

eRaspberry Pi as Captive-Portal Tutorial

df -h

#the output will be something like this

Filesystem	Size	Used	Avail	Capacity	Mounted on
/dev/disk0s2	233Gi	125Gi	108Gi	54%	/
devfs	114Ki	114Ki	0Bi	100%	/dev
map -hosts	0Bi	0Bi	0Bi	100%	/net
/dev/disk1s1	466Gi	351Gi	115Gi	76%	/Volumes/Elements

#Insert the SD card and then

df -h

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/dev/disk0s2	233Gi	125Gi	108Gi	54%	/
devfs	114Ki	114Ki	0Bi	100%	/dev
map -hosts	0Bi	0Bi	0Bi	100%	/net
/dev/disk1s1	466Gi	351Gi	115Gi	76%	/Volumes/Elements
/dev/disk2s1	30Gi	1.7Mi	30Gi	1%	/Volumes/boot

#So the SD card has the name disk2s1

#Unmount the disk in order to burn the image to the SD card

```
sudo diskutil unmount /dev/disk2s1
```

#Download the image from <http://www.raspberrypi.org/downloads/>

#Burn the image to the SD card. If the name of the SD is disk2s1 then you will use rdisk2

```
sudo dd bs=1m if=/path/to/the/image/2014-06-20-wheezy-raspbian.img of=/dev/rdisk2
```

#If you don't have a display and a keyboard, in order to find the IP address of the Raspberry Pi

you have to find the subnet of the network that you connect the Raspberry Pi and then type

```
nmap -s P 192.168.2.0/23 #if the subnet is 192.168.2.xxx
```

```
ssh pi@192.168.2.xxx
```

```
#password = raspberry
```

#The first thing that we have to do is to update the repositories of the Raspberry Pi

```
sudo apt-get update
```

#Then we have to install the packages that will enable us to setup a web server

```
sudo apt-get install lighttpd
```

```
sudo apt-get install php5-common php5-cgi php5
```

```
#In order to have access to the directory where we will place our captive portal
sudo chown www-data:www-data /var/www
sudo chmod 775 /var/www
sudo usermod -a -G www-data pi
```

```
#Enable fast CGI for the php
sudo lighty-enable-mod fastcgi-php
sudo service lighttpd force-reload
```

Configuring Networking

```
#In order the wireless adapter can be used as an Access Point
sudo apt-get install hostapd
```

```
#Plug in the wireless adapter to a USB port on the Pi
```

```
sudo nano /etc/network/interfaces
#COMMENT THE FOLLOWING LINES
    iface wlan0 init manual
        wpa-roam /etc/wpa_supplicant/wpa_supplicant/conf
    iface default inet dhcp
#ADD THE FOLLOWING LINES
    iface wlan0 inet static
        address 192.168.3.1 #You can change it to what you want
        netmask 255.255.255.0
```

```
sudo nano /etc/default/hostapd
#UNCOMMENT THE LINE
    DAEMON_CONF=
#AND ADD
    /etc/hostapd/hostapd.conf
#We create a configuration file where we define the name of the AP (SSID), the operating
channel etc
```

```
sudo nano /etc/hostapd/hostapd.conf
```

```
#ADD THE FOLLOWING LINES
```

```
interface=wlan0
ssid=RaspberryAP
hw_mode=g
channel=11
```

```
beacon_int=100
auth_algs=3
```

```
wmm_enabled=1
```

```
sudo service hostapd start  
sudo service hostapd stop
```

```
#We have to configure the DHCP server and the captive portal  
sudo apt-get install dnsmasq
```

```
#We set the range of the IPs that will be assigned to the clients  
sudo nano /etc/dnsmasq.conf  
#ADD THE FOLLOWING LINES  
interface=wlan0  
dhcp-range=192.168.3.2,192.168.3.50,255.255.255.0,12h  
address=#!/192.168.3.1 #redirect all DNS requests to 192.168.3.1
```

```
sudo service hostapd start  
sudo service dnsmasq restart
```

```
sudo nano /etc/hosts  
#ADD THE FOLLOWING LINE AT THE BOTTOM  
192.168.3.1     eins
```

```
sudo reboot
```

```
#Now you can add you site or edit the index.html in /var/www
```

```
#If you want to set a static IP in order to ssh to the Pi from ethernet then  
sudo nano /etc/network/interfaces  
#ADD THE FOLLOWING LINES  
auto eth0  
iface eth0 inet static  
address 10.64.44.8  
netmask 255.255.255.0  
network 10.64.44.0  
broadcast 10.64.44.255  
gateway 10.64.44.1
```

```
sudo reboot
```

```
#If the AP doesn't give IP addresses to the clients connected to it then you have to execute
```

```
sudo service hostapd stop  
sudo ifconfig wlan0 down
```

```
sudo ifconfig wlan0 up
sudo service hostapd start
sudo service dnsmasq restart
```

```
#check that the wlan0 interface has an IP
ifconfig wlan0
```

```
#If you set a static IP and now you have your AP up and running and you want to have internet
from ethernet then you
sudo nano /etc/network/interfaces
```

```
#AND COMMENT OUT THE ABOVE LINES
```

```
auto eth0
iface eth0 inet static
address 10.64.44.8
netmask 255.255.255.0
network 10.64.44.0
broadcast 10.64.44.255
gateway 10.64.44.1
```

```
sudo reboot
```