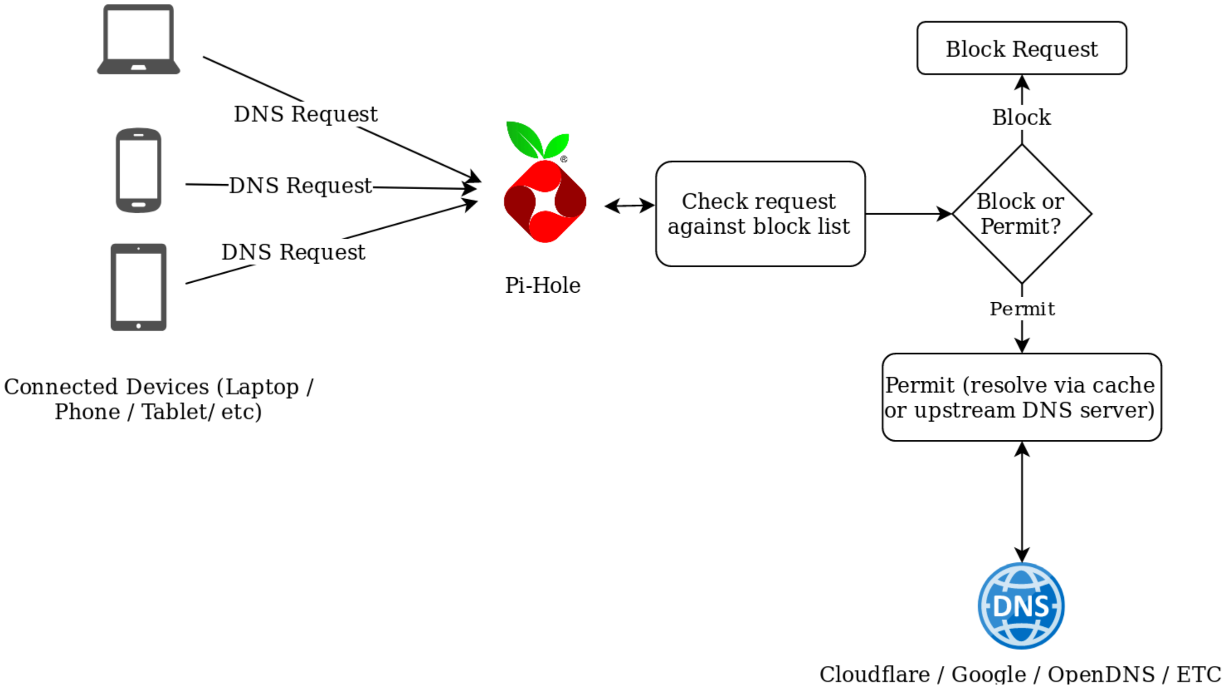
Pi hole Adblocker

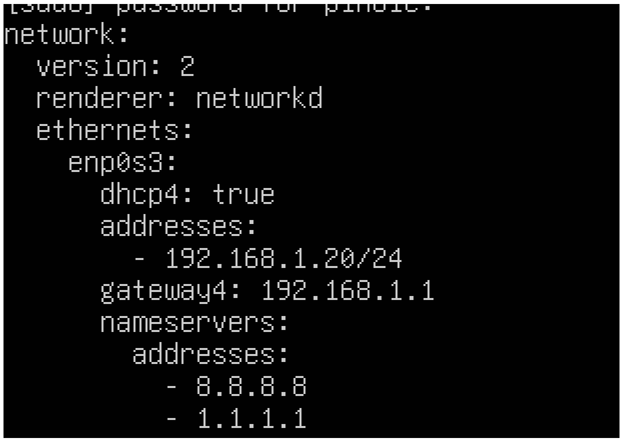
The purpose of this mini project is to be able to use virtual machine to block ads across the entire network.


DNS Request
DNS Request
DNS Request
Connected Devices (Laptop / Phone / Tablet/ etc)
Pi-Hole
Check request against block list
Block or Permit?
Block
Block Request
Permit
Permit (resolve via cache or upstream DNS server)
DNS
Cloudflare / Google / OpenDNS / ETC

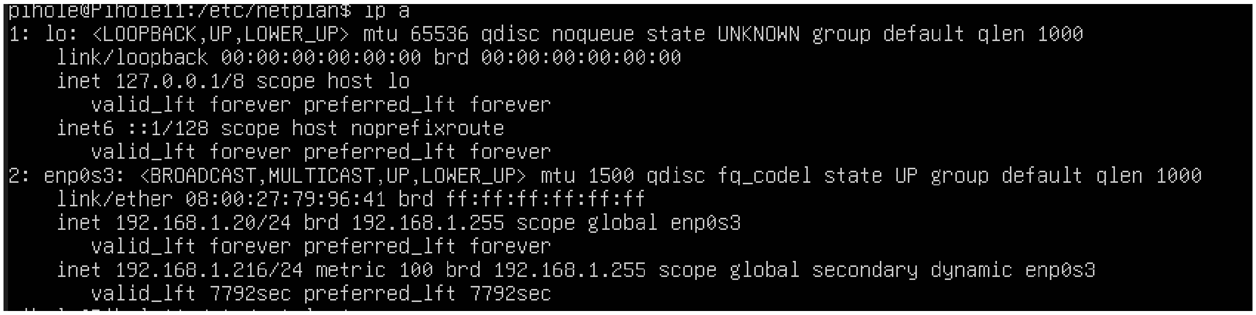
Tools used:

- Virtualbox: running Ubuntu-server
- Pihole: The tool to block ads

First of all, Installation of ubuntu server and setting up a static ip for it. Which can be done by going into /etc/netplan/ and edit the file to a static ip and gateway.

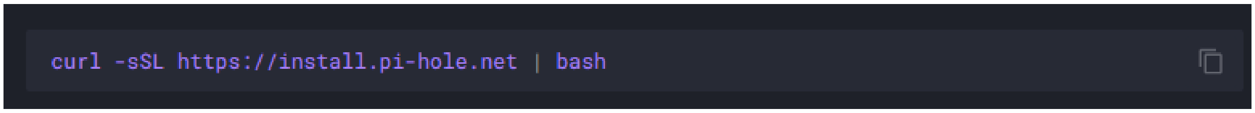


```
[sudo] password for pihole:
network:
  version: 2
  renderer: networkd
  ethernets:
    enp0s3:
      dhcp4: true
      addresses:
        - 192.168.1.20/24
      gateway4: 192.168.1.1
      nameservers:
        addresses:
          - 8.8.8.8
          - 1.1.1.1
```



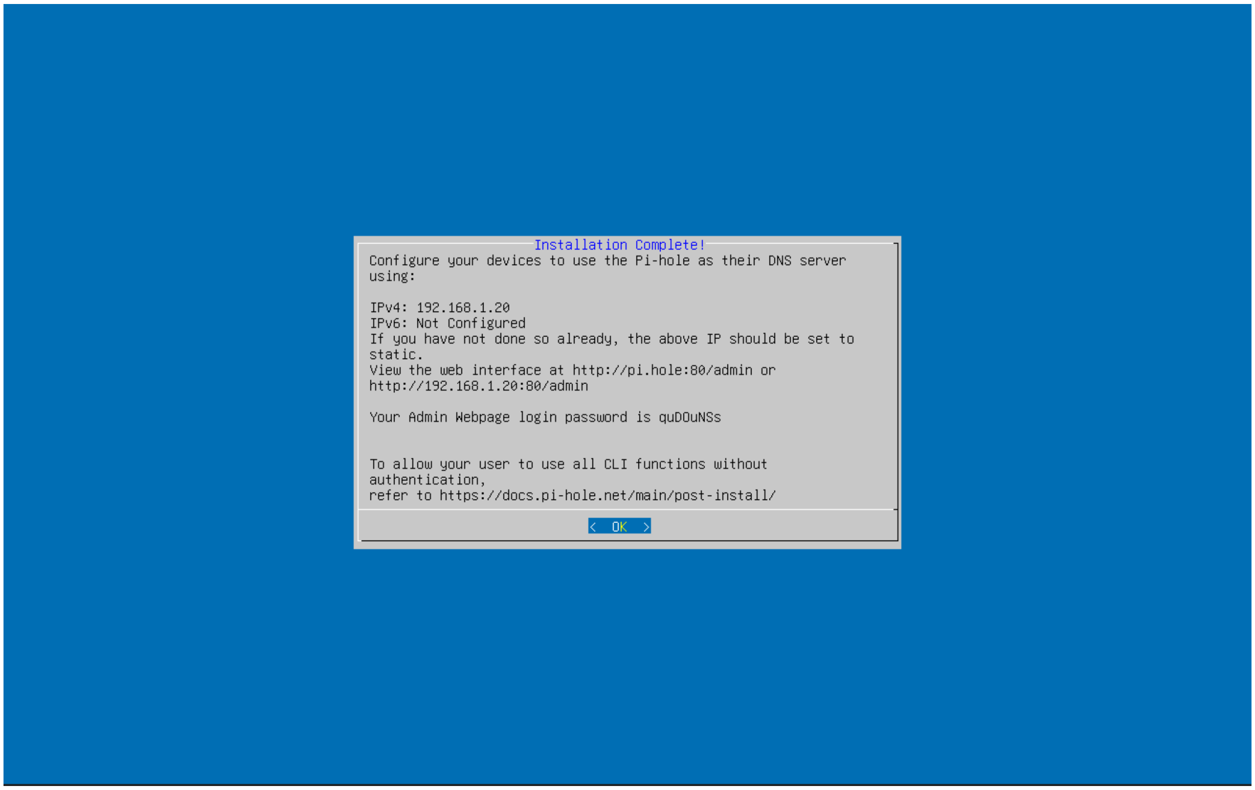
```
pihole@Pihole11:/etc/netplan$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:79:96:41 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.20/24 brd 192.168.1.255 scope global enp0s3
       valid_lft forever preferred_lft forever
    inet 192.168.1.216/24 metric 100 brd 192.168.1.255 scope global secondary dynamic enp0s3
       valid_lft 7792sec preferred_lft 7792sec
```

Once done, the ip should be 192.168.1.20/24, which the screenshot shows. After we install Pihole using curl -sSL https://install.pi-hole.net | bash.



```
curl -sSL https://install.pi-hole.net | bash
```

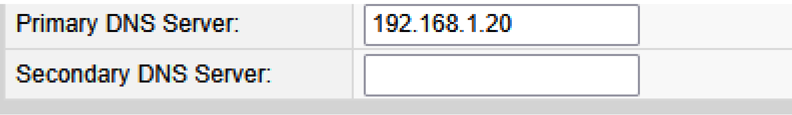
Choose your dns and I also enabled “Show everything” for better learning, debugging and security analysis.



```
Installation Complete!
Configure your devices to use the Pi-hole as their DNS server
using:

IPv4: 192.168.1.20
IPv6: Not Configured
If you have not done so already, the above IP should be set to
static.
View the web interface at http://pi.hole:80/admin or
http://192.168.1.20:80/admin

Your Admin Webpage login password is quDOuNSs


To allow your user to use all CLI functions without
authentication,
refer to https://docs.pi-hole.net/main/post-install/
```

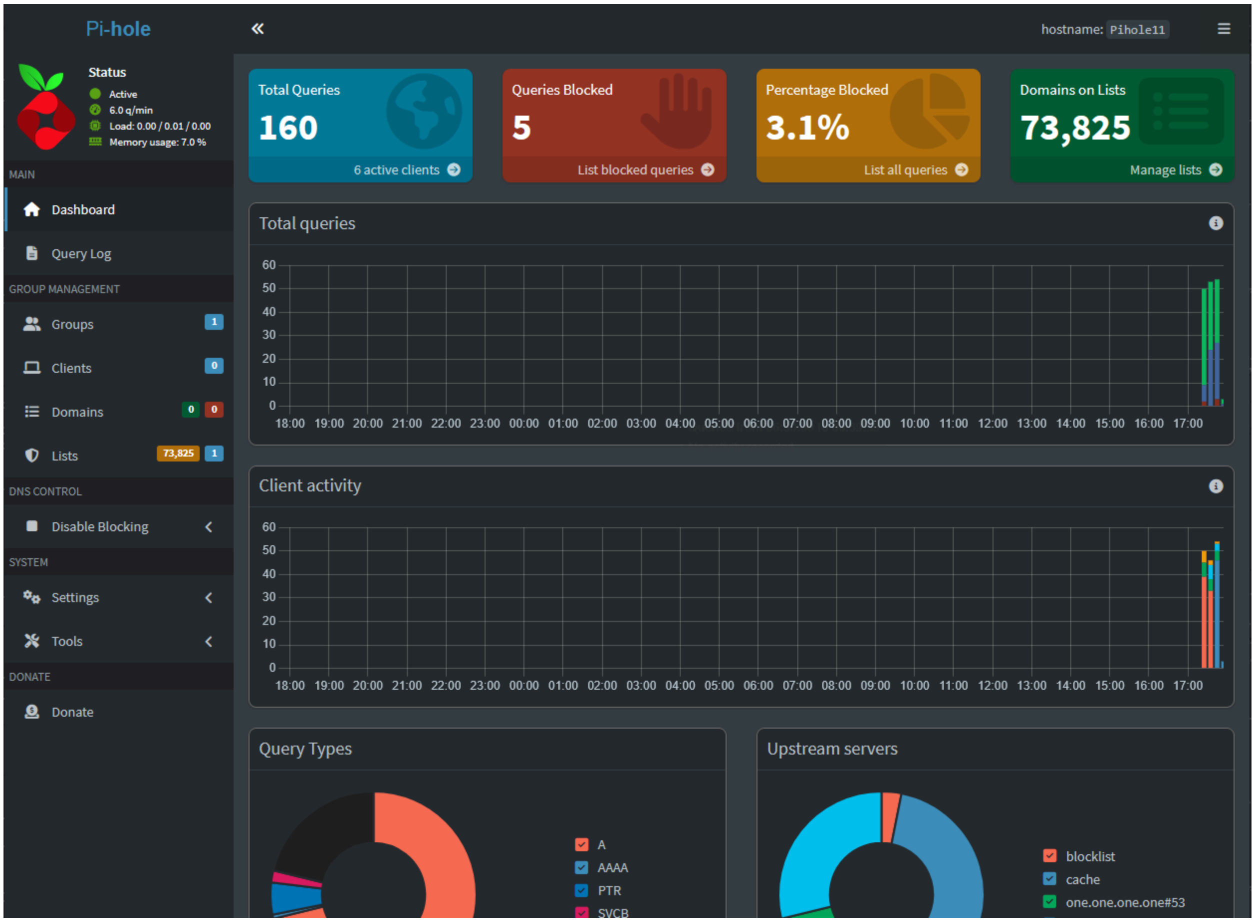
Once done this should show, the address of the web interface and the password to login.

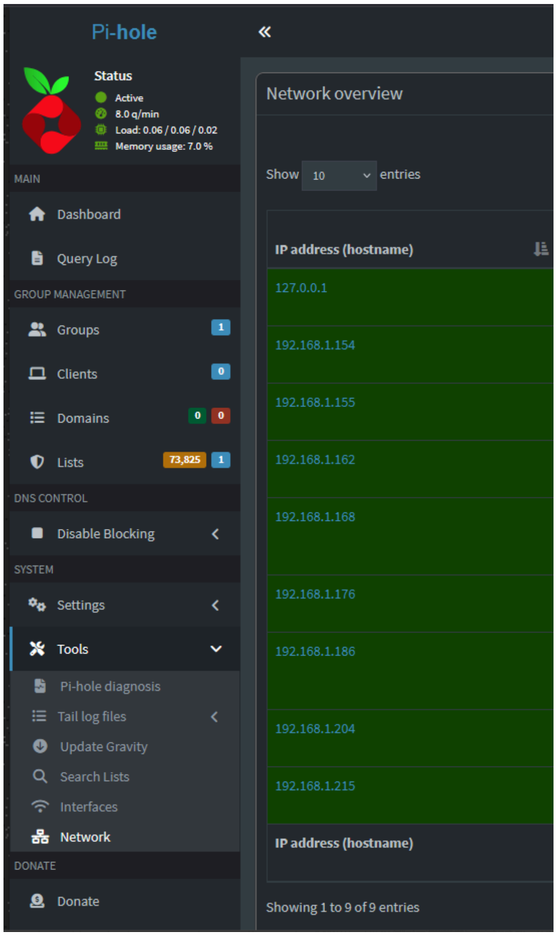
After this, we need to configure the dns server to use our Pihole static ip to be the actual dns server. Which should be in the LAN section of the router, and DHCP configuration.



Primary DNS Server:	192.168.1.20
Secondary DNS Server:	

After applying the change, Turn off then on for the wifi, and the Pihole adblocker are active.


Pi-hole
«
hostname: Pihole11
≡
Status
Active
6.0 q/min
Load: 0.00 / 0.01 / 0.00
Memory usage: 7.0 %
MAIN
Dashboard
Query Log
GROUP MANAGEMENT
Groups 1
Clients 0
Domains 0 0
Lists 73,825 1
DNS CONTROL
Disable Blocking
SYSTEM
Settings
Tools
DONATE
Donate
Total Queries
160
6 active clients
Queries Blocked
5
List blocked queries
Percentage Blocked
3.1%
List all queries
Domains on Lists
73,825
Manage lists
Total queries
60
50
40
30
20
10
0
18:00 19:00 20:00 21:00 22:00 23:00 00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00
Client activity
60
50
40
30
20
10
0
18:00 19:00 20:00 21:00 22:00 23:00 00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00
Query Types
☑ A
☑ AAAA
☑ PTR
☑ SVCB
Upstream servers
☑ blocklist
☑ cache
☑ one.one.one.one#53



Status
Active
8.0 q/min
Load: 0.06 / 0.06 / 0.02
Memory usage: 7.0 %

Network overview

Show 10 entries

IP address (hostname)
127.0.0.1
192.168.1.154
192.168.1.155
192.168.1.162
192.168.1.168
192.168.1.176
192.168.1.186
192.168.1.204
192.168.1.215
IP address (hostname)

Showing 1 to 9 of 9 entries