - f$ $\rightarrow$ Print file contents till Ctrl+C

# Processes

- `Ctrl + Z`

# Processes

- `Ctrl + Z`
- `fg`

# Processes

- `Ctrl + Z`
- `fg`
- `jobs`

# Processes

- `Ctrl + Z`
- `fg`
- `jobs`
- `bg`

# Processes

- `Ctrl + Z`
- `fg`
- `jobs`
- `bg`
- `ps`

# Processes

- `Ctrl + Z`
- `fg`
- `jobs`
- `bg`
- `ps`
- `&`

# Processes

- `Ctrl + Z`
- `fg`
- `jobs`
- `bg`
- `ps`
- `&`
- `;`

# Processes

- `Ctrl + Z`
- `fg`
- `jobs`
- `bg`
- `ps`
- `&`
- `;`
- `Ctrl + C`

# Processes

- `Ctrl + Z`
- `fg`
- `jobs`
- `bg`
- `ps`
- `&`
- `;`
- `Ctrl + C`
- `kill`

# Processes

- Ctrl + Z
- fg
- jobs
- bg
- ps
- &
- ;
- Ctrl + C
- kill
- killall

# Command line features

- Shell wildcards '*', '?' and '[ ]'

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- `Ctrl + R` → Reverse incremental search

# Command line features

- Shell wildcards '*', '?' and '[ ]'
- `!<command>` → Run last command with same program name
- `echo $?` → Return value of last command
- `Ctrl + R` → Reverse incremental search
- `history`

# Environment variables

- `set`

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- `set`
- `export`

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- `set`
- `export`
- `echo`

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- `set`
- `export`
- `echo`
- `alias`

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- `set`
- `export`
- `echo`
- `alias`
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- Important variables
  - `PATH`

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- `set`
- `export`
- `echo`
- `alias`
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- Important variables
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  - `PWD`

# Environment variables

- `set`
- `export`
- `echo`
- `alias`
- `unalias`
- Important variables
  - `PATH`
  - `PWD`
  - `HISTTIMEFORMAT='%y %m %d %T '`

# Environment variables

- `set`
- `export`
- `echo`
- `alias`
- `unalias`
- Important variables
  - `PATH`
  - `PWD`
  - `HISTTIMEFORMAT='%y %m %d %T '`
  - `PS1`