How To Install Pihole on Debian 11

Pihole renowned for ads blocker on DNS level, by using DNS no need to install any 3rd party application to avoid ads on your computer. If you follow this tutorial, then all devices inside your network (Mobile Phone, Computer, TV) will never be bothered by ads again without any configuration for an individual device.

Normally people will install Pihole on SBC (Single Board Computer) such as Raspberry Pi, Banana Pi, Odroid, Nano Pi, etc. Don't worry even you don't have any SBC Pihole installable on a normal computer even on VM, in my case I install Pihole on Virtual Machine inside my Homelab server. Wireless or LAN connection to Pihole does not really matter, because it only uses small bandwidth.

Pi-hole advantages
– Network-wide protection
– Block in app advertisements
– Reduces the bandwidth usages
– Faster DNS resolution
– DNS Statistic
– Blacklist/Whitelist client

Install cURL

Install curl using apt

```
sudo apt install curl -y
```

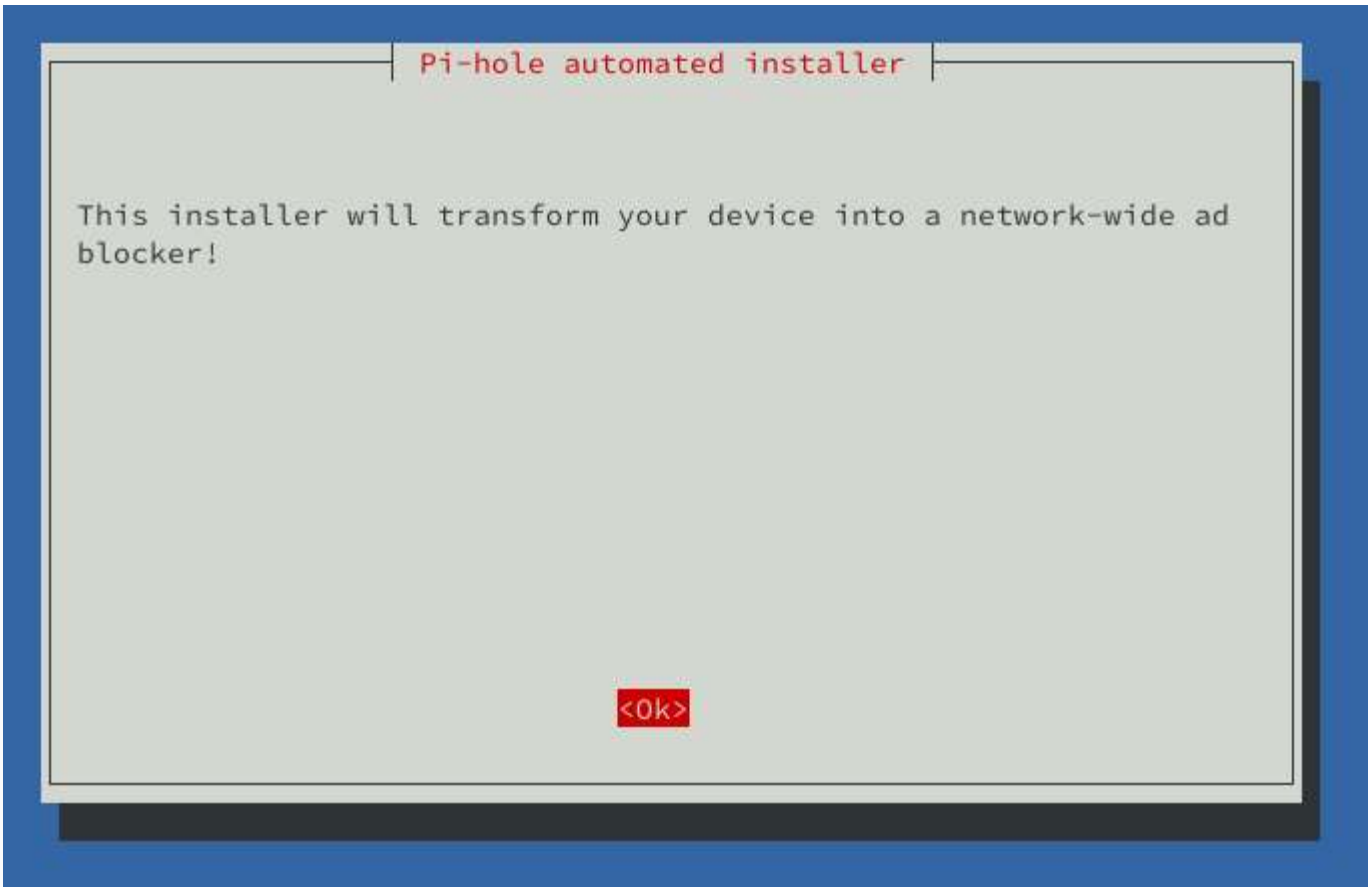
```
atetux@atetux:~$ sudo apt install curl -y
sudo: unable to resolve host atetux: No address associated with hostname
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libcurl4
The following NEW packages will be installed:
  curl libcurl4
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 596 kB of archives.
After this operation, 1,123 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian buster/main amd64 libcurl4 amd64 7.64.0-4+deb
Get:2 http://deb.debian.org/debian buster/main amd64 curl amd64 7.64.0-4+deb10u1
Fetched 596 kB in 0s (2,564 kB/s)
Selecting previously unselected package libcurl4:amd64.
(Reading database ... 28494 files and directories currently installed.)
Preparing to unpack .../libcurl4_7.64.0-4+deb10u1_amd64.deb ...
Unpacking libcurl4:amd64 (7.64.0-4+deb10u1) ...
Selecting previously unselected package curl.
Preparing to unpack .../curl_7.64.0-4+deb10u1_amd64.deb ...
Unpacking curl (7.64.0-4+deb10u1) ...
Setting up libcurl4:amd64 (7.64.0-4+deb10u1) ...
Setting up curl (7.64.0-4+deb10u1) ...
Processing triggers for man-db (2.8.5-2) ...
Processing triggers for libc-bin (2.28-10) ...
atetux@atetux:~$
```

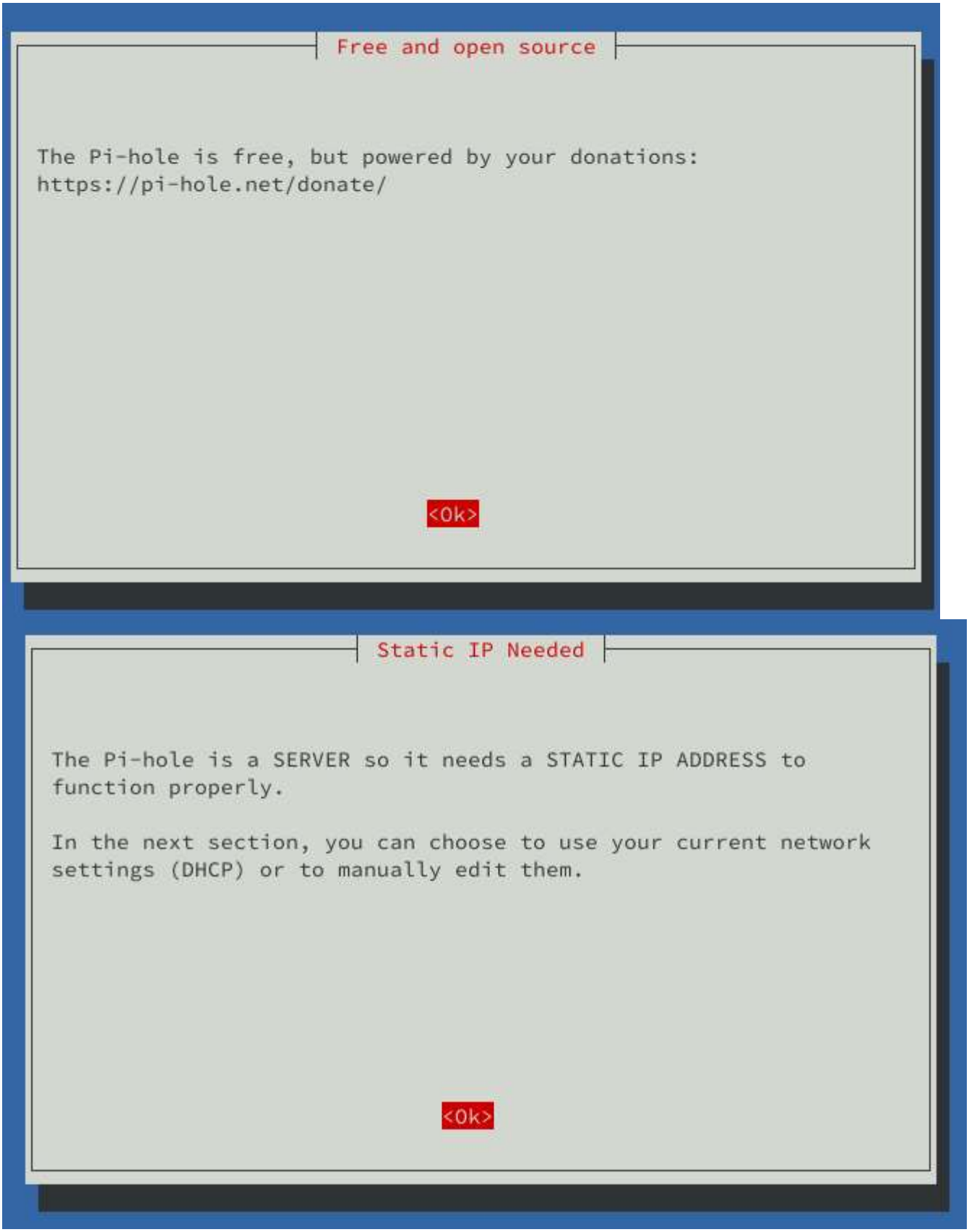
Install Pi-hole

Pi-hole had a nice wizard to install Pi-hole step-by-step. I'll split the step to 9

1. Download Installer

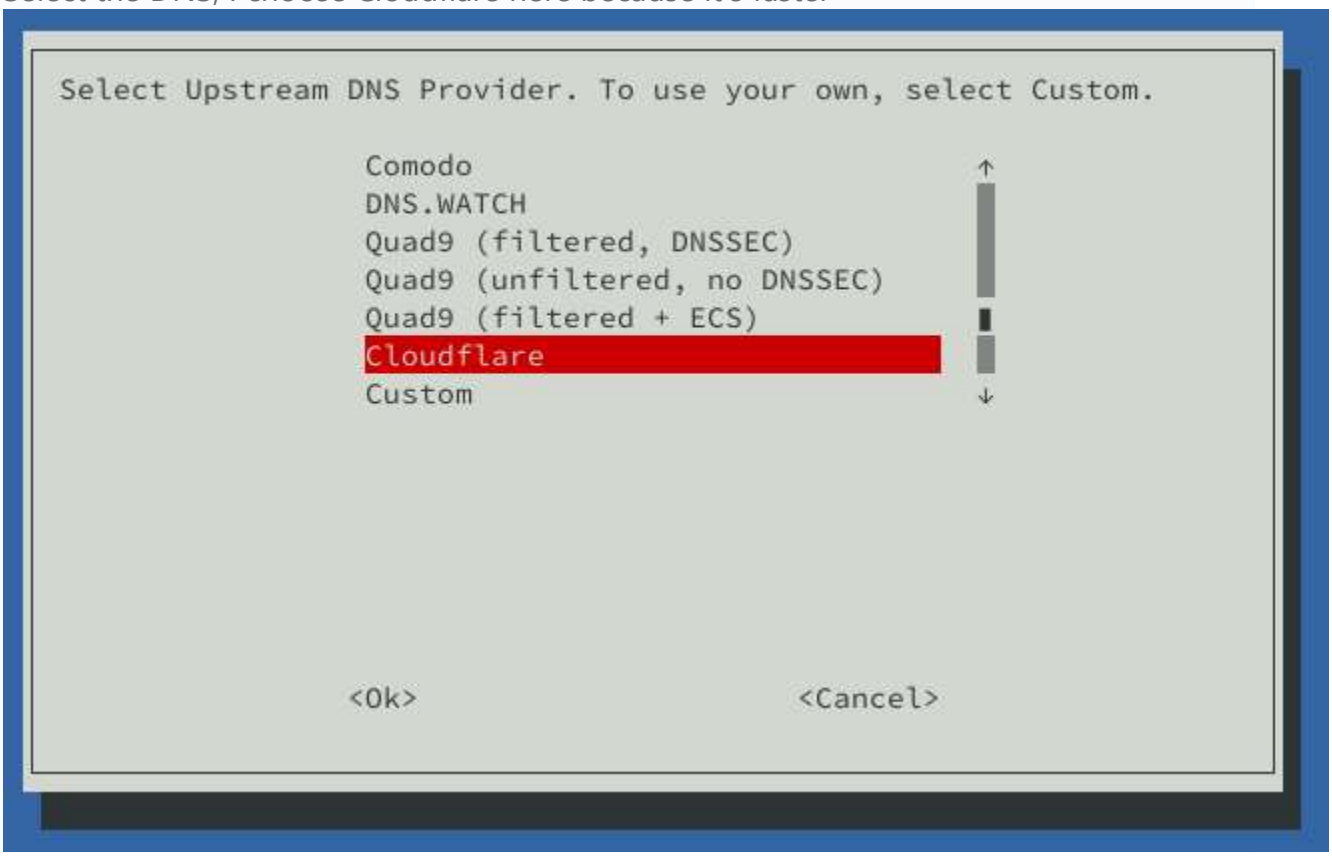
```
curl -sSL https://install.pi-hole.net | bash
```


Pi-hole automated installer
This installer will transform your device into a network-wide ad blocker!
<Ok>

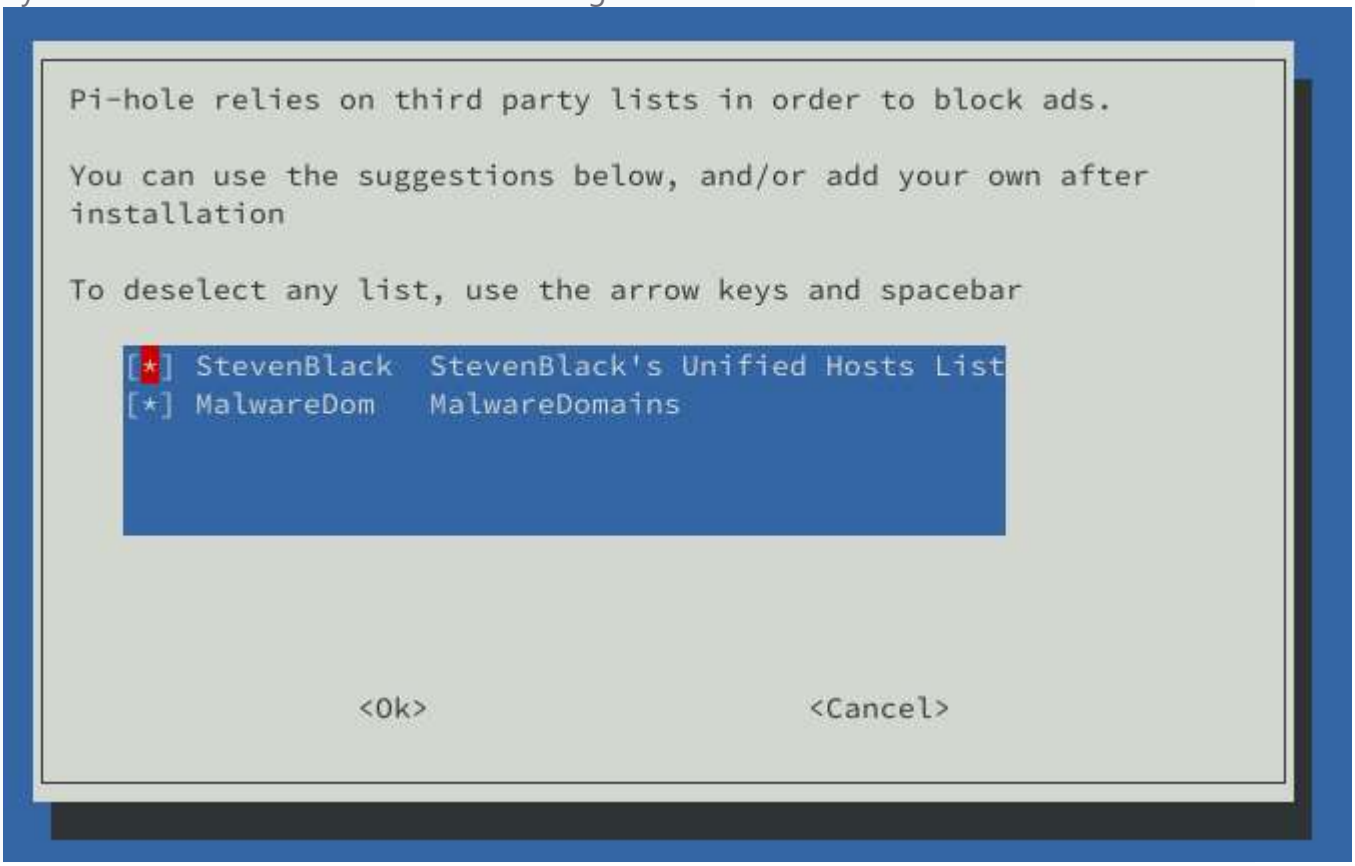

Free and open source
The Pi-hole is free, but powered by your donations:
https://pi-hole.net/donate/
<Ok>
Static IP Needed
The Pi-hole is a SERVER so it needs a STATIC IP ADDRESS to
function properly.
In the next section, you can choose to use your current network
settings (DHCP) or to manually edit them.
<Ok>

2. DNS Provider

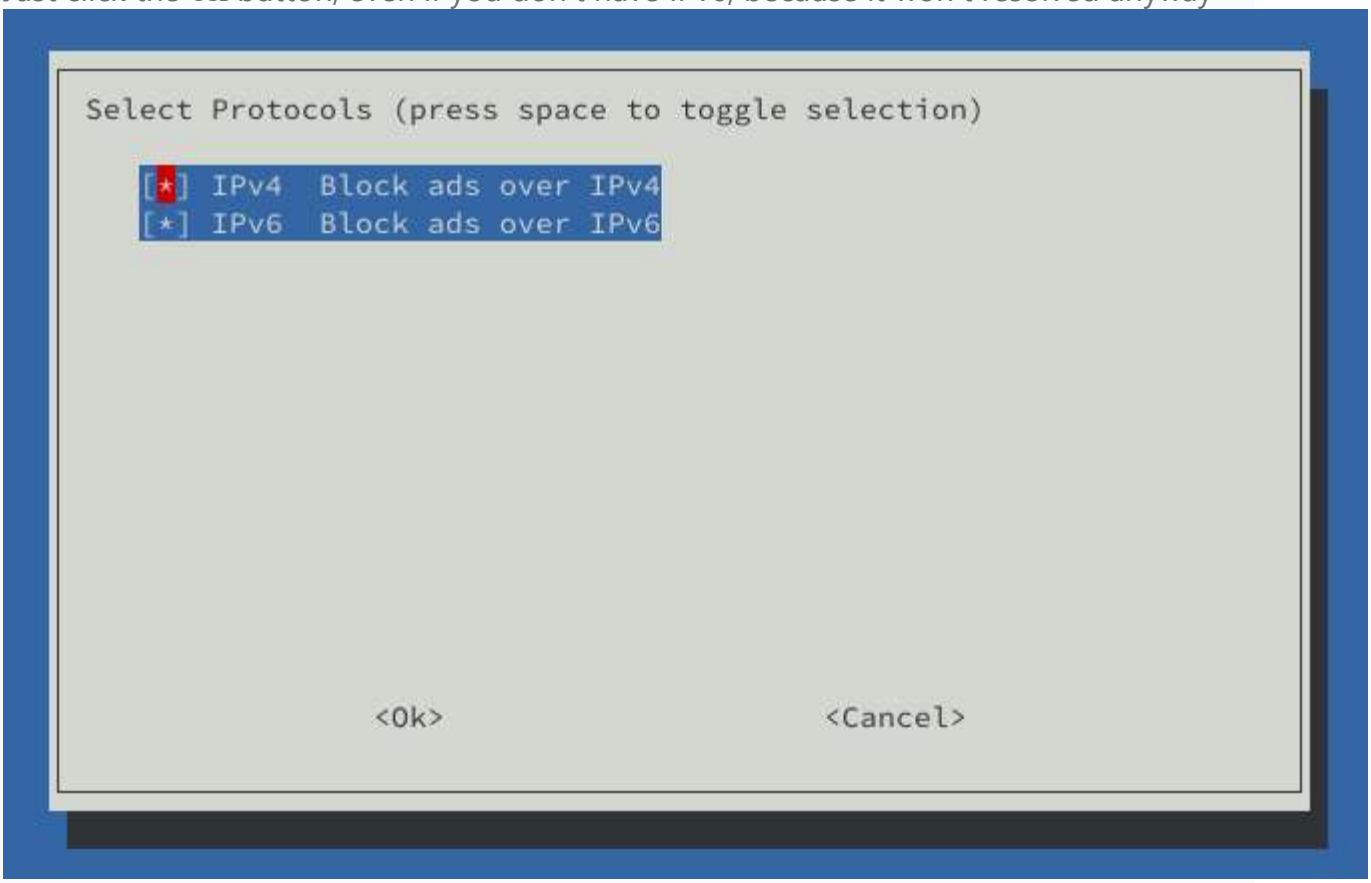
Select the DNS, I choose Cloudflare here because it's faster



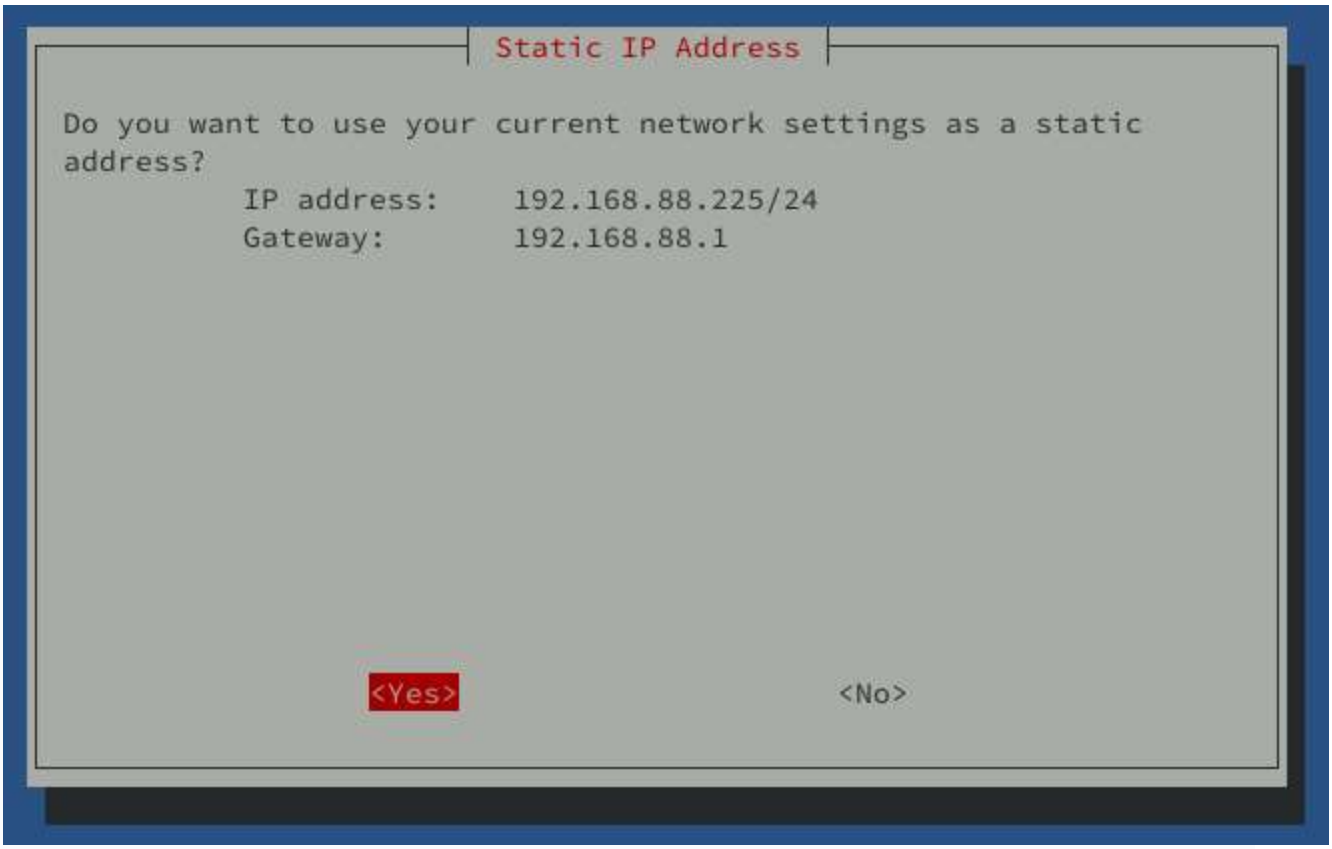
3. Third Party Lists Ads Blocker
By default both list selected. We can changes this later via Web UI.



4. IPv4 / IPv6 IP Address
Just click the OK button, even if you don't have IPv6, because it won't resolved anyway

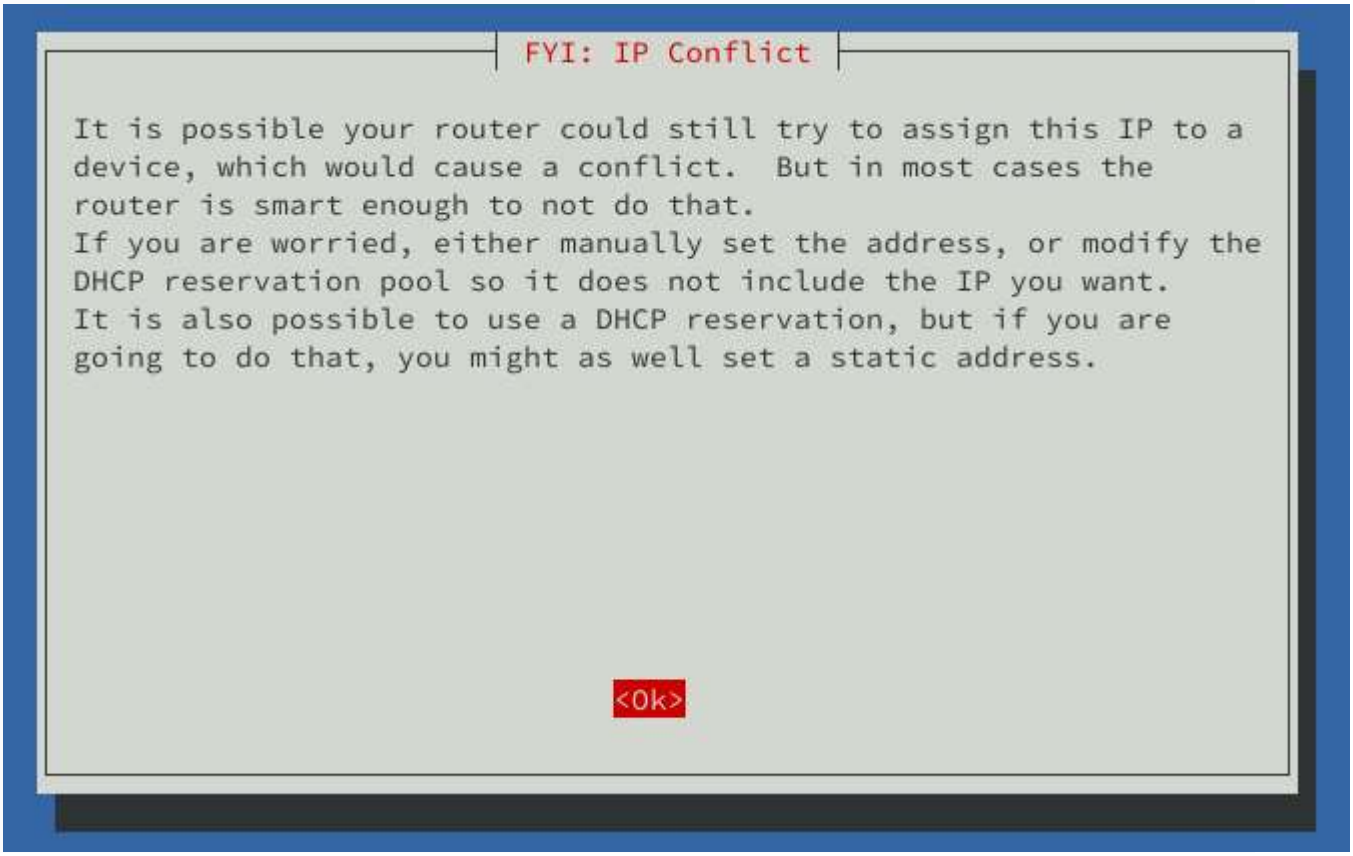


5. Static IP
Usually, the static IP assigned by the ISP router. Please check your router manual for this setting. For network (LAN) usage static IP is mandatory. Because we don't want to update the DNS every time LAN IP changes. This IP is a private IP address, not your public IP.


Static IP Address
Do you want to use your current network settings as a static address?
IP address: 192.168.88.225/24
Gateway: 192.168.88.1
<Yes>
<No>

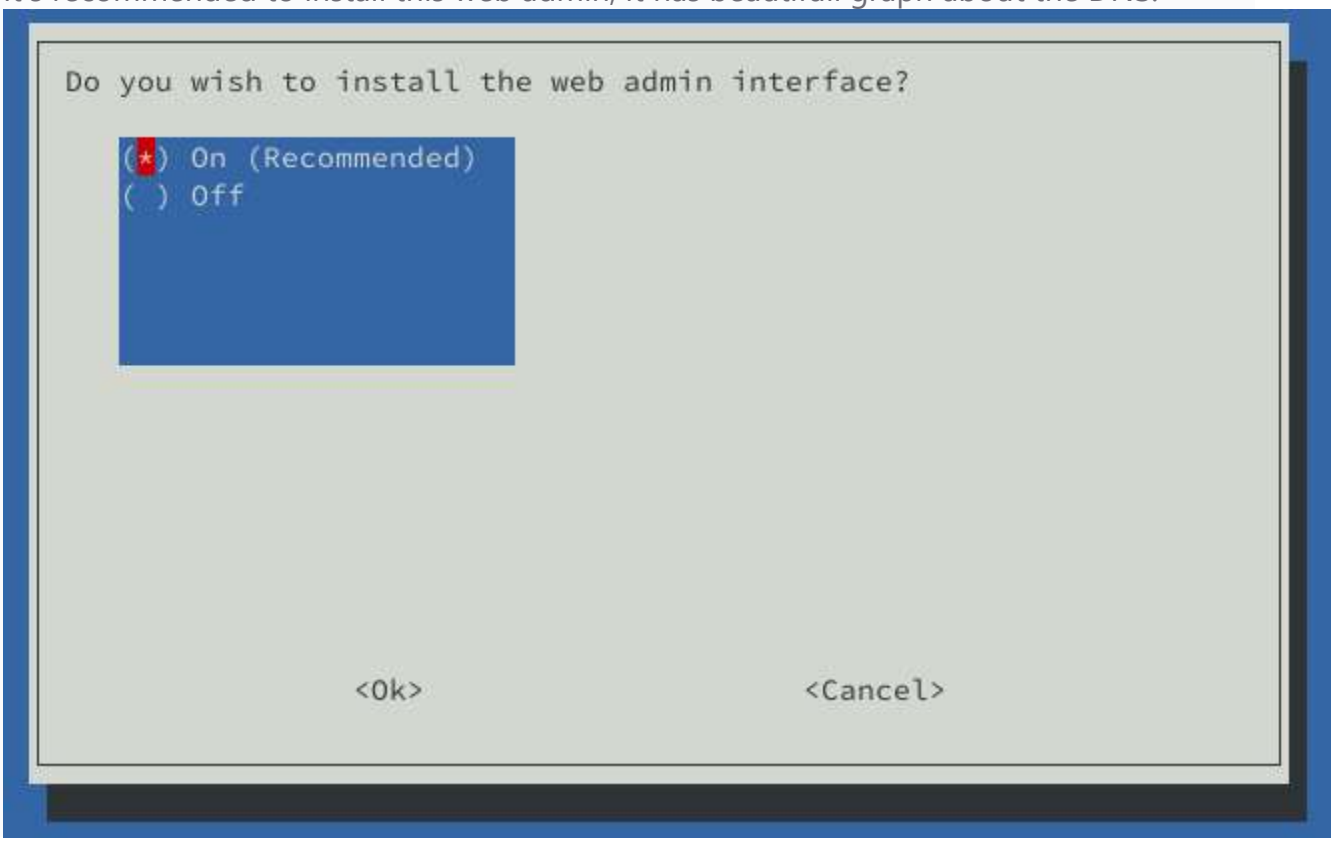
click Yes

Information

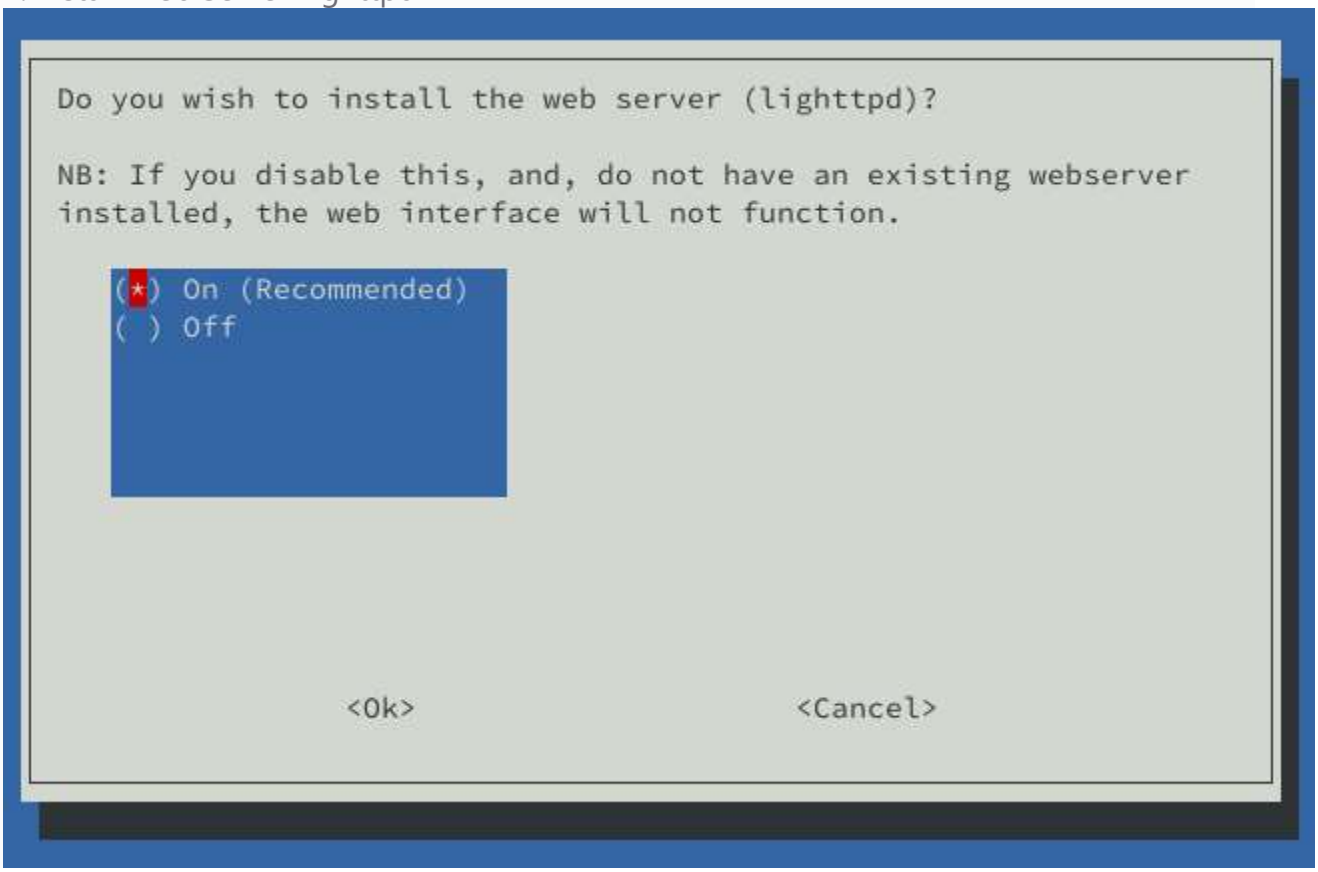


6. Install web admin Pi-hole

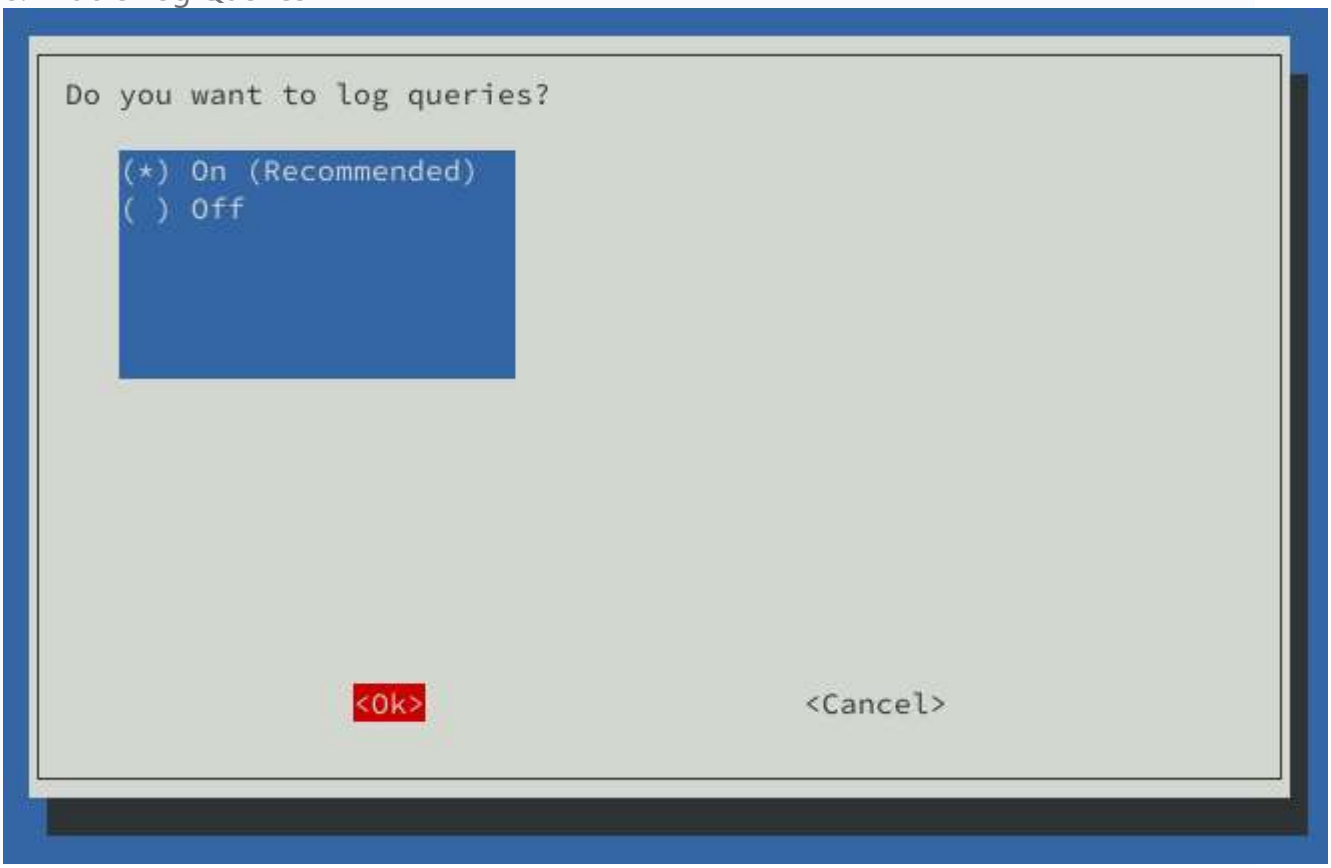
It’s recommended to install this web admin, it has beautifull graph about the DNS.



7. Install Web Server Lighttpd

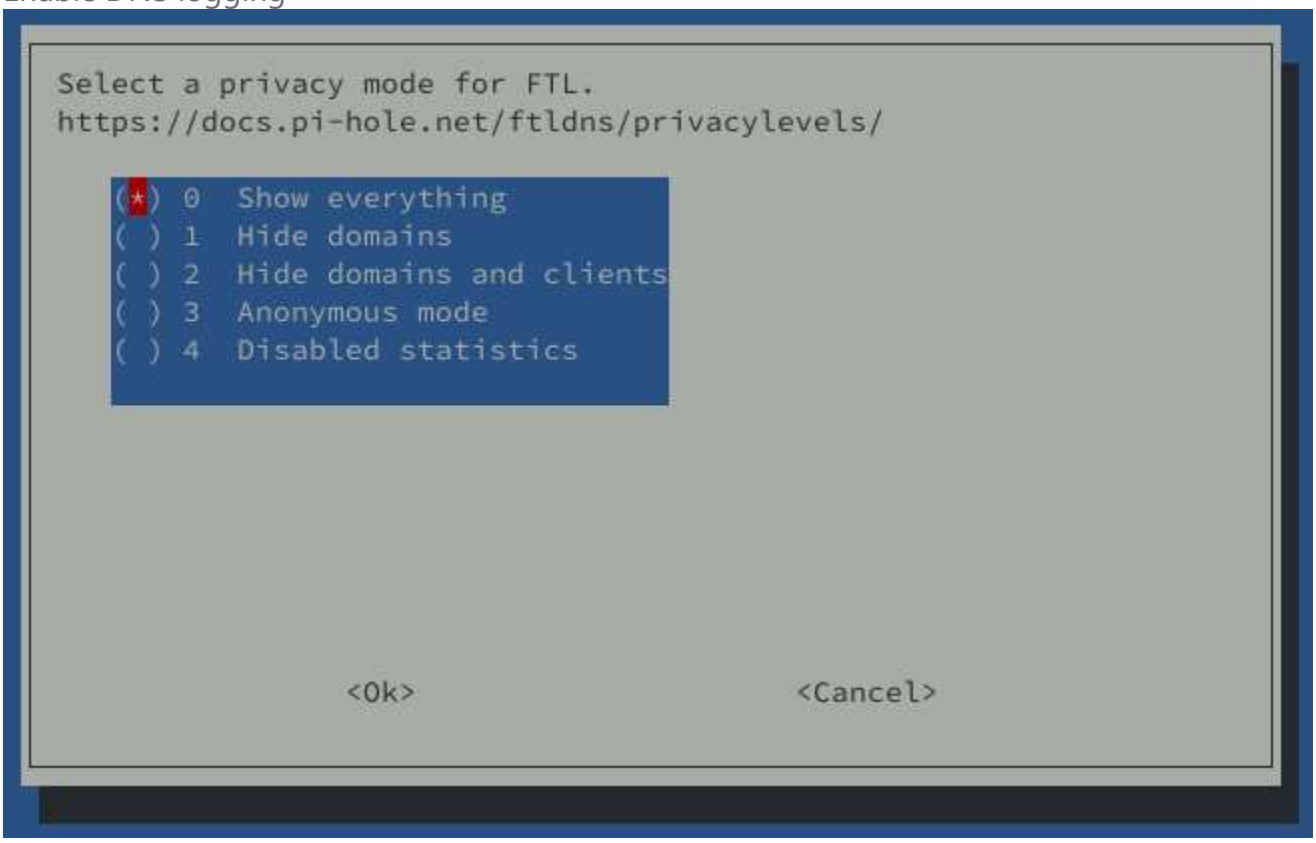


8. Enable Log Queries

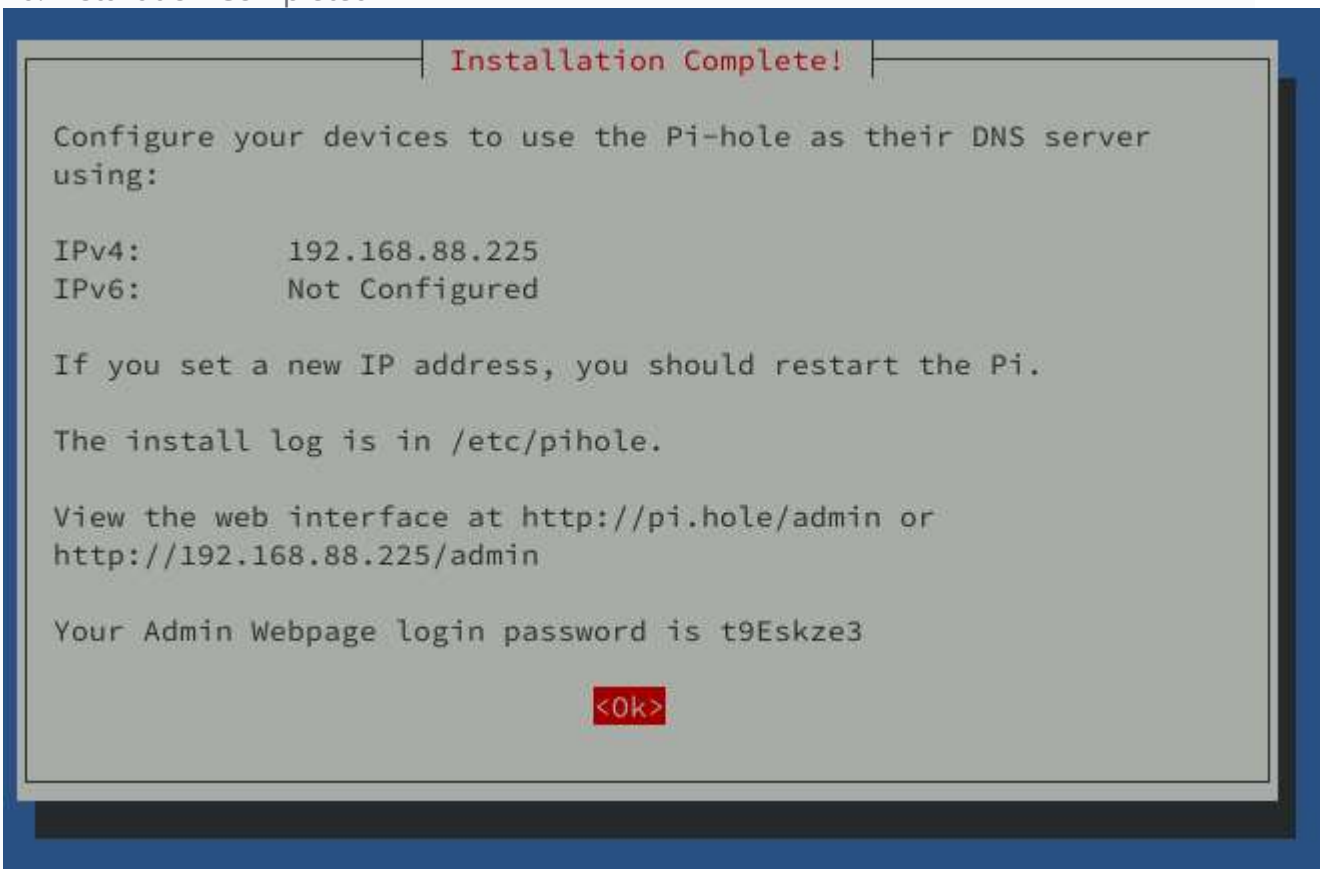


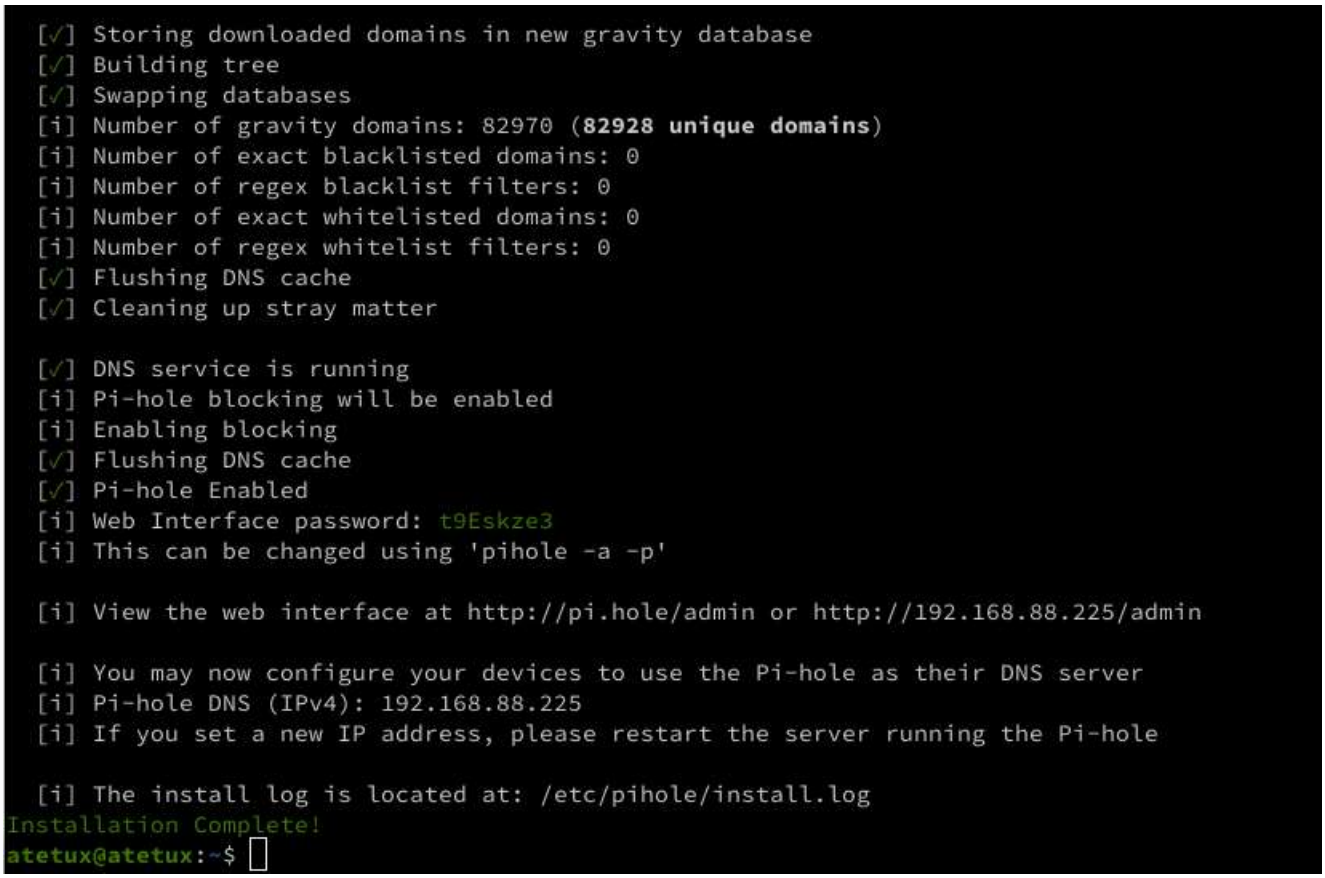
9. Logging DNS Query

Enable DNS logging



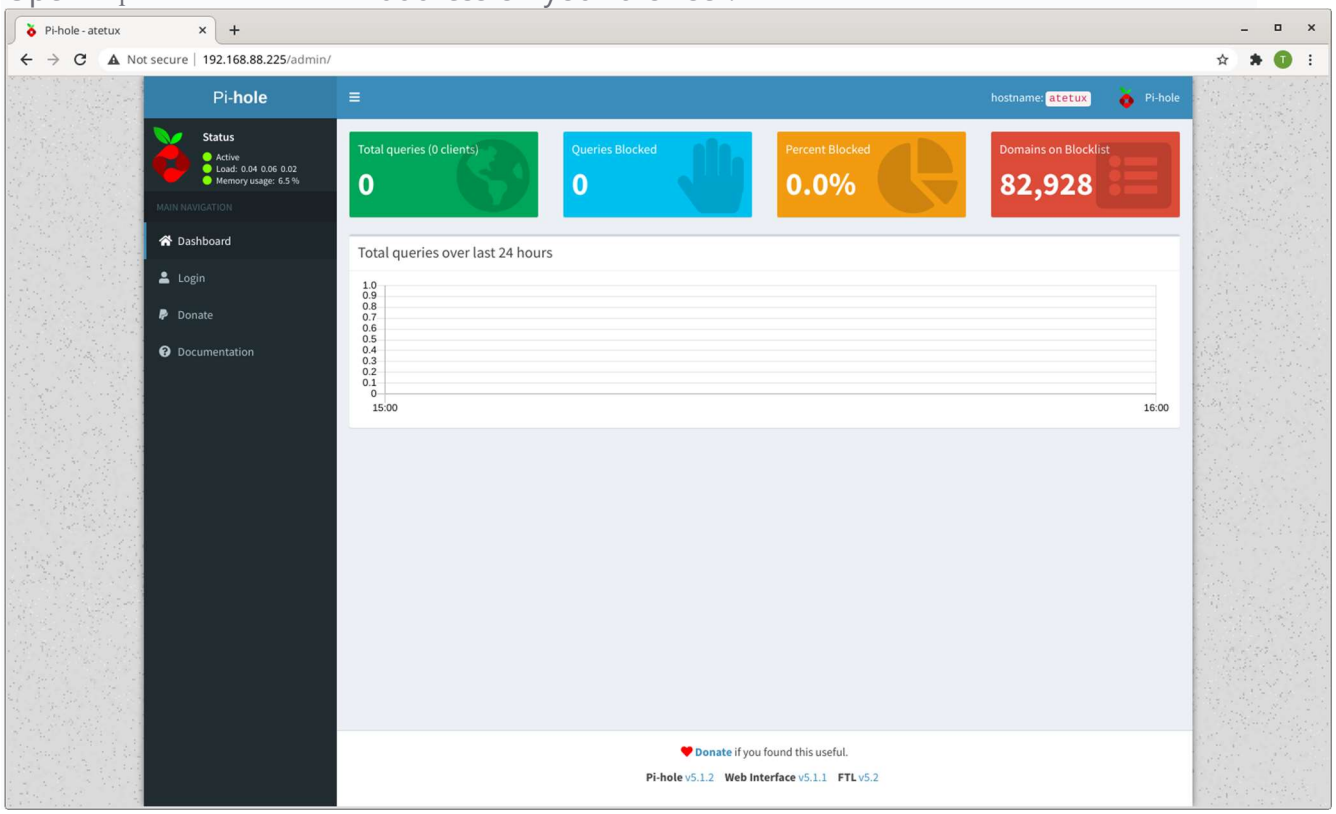
10. Installation Completed



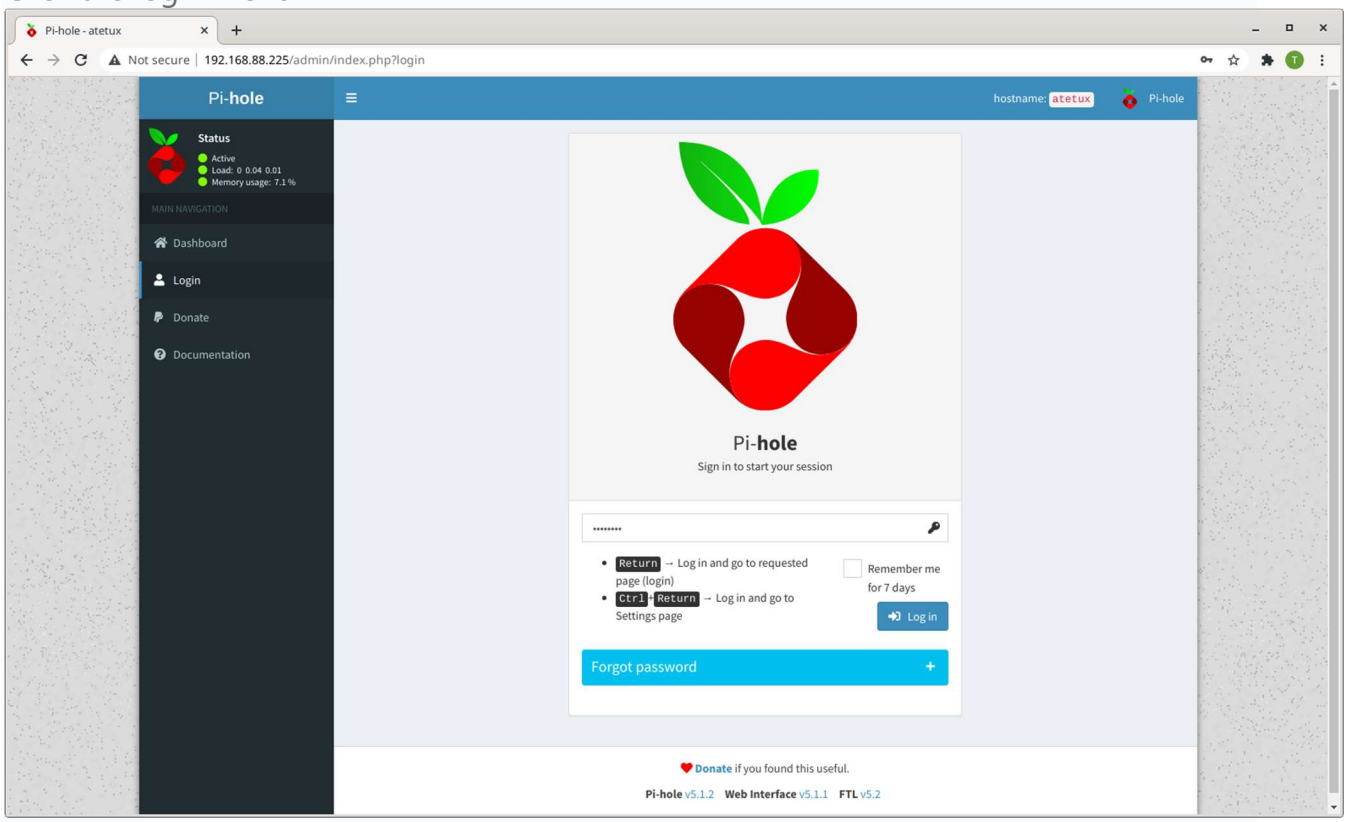

[✓] Storing downloaded domains in new gravity database
[✓] Building tree
[✓] Swapping databases
[i] Number of gravity domains: 82970 (82928 unique domains)
[i] Number of exact blacklisted domains: 0
[i] Number of regex blacklist filters: 0
[i] Number of exact whitelisted domains: 0
[i] Number of regex whitelist filters: 0
[✓] Flushing DNS cache
[✓] Cleaning up stray matter
[✓] DNS service is running
[i] Pi-hole blocking will be enabled
[i] Enabling blocking
[✓] Flushing DNS cache
[✓] Pi-hole Enabled
[i] Web Interface password: t9Eskze3
[i] This can be changed using 'pihole -a -p'
[i] View the web interface at http://pi.hole/admin or http://192.168.88.225/admin
[i] You may now configure your devices to use the Pi-hole as their DNS server
[i] Pi-hole DNS (IPv4): 192.168.88.225
[i] If you set a new IP address, please restart the server running the Pi-hole
[i] The install log is located at: /etc/pihole/install.log
Installation Complete!
atetux@atetux:~$

Pihole Web UI

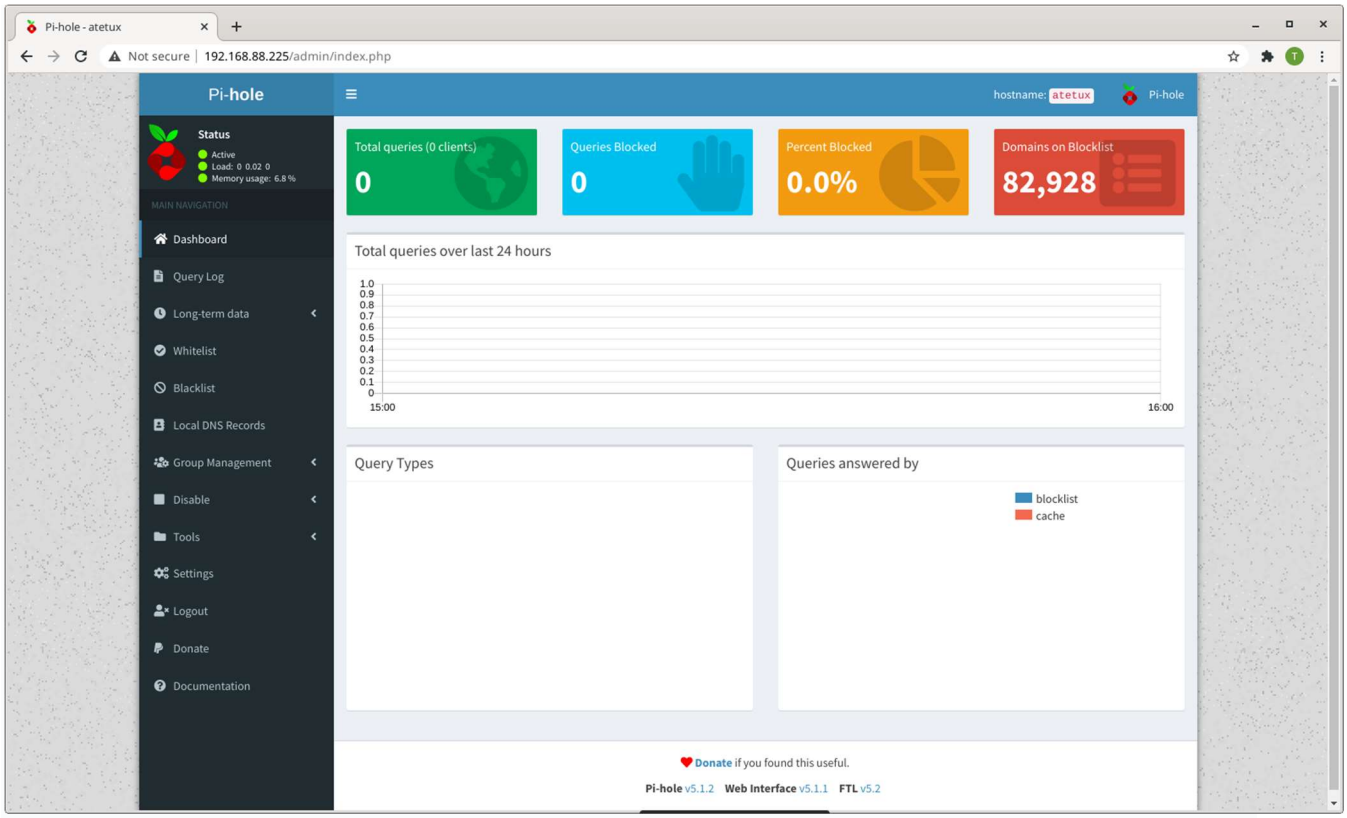
Open http://SERVER-IP/admin/ address on your browser.



Click the login menu



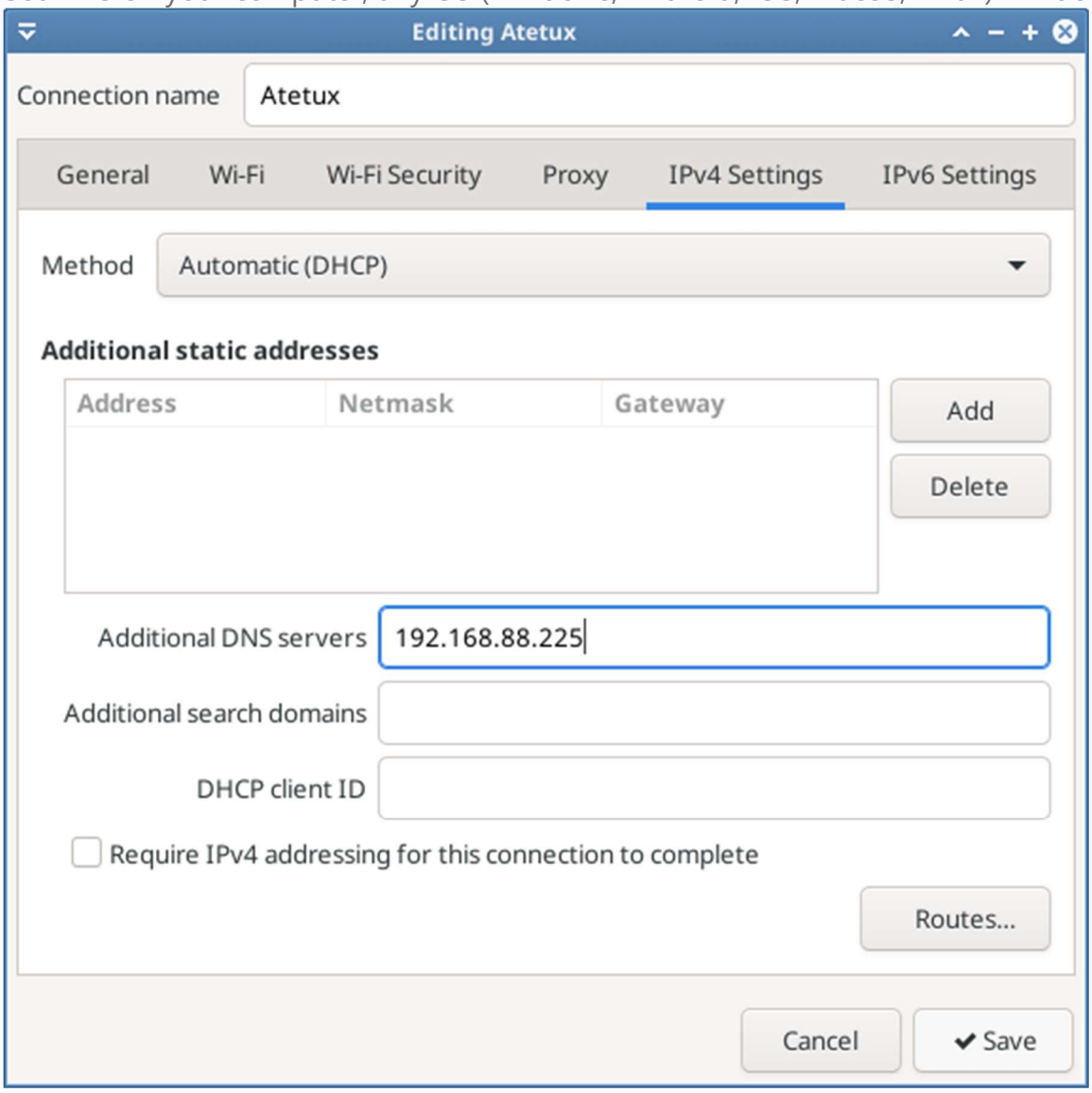
enter the password generated by pihole installer on step 10.



it’s still empty, because no one use that DNS yet.

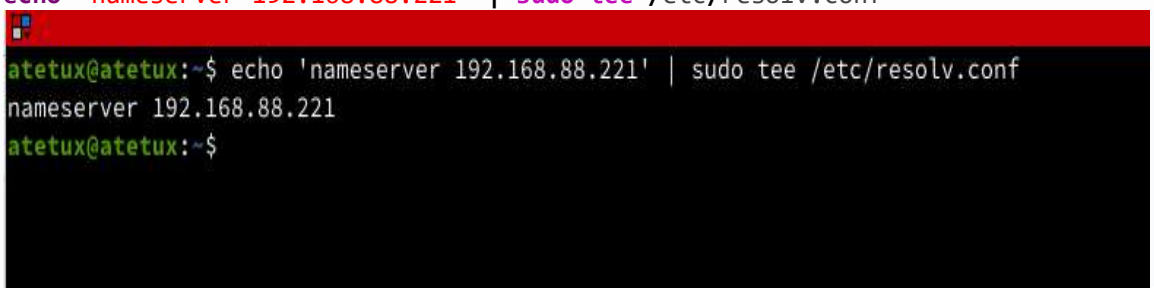
Using DNS Pihole

Set DNS on your computer, any OS (Windows, Android, iOS, MacoS, Linux) will do it.



to set DNS manually on Linux

```
echo 'nameserver 192.168.88.221' | sudo tee /etc/resolv.conf
```



after a few minutes browsing check the graph on Pihole dashboard