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AREA		
Hardware		
DATE		
06-04-2019		
ID	PAGE	

TOR ROUTER - RASPBERRY PI 3 VERSION 1.0

ID	PAGE
HDWE-02	1/4

I. PURPOSE

Build your very own Raspberry Pi TOR device to encrypting and anonymizing your internet traffic.

II. HOW TO

Building Your Own Device

STEP 00

Things that you need:

- Raspberry Pi 3
- Image Raspbian onto an SD card

note: This project is originally made by KNOW HOW by <u>@PadreSJ</u>, <u>@Cranky_Hippo</u>, and <u>@Anelf3</u> – <u>twit.tv/shows/know-how/episodes/301</u>

STEP 01

First of all let's configure the Pi

Open the Terminal and type:

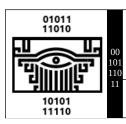
```
pi@raspberrypi:~$ sudo raspi-config
```

Change the default password -- Select option 1 type an strong password :D

STEP 02 – TURN YOUR RASPI INTO AN ACCESS POINT

A github user by the name of "<u>Harry Allerston</u>" created a script to automate the process.

Open the Terminal and type:



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AREA	
Hardware	
DATE	
06-04-2019	

TOR ROUTER - RASPBERRY PI 3 VERSION 1.0

ID	PAGE
DWE-02	2/4

that you wish to continue? [y/N] y Configuring DHCP Do you want to use preconfigured DNS servers? [y/N] y Do you wish to use Unblock-Us DNS servers? [y/N] y Synchronizing state of udhcpd.service with SysV service script with /lib/systemd/systemd-sysv-install. Executing: /lib/systemd/systemd-sysv-install enable udhcpd Configuring interfaces Configuring hostapd Do you want to use the wifi defaults of password=0123456789A, ssid=RaspberryPiFi, and channel=8? [y/N] N Please enter a new password at least 8 characters long (length is not checked): Please enter the new password again: Please enter a new ssid: AP01-TOR Please enter a new channel from 1 to 11: 11 You selected channel 11. Are you using an rtl871x chipset (such as one purchased via adafruit? (if in doubt, select no) [y/N] N Configuring NAT Configuring iptables Do you require chromecast support for unblock-us? [y/N] N Initialising access point Initialising DHCP server

Your Pi will reboot.

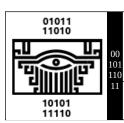
*If you have any issue with **hostapd.service** unsmask the service to allow starting from boot and ruin ./install again.

pi@raspberrypi:~\$ sudo systemctl unmask hostapd.service

STEP 03 - INSTALL AND CONFIGURE TOR

Install TOR

Open the Terminal and type the following command to update the repositories and install tor.



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TOR ROUTER - RASPBERRY PI 3 **VERSION 1.0**

	ID	PAGE
П	HDWE-02	3/4

Configure TOR

pi@raspberrypi:~\$ sudo nano /etc/tor/torrrc

*Add the following just below the first set of comments

Log notice file /var/log/tor/notices.log VirtualAddrNetwork 10.192.0.0/10 AutomapHostsSuffixes .onion,.exit AutomapHostsOnResolve 1 TransPort 9040

TransListenAddress 192.168.42.1

DNSPort 53

DNSListenAddress 192.168.42.1

Save and exit the document.

STEP 04 - CONFIGURE IPTABLES

Dump all the old rules from the iptables:

```
pi@raspberrypi:~$ sudo iptables -F
pi@raspberrypi:~$ sudo iptables -t nat -F
```

Route DNS through the TOR:

```
pi@raspberrypi:~$ sudo iptables -t nat -A PREROUTING -i wlan0 -p udp
--dport 53 -j REDIRECT --to-ports 53
```

Route all TCP traffic through the TOR:

```
pi@raspberrypi:~$ sudo iptables -t nat -A PREROUTING -i wlan0 -p tcp
--syn -j REDIRECT --to-ports 9040
```

Check the routes:

```
pi@raspberrypi:~$ sudo iptables -t nat -L
```

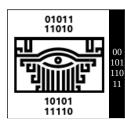
Save the new rules to the NAT table

pi@raspberrypi:~\$ sudo sh c "iptables save > /etc/iptables.ipv4.nat"

^{*}iptables lets you configure the rules of the Linux Kernel Firewall.

^{*}It allow you to define how packets are treated.

^{*}We're using it to route traffic througth TOR



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AREA		
Hardware		
DATE		
06-04-	2019	
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TOR ROUTER - RASPBERRY PI 3 VERSION 1.0

ID	PAGE
HDWE-02	4/4

Create log file:

pi@raspberrypi:~\$ sudo touch /var/log/tor/notices.log

*touch creates an empty file

pi@raspberrypi:~\$ sudo chown debian-tor /var/log/tor/notices.log

*chown changes the ownership of a file, so that TOR can use it.

pi@raspberrypi:~\$ sudo chmod 644 /var/log/tor/notices.log

*chmod is the "change mode" command its changes permissions

LAST STEP

Start the TOR service:

pi@raspberrypi:~\$ sudo service tor start

Check if it's runnig:

pi@raspberrypi:~\$ sudo service tor status

Change the service to start on boot:

pi@raspberrypi:~\$ sudo update-rc.d tor enable

Check if you are using tor browsing check.torproject.org