Wi-fi these days is an incredibly common technology and chances are, you're reading this article accessing a Wi-fi somewhere near you. But every technology comes with its own set of vulnerabilities and risks, these can easily be exploited to harvest your data. In times like these when data is the new gold, what are some sure shots of making sure that your data remains with only you and not with some company wanting to taint your screen with personalized advertisements. Well, one solution to this snag could be, building your own custom router. Of course, building one from scratch might be a distant concept (for now), but thanks to the open-source and open-hardware community, we have a simple solution sitting on our workbenches, "The Raspberry Pi". Let's have a look at how this is possible.

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Requirements to Make Router at Home

Raspberry Pi Module (3 series or the 4 series).

Appropriate Power Supply to the Raspberry Pi.

Ethernet LAN Cable.

Your ISPs Wifi Router.

SD Card and an SD Card Reader.

Should also buy ethernet splitter

Instructions buy a raspberry pi 3 or 4 whatever is in stock minimum ram required. Is 500mb to 1gb of ram.

Project Cost

Sd card https://www.amazon.com/dp/B07GJQHL38/ref=twister_B09V1FT19S?_encoding=UTF8&th=1

Price: $30.44

https://www.amazon.com/Raspberry-Pi-Model-Desktop-Linux/dp/B00T2U7R7I/ref=sxts_b2b_sx_fused_v3_desktop_ref-tab-0?content-id=amzn1.sym.97762c05-7545-47e0-ae5c-1110ba2791f0%3Aamzn1.sym.97762c05-7545-47e0-ae5c-1110ba2791f0&cv_ct_cx=raspberry+pi&keywords=raspberry+pi&pd_rd_i=B00T2U7R7I&pd_rd_r=7693dd03-b6ef-483b-846e-044f94316108&pd_rd_w=ETjGy&pd_rd_wg=CGHmM&pf_rd_p=97762c05-7545-47e0-ae5c-1110ba2791f0&pf_rd_r=H0X9PANXN2963HG2CH01&qid=1674914105&s=electronics&sprefix=raspb%2Celectronics%2C103&sr=1-8-965fba24-1eed-4536-936e-b447f98a83bc

$64.89

https://www.amazon.com/NETGEAR-5-Port-Gigabit-Ethernet-Unmanaged/dp/B07S98YLHM/ref=sr_1_6?crid=1DWGB3OCLB69B&keywords=ethernet+splitter&qid=1674913990&sprefix=ethernet+spille%2Caps%2C109&sr=8-6

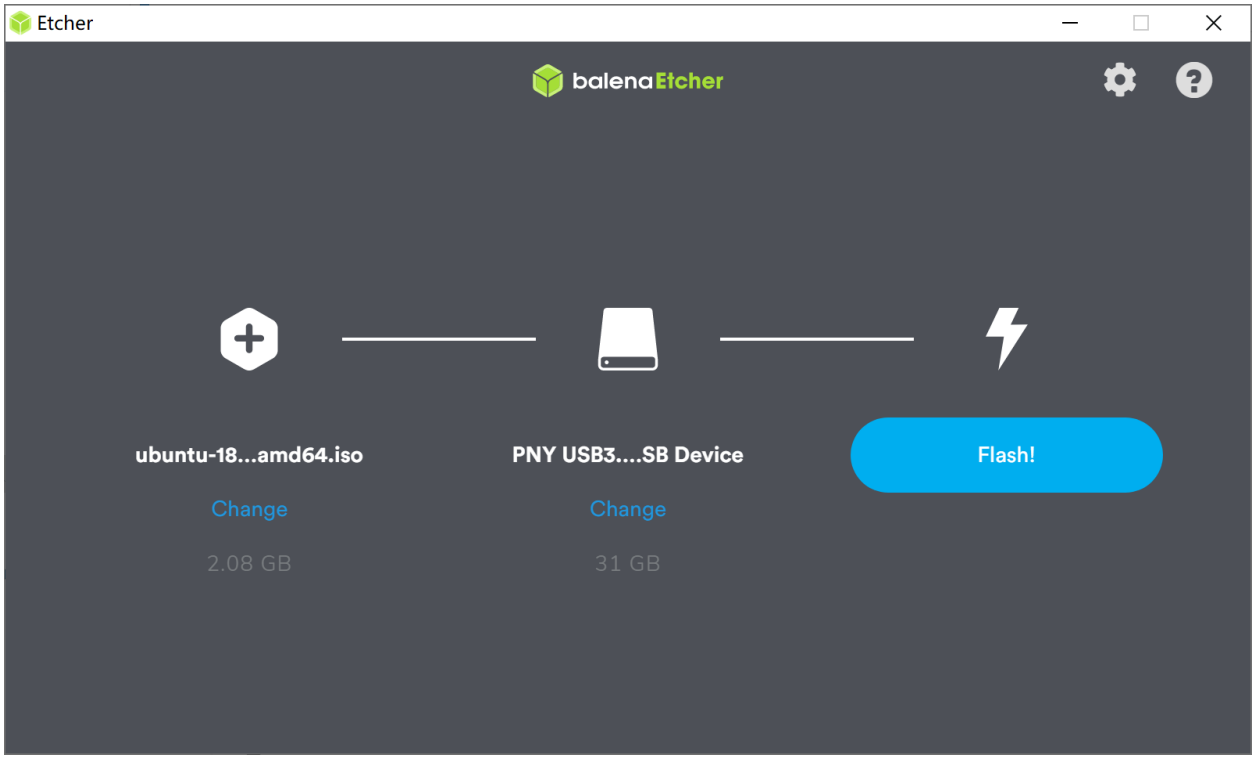
$17.99

https://www.amazon.com/Black-Protective-Case-Enclosure-Raspberry/dp/B01N9JMJ14/ref=pd_bxgy_vft_none_img_sccl_1/143-2065524-4306551?pd_rd_w=jZJ57&content-id=amzn1.sym.7f0cf323-50c6-49e3-b3f9-63546bb79c92&pf_rd_p=7f0cf323-50c6-49e3-b3f9-63546bb79c92&pf_rd_r=WA8H7GP99B8JXWAGRHGK&pd_rd_wg=VILZY&pd_rd_r=37a284ba-7f3b-4996-887b-e0a775fa1650&pd_rd_i=B01N9JMJ14&psc=1

$9.49

https://www.amazon.com/CanaKit-Raspberry-Supply-Adapter-Listed/dp/B00MARDJZ4/ref=pd_bxgy_vft_none_img_sccl_2/143-2065524-4306551?pd_rd_w=I8QzR&content-id=amzn1.sym.7f0cf323-50c6-49e3-b3f9-63546bb79c92&pf_rd_p=7f0cf323-50c6-49e3-b3f9-63546bb79c92&pf_rd_r=EKX6CK6ZJ1HHXETB93VT&pd_rd_wg=77BFj&pd_rd_r=9b8d2696-76b3-4f8a-865e-0c457c4fe0ab&pd_rd_i=B00MARDJZ4&psc=1

$9.95
Total cost
$131.77
Then download the latest version of openwrt for the raspberry pi model you choice of the recommended one listed. Then download balenaetcher and flash the image to the micro sd card.



Example image
Then plug in and setup in the menu then you are done and the router is setup and should be working.