20TH OF NOVEMBER 2025

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AD-BLOCKING USING PI-HOLE

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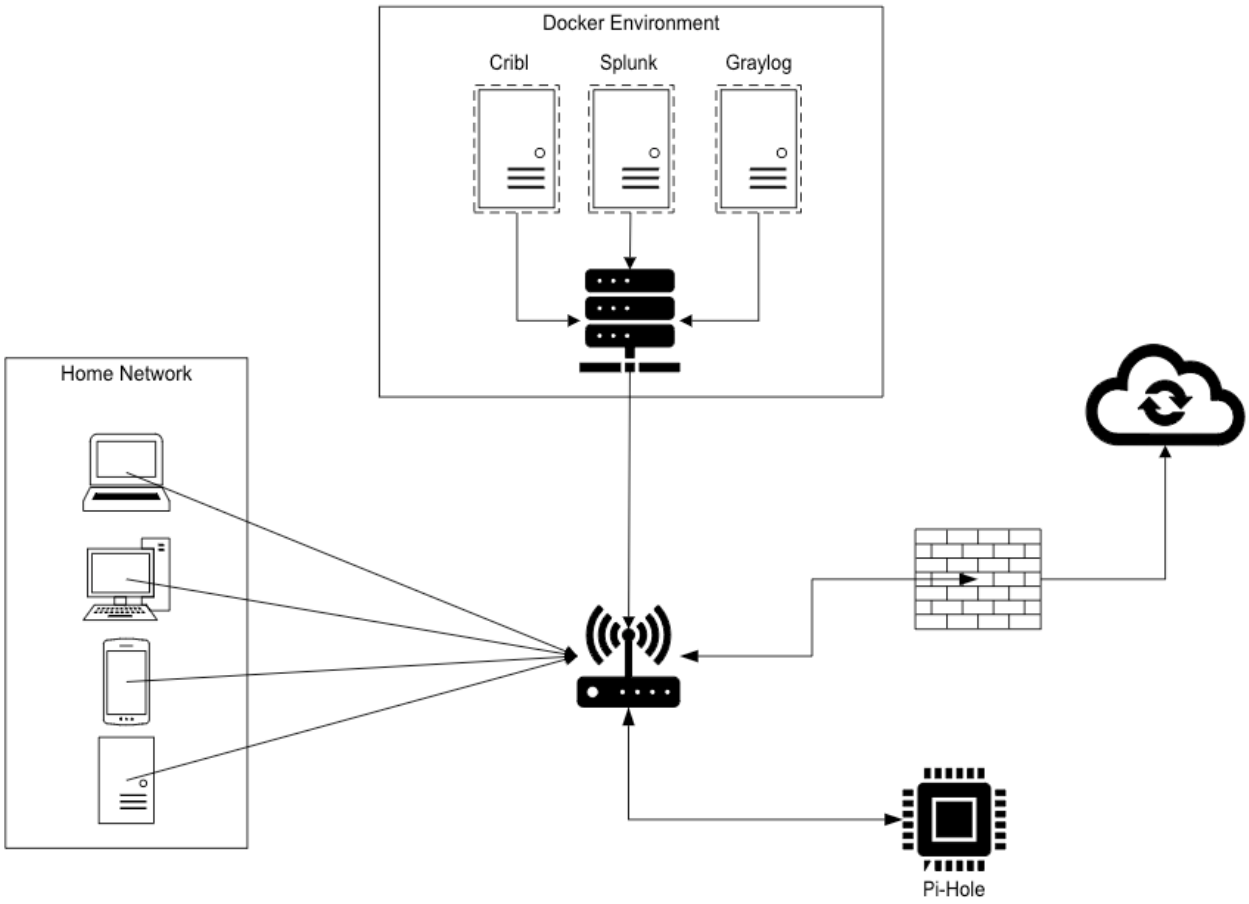
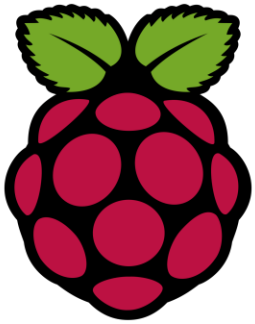
UNIX (420-321-VA) - FALL 2025



PROJECT DESCRIPTION / GOAL

Our **project** aims to use a Raspberry Pi as an ad-blocker. Using Debian as our distribution, we will install Pi-Hole (ad-blocking application) in order to block advertisements and to prevent compagnies to track our personal data on a network level. This will be done by connecting the Raspberry Pi to the modem of our home. Our **goal** is to protect users from unwanted content and to protect their network as a whole. This way, it'll be impossible for their data to be leaked and tracked by multi-billion-dollar compagnies to make profit off of it.



PLATFORM OF CHOICE

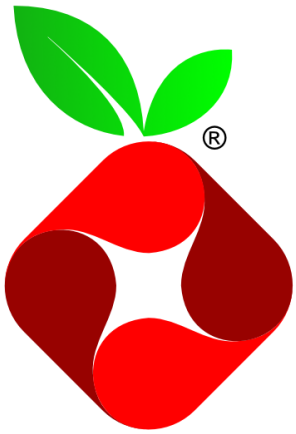
For this project, we chose to use a Raspberry Pi model 3B+. We chose this model because it is affordable, it is neither outdated nor too recent, and it has the perfect storage capacity for the project.

DEMONSTRATION PLAN

We decided to make a video demonstrating the functionality of our project, in which we will provide a comparison of how a device connects to the internet without a pi-hole and how a device connects to the internet with a pi-hole.

REQUIREMENTS

We will start by buying a Raspberry Pi. We will install the operating system. We then connect and configure the Raspberry Pi to the modem. We will then install Pi-hole. There are multiple ways to do so, but the quickest and most convenient way to do it is by running the following command: **curl -sSL https://install.pi-hole.net | bash**



MAJOR TECHNICAL SOLUTIONS COMPARED

Compared to **regular** networks (modems) who aren't using a Raspberry Pi to install and use Pi-hole, our ad-blocking device improves the performance of our network (e.g. faster speed), protects the network from harmful tracking and facilitates network browsing by blocking advertisements.

TIMELINE

Week 1: Buy Raspberry Pi and the necessary cables to set it up.
Week 2: Install and configure our Raspberry Pi.
Week 3: Install Pi-hole and test it.

SOURCES

Pi-hole diagram:
https://medium.com/@coachreinke/connecting-pi-hole-dns-to-graylog-17c6c6e19af0

Raspberry Pi logo:
https://www.logo.wine/logo/Raspberry_Pi

Pi-hole logo:
https://commons.wikimedia.org/wiki/File:Pi-hole_Logo.png