



[github.com/tmux/tmux](https://github.com/tmux/tmux)

# Problems faced when working on a (remote) terminal

- Serial connection provides only one terminal but you need twelve?
- Need to copy/paste some text on the console but the mouse is borked?
- Crazy firewall kills connection and crashes your remote process?
- You have to log out but you want to start kernel compilation \*and\* interact with process later?

# tmux

*terminal multiplexer*

- Background a process (detach) and re-attach it later, from another session.
- Manage views from multiple processes, arranged in a meaningful layout.
- Keep the layout until next re-attachment
- Protect remote processes against a flaky connection
- Keyboard controlled copy/paste. Search, too!
- Share a terminal with a fellow user (google 'wemux')

# Boy, oh boy!

## So what does it look like, then?

```
.tmux.conf = (~) - VIM

04:10

# Start window indexing at one
set -g base-index 1

# Set prefix key to `
unbind C-b
set -g prefix `
bind ` send-prefix

8,1 10%

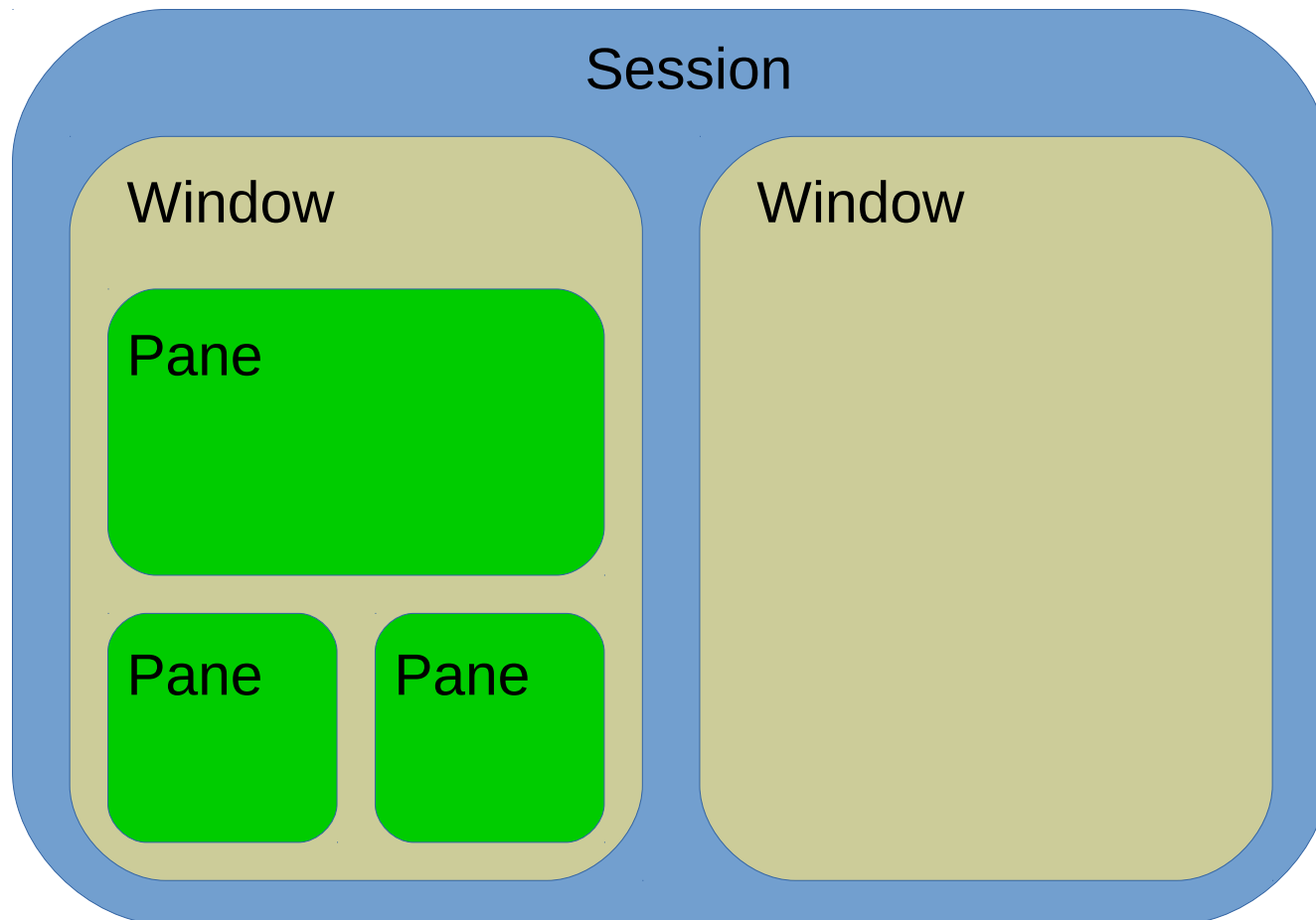
anders@falster:~$ 4893 eomer % ~ 4:04

[server] 1:zsh* "eomer" 04:10 11-Apr-16
[work] 1:remote* 2:kernel- 3:moc "falster" 04:10 11-apr-16
```

tmux sessions can be nested.  
(Yes, that clock is a built-in, it is called clock-mode)


# The tmux layout

- or what are sessions, windows, panes



*Illustration based on [danielmiessler.com/study/tmux/](http://danielmiessler.com/study/tmux/)*

# Basic screenshot



```
anders@falster: ~  
anders@falster:~$   
  
[work] 1: bash* "falster" 03:58 11-apr-16
```

The image shows a terminal window with a dark background. The title bar at the top is grey and contains the text "anders@falster: ~". The main area of the terminal is black. The prompt "anders@falster:~\$" is displayed in white text, followed by a cursor. At the bottom, there is a green status bar containing the text "[work] 1: bash\*" on the left and "\"falster\" 03:58 11-apr-16" on the right.

Default status bar shows [session name] and window names on the left.  
Right side has other misc. information.

# Basic tmux usage

> **tmux**

> **cd /usr/src/linux**

> **make**

**'C-b d'**

*(go to lunch...)*

> **tmux attach**

> **exit**

'C-b d' is tmux terminology for pressing <Ctrl-b>, then 'd'.

It understood that 'C-b' is the so called prefix, which is customisable, of course :)

# Command examples

To start a new tmux session with a sensible name:

```
> tmux new-session -s fun_project
```

```
> tmux attach
```

Both command names and session names can be abbreviate:

```
> tmux new -d -s work
```

```
> tmux a -t fun
```

List existing sessions:

```
> tmux ls
```

```
fun_project: 1 windows (created Sun Apr 10 22:36:10 2016) [158x78]
```

```
work: 1 windows (created Sun Apr 10 22:37:16 2016) [158x78]
```

Interact with sessions, fx:

```
> tmux kill -t work
```



# A few tmux key-bindings

List key-bindings	C-b ?
Command-prompt	C-b :
Split pane vertically	C-b %
Split pane horizontally	C-b “
Select another pane	C-b Up/Down/Left/Right
Break pane (convert current pane to window)	C-b !
Create new window	C-b c
Switch to next window	C-b n
Rename window	C-b , ( ← it is a comma)
Detach session	C-b d
Kill window (will ask for confirmation)	C-b &

For more, see the man page or do **C-b ?**

# Basic tasks

On the Pi, do the following:

- Become familiar with attaching and detaching a tmux session.
- Make two or more windows in the same tmux session, switch between them.
- Split a window several times, horizontally and vertically. Navigate the panes. Try switching windows again!
- Detach the current session and close the ssh or serial connecting. Reconnect and attach the tmux session. Is it still running?

# More tmux tasks

- Recreate the layout depicted on the “Boy, oh boy! So what does it look like, then?”-slide.
- Attach the same tmux session from two different terminals of different dimensions—what happens?
- Enable vi key-bindings for copy-mode in the ~/.tmux.conf file.
- Try to copy and paste some text.
- Add a key-binding for ‘r’ in ~/.tmux.conf to re-read the config file
- Change the prefix to **C-a**
- Make key-bindings so panes can be navigated with h, j, k, and l
- Split an existing tmux window horizontally without attaching the session
- Make the prefix work in a nested tmux session, ie. tmux inside tmux.
- Make the numbering of panes and windows start from 1 instead of 0