Step 1.5: Burning the image

How to burn the image from a Linux computer

Resources:
- 32 GB SD card
- Adapter
- a Linux computer
- 5 minute setup
- 35 minutes wait

Results:
- A complete image

Get the image

Download the zipped image from Dropbox:

```
https://www.dropbox.com/s/3matsqu2hfvo0gf/2015-12-15_raspi_liam.img.gz?dl=0
$ wget
```

Unzip the img on your laptop:

```
$ gunzip 2015-12-15_raspi_liam.img.gz
```

TODO: compute md5sum of image

Burn the image

Put an SD Card into an adapter. Make sure the adapter is not in read-only mode

Put the SD card in the adapter.

Again, make sure the adapter is not in read-only mode.

Put the adapter in computer.

Find its location using

```
df -h
```

This is something like

```
/dev/mmcblk0
```

Unmount all of the partitions:

```
$ sudo umount /dev/mmcblk0p1
$ sudo umount /dev/mmcblk0p2

    ...
```

Option 1 of 2: Monitoring progress using pv

Install pv to monitor progress:

```
sudo apt-get install pv
```

Burn the image using dd and monitor progress with pv:

```
$ dd bs=4M if=2015-12-15_raspi_liam.img | pv | sudo dd
of=/dev/mmcblk0
```

This should take at most 1.3 hours.

With the SD Cards we can get writing speeds of 8MB/s-15MB/s. If you don't see that range, there is a problem (with your laptop or with the adapter).

Option 2 of 2: Monitoring progress using iotop

Alternative - use only dd but use iotop to monitor progress (bandwidth):

```
console 1: $ sudo dd bs=4M if=2015-12-15_raspi_liam.img
of=/dev/mmcblk0

console 2: $ sudo apt-get install iotop
console 2: $ iotop
```

Checking result

At this point you can remove the SD card and insert it again on your computer. You should see the filesystem.

Check using mount:

```
$ mount

/dev/mmcblk0p1 on /media/andrea/AB3E-B34D type vfat
(rw,nosuid,nodev,uid=1000,gid=1000,shortname=mixed,dmask=0077,utf8=1,showex
ec,flush,uhelper=udisks2)
```

TODO: write instructions to compare md5sum of sdcard and image

Troubleshooting

Filesystem is read only

If you get an error like "filesystem is read only", you probably forgot the SD Card adapter flap up. It is possible that the insertion of the adapter itself can move the tab into the "read-only" position.

Please increase this counter if it happened to you: 2

No space left on device

```
$  time dd bs=4M if=2015-12-15_raspi_liam.img of=/dev/mmcblk0
dd: error writing '/dev/mmcblk0': No space left on device
7370+0 records in
7369+0 records out
30908350464 bytes (31 GB) copied, 2197.75 s, 14.1 MB/s
dd bs=4M if=2015-12-15_raspi_liam.img of=/dev/mmcblk0  0.02s user 30.28s
system 1% cpu 36:37.75 total
```

AC: not sure what to do about this

Duplicating using duplicator

TODO