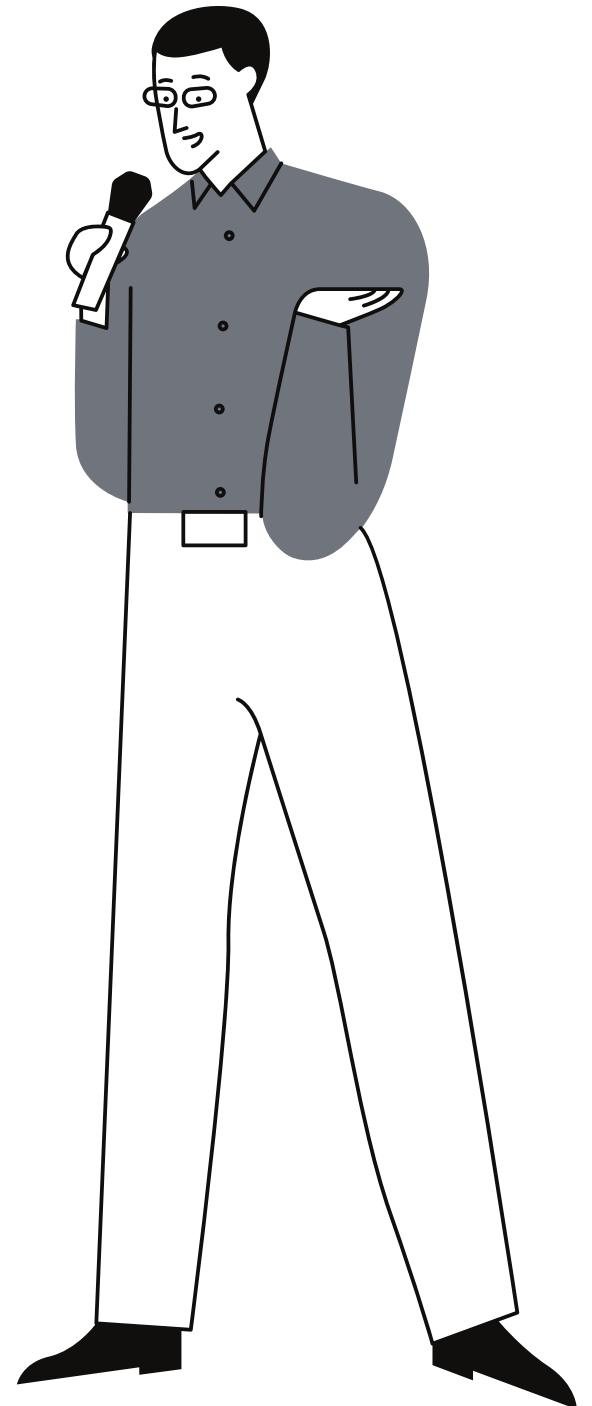


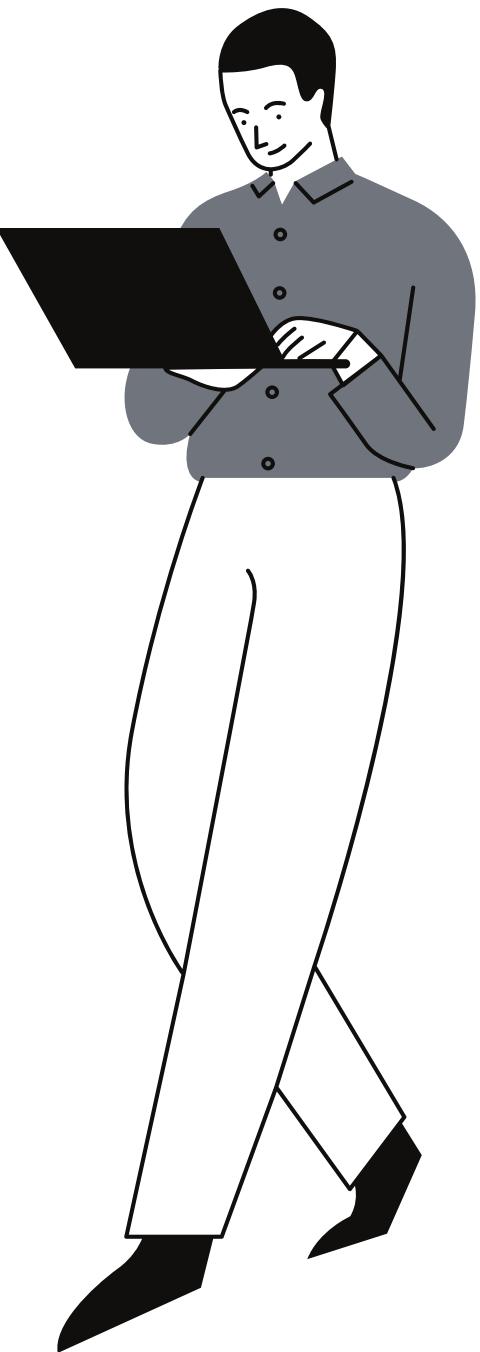
Self Hosting at Home

Giving life to your
old hardware !



Today's Agenda

- 1 What is selfhosting and why you should self host?
- 2 What can you selfhost and where?
- 3 Things to know while self hosting your applications.
- 4 Famous tools that you can self host at home.





\$ whoami

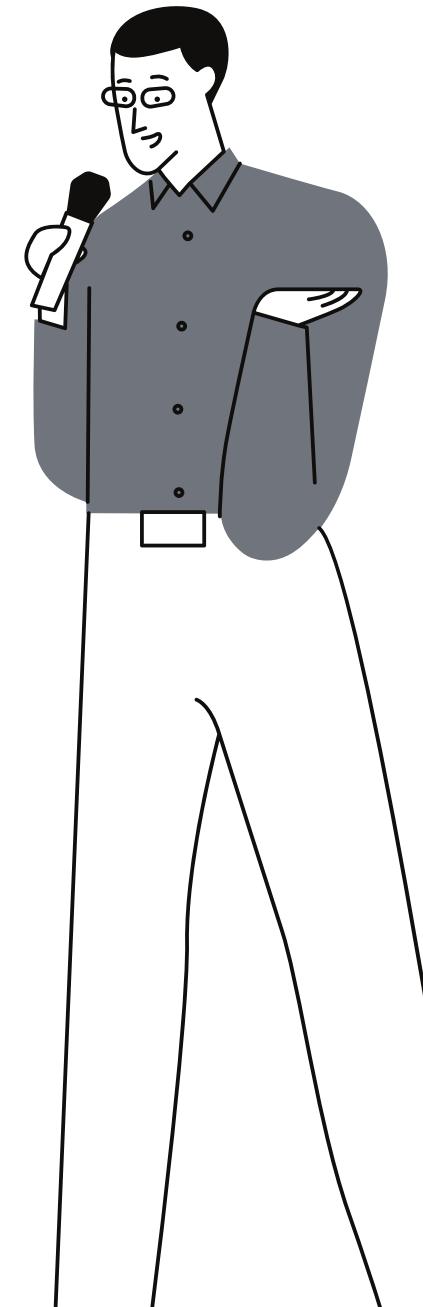
- Application Developer (Intern) @ Ather Energy
- Maker.
- Self proclaimed Jedi master :)



@adixthya

Let's Start!

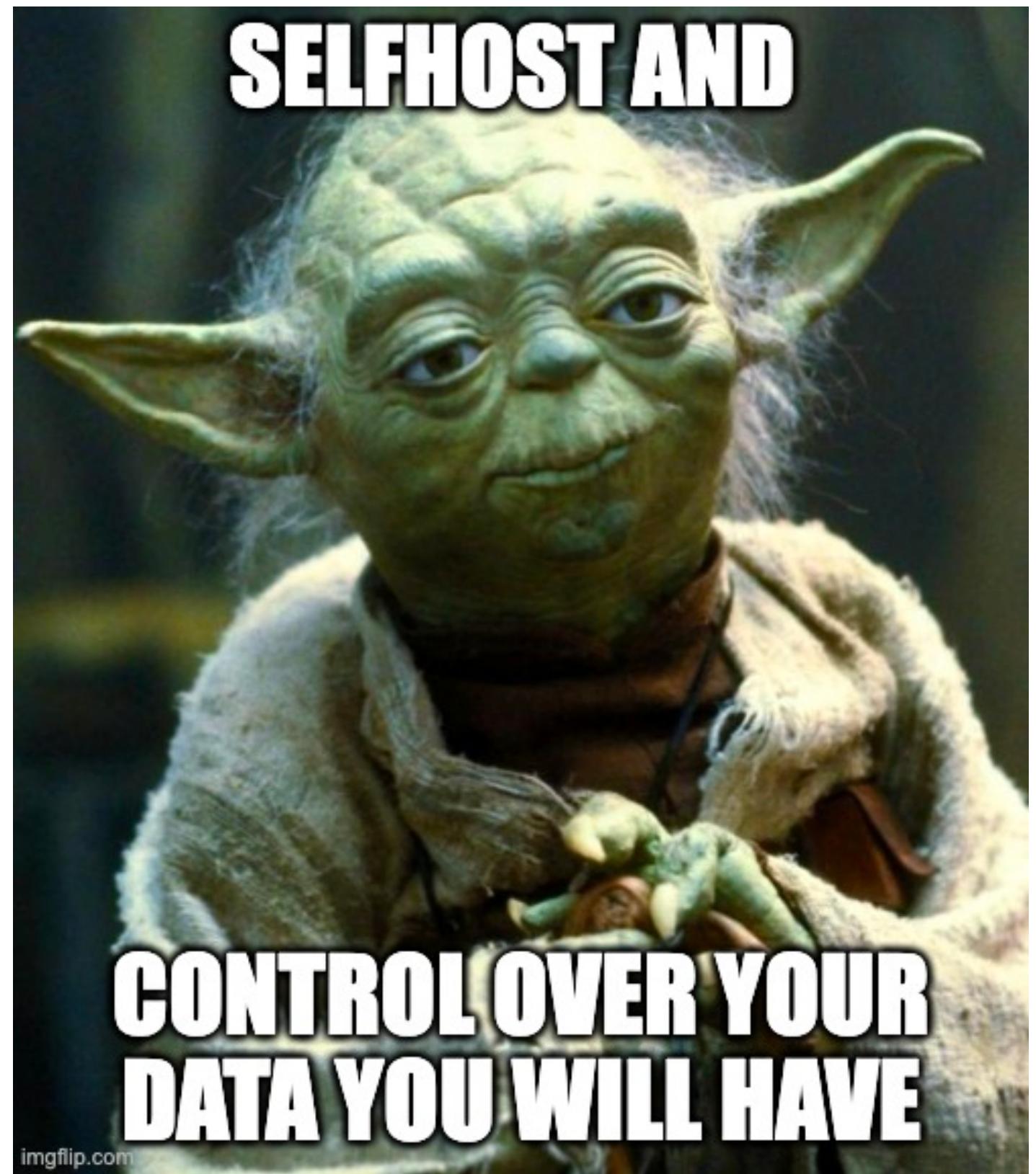
Are you ready?



What is Self Hosting ?

Why ?

1



Why ?

2

Me: Privacy matters

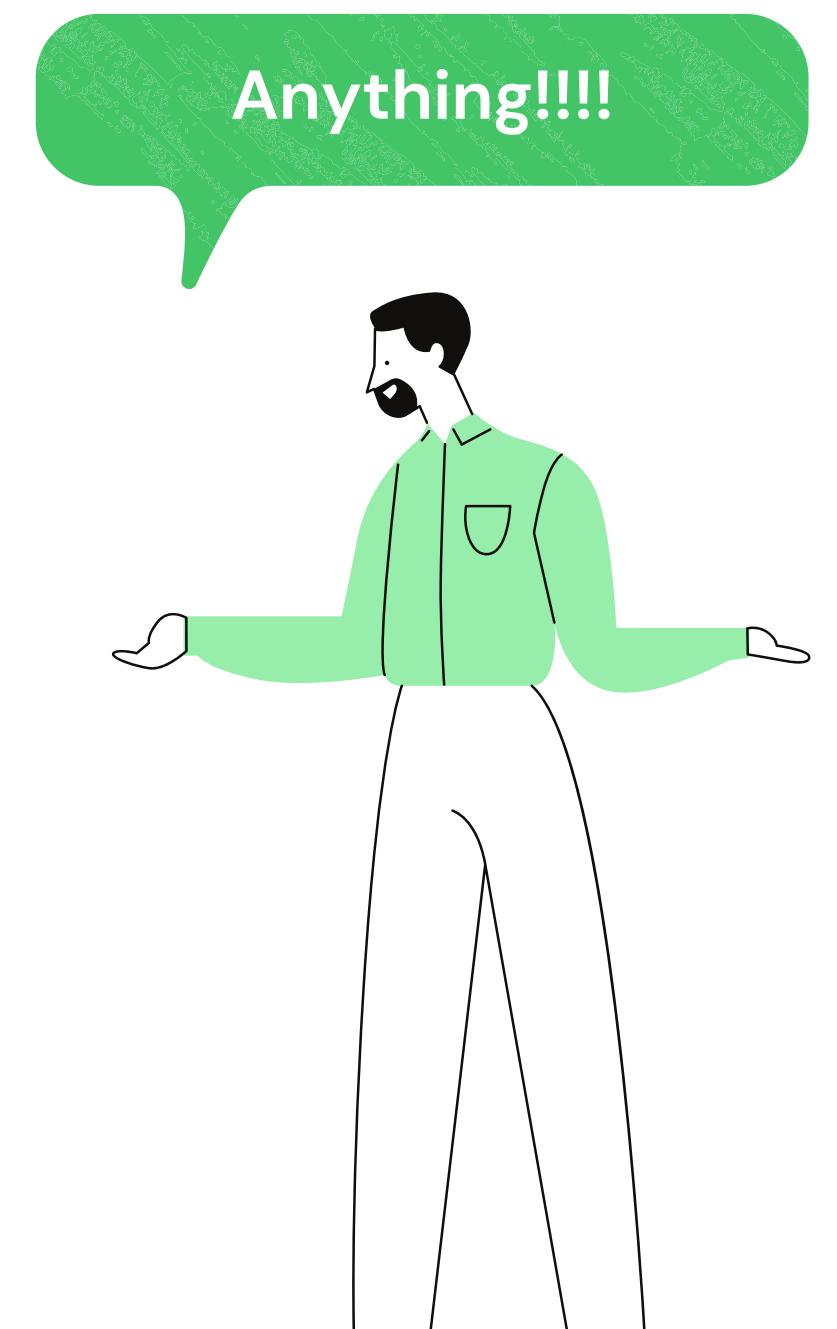
Google:



Why ?

- 3 No vendor lock in.
- 4 Cost Effective
- 5 Experience++

What can you self host?



What i'm self hosting at home

- 1 NAS - Open Media Vault
- 2 Media Server - Jellyfin
- 3 Ad-blocker and DNS Server- PiHole
- 4 Mailing List Manager - Listmonk
- 5 Container Management – Portainer
- 6 VPN – Tailscale
- 7 DashCam – DroidDashcam
- 8 Auto Backup – SMB Sync 2

**Where all can you host
these?**

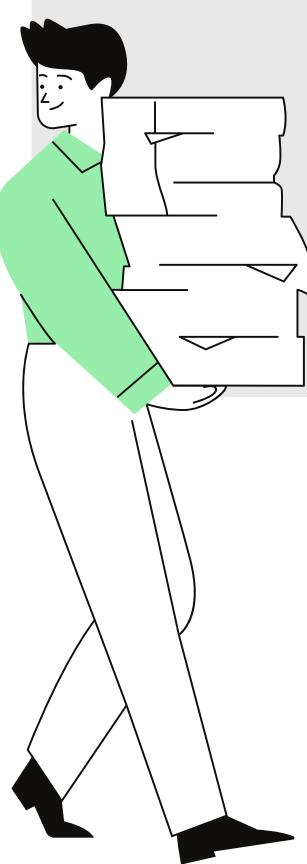
Your own hardware

- Old Laptop or Desktop
- Raspberry Pi
- Old Android Phone
- Old Server

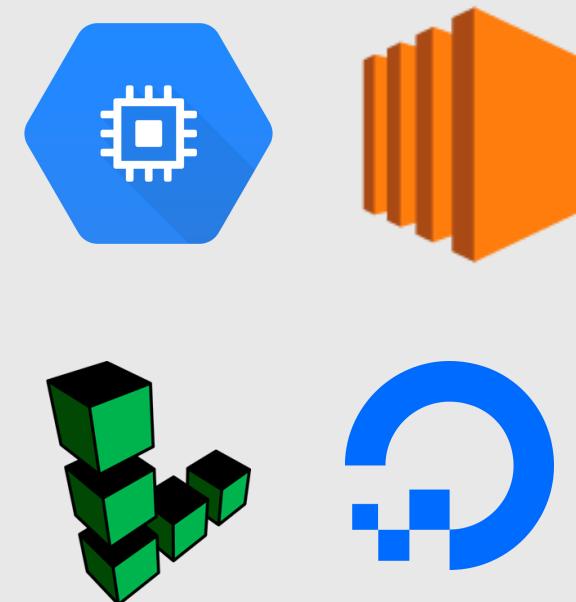


X

- Power Failure
- Network Stability
- Backup And Redundancy
- Not Idiot Proof or Kid safe



Cloud



- AWS EC2
- GCP Compute Engine
- Digital Ocean Droplet
- Linode

X

- Vendor Lock In
- Data stored in another server
- Security
- Cost



My Setup :



- 1 Raspberry Pi 3B (1.2 Ghz quad-core, 1Gb RAM)
- 2 1 TB Seagate Hard Drive, 3.5", 7200 RPM
- 3 10W PSU

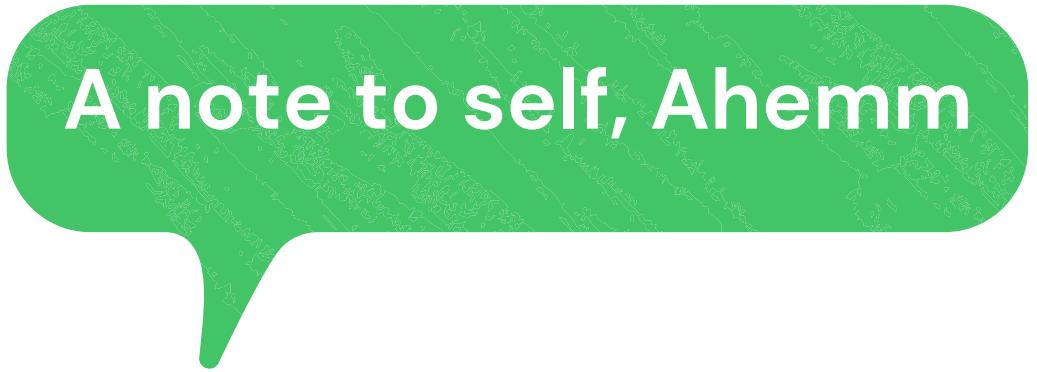
Self Hosting at Home

101

Steps :

- 1 Requirement
- 2 Network
- 3 Configuration

**Always read the hardware
and software requirement of
the application from the
documentation before
installation**



A note to self, Ahemm

Ouch :/

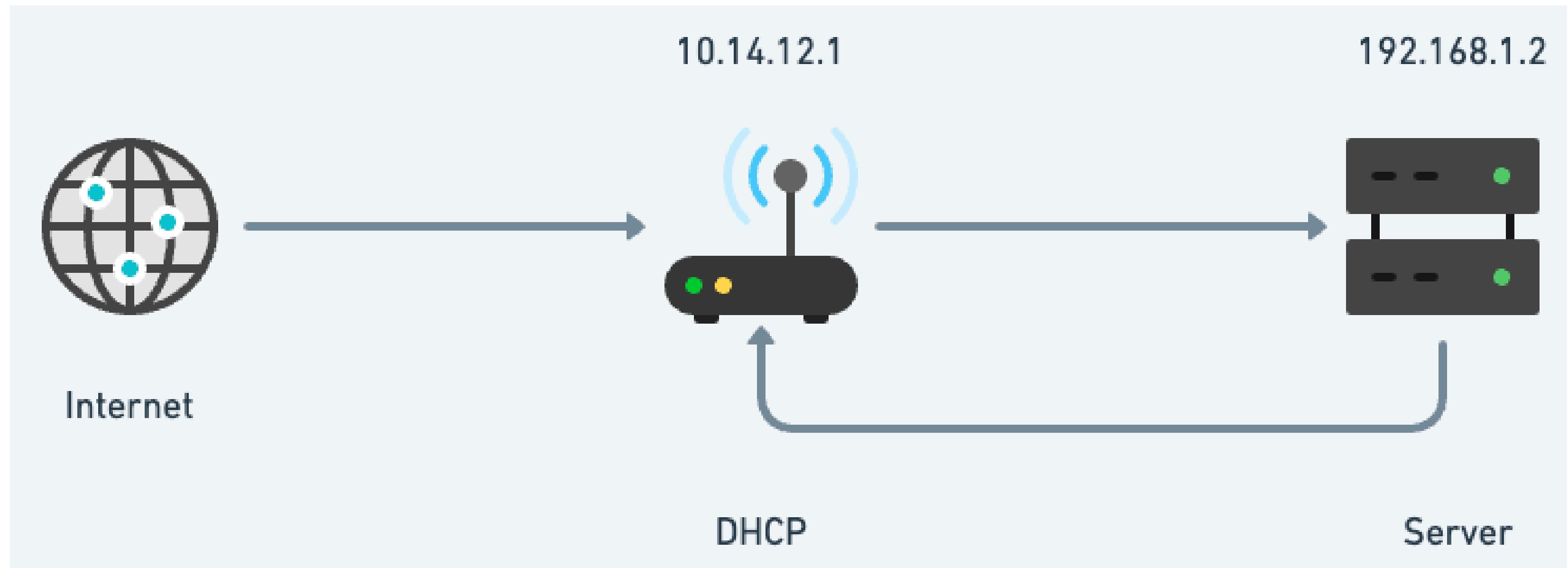


This definitely didn't happen



Chapter 2

Network



1

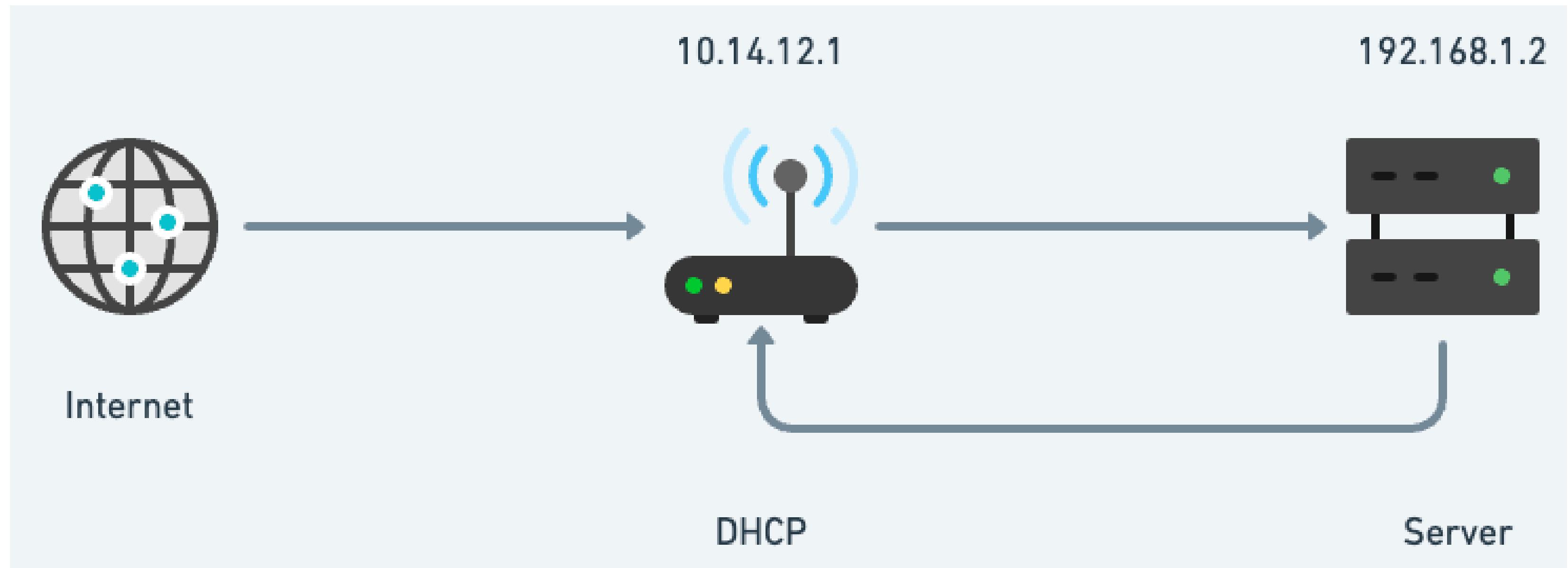
Setup Ngnix or Caddy

2

Port Forwarding

3

Enjoy your movie from another country



1

Setup Ngnix or Caddy

2

Port Forwarding

3

Enjoy your movie from another country

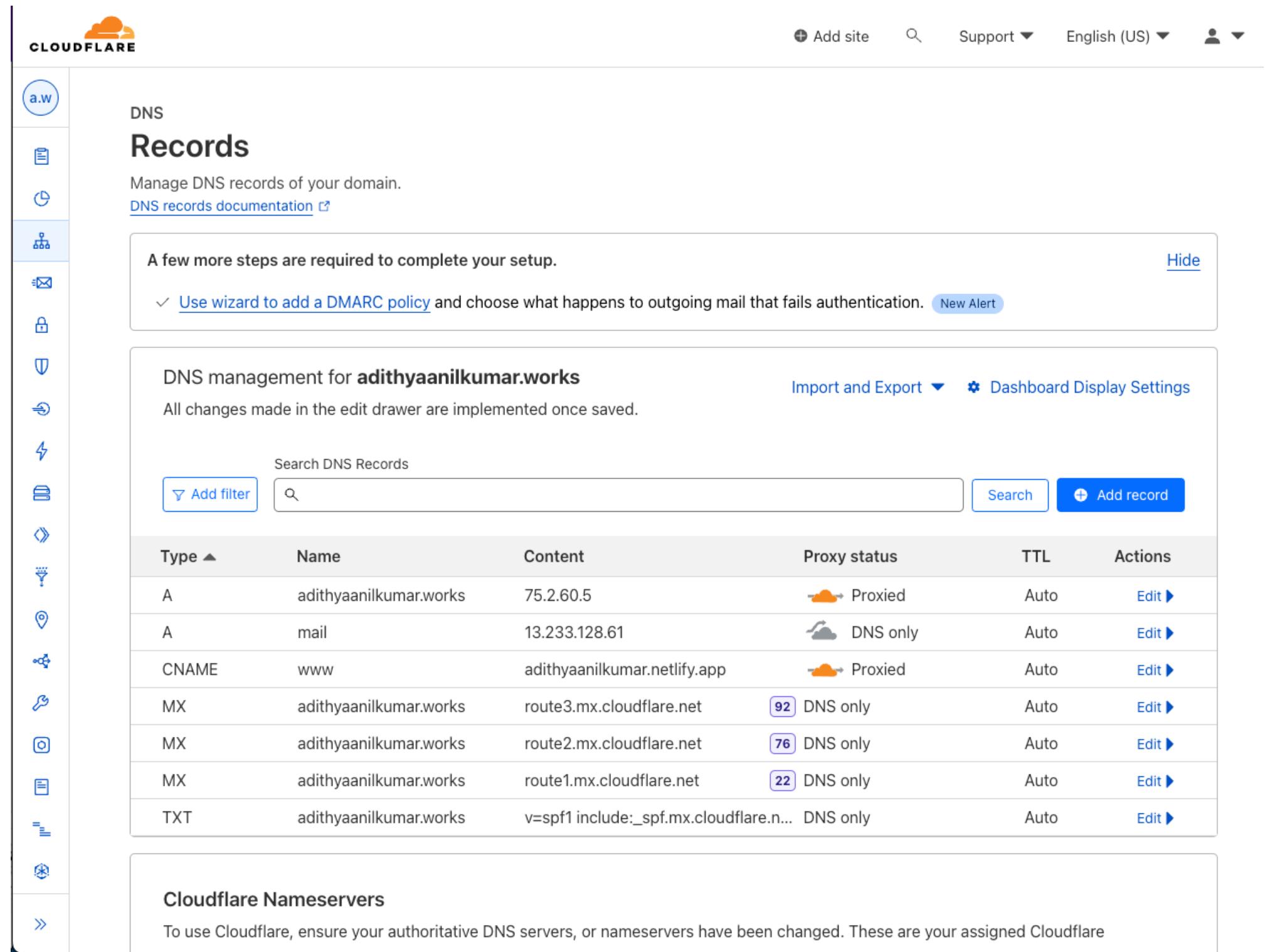
Problem 1

Dynamic IP

Solution :

Dynamic DNS





The screenshot shows the Cloudflare DNS management interface for the domain `adithyaanilkumar.works`. The left sidebar contains various management icons. The main area is titled "Records" and displays a table of DNS records. The table has columns for Type, Name, Content, Proxy status, TTL, and Actions.

Type	Name	Content	Proxy status	TTL	Actions
A	adithyaanilkumar.works	75.2.60.5	Proxied	Auto	Edit
A	mail	13.233.128.61	DNS only	Auto	Edit
CNAME	www	adithyaanilkumar.netlify.app	Proxied	Auto	Edit
MX	adithyaanilkumar.works	route3.mx.cloudflare.net	92 DNS only	Auto	Edit
MX	adithyaanilkumar.works	route2.mx.cloudflare.net	76 DNS only	Auto	Edit
MX	adithyaanilkumar.works	route1.mx.cloudflare.net	22 DNS only	Auto	Edit
TXT	adithyaanilkumar.works	v=spf1 include:_spf.mx.cloudflare.n...	DNS only	Auto	Edit

Below the table, there is a section titled "Cloudflare Nameservers" with instructions on how to change them.

Use dynamic IP addresses

Most Internet service providers and some hosting providers dynamically update their customer's IP addresses. These customers must then update the new origin server IPs in their Cloudflare DNS.

Cloudflare API

Create a script to monitor IP address changes and then have that script push changes to the [Cloudflare API](#).

ddclient

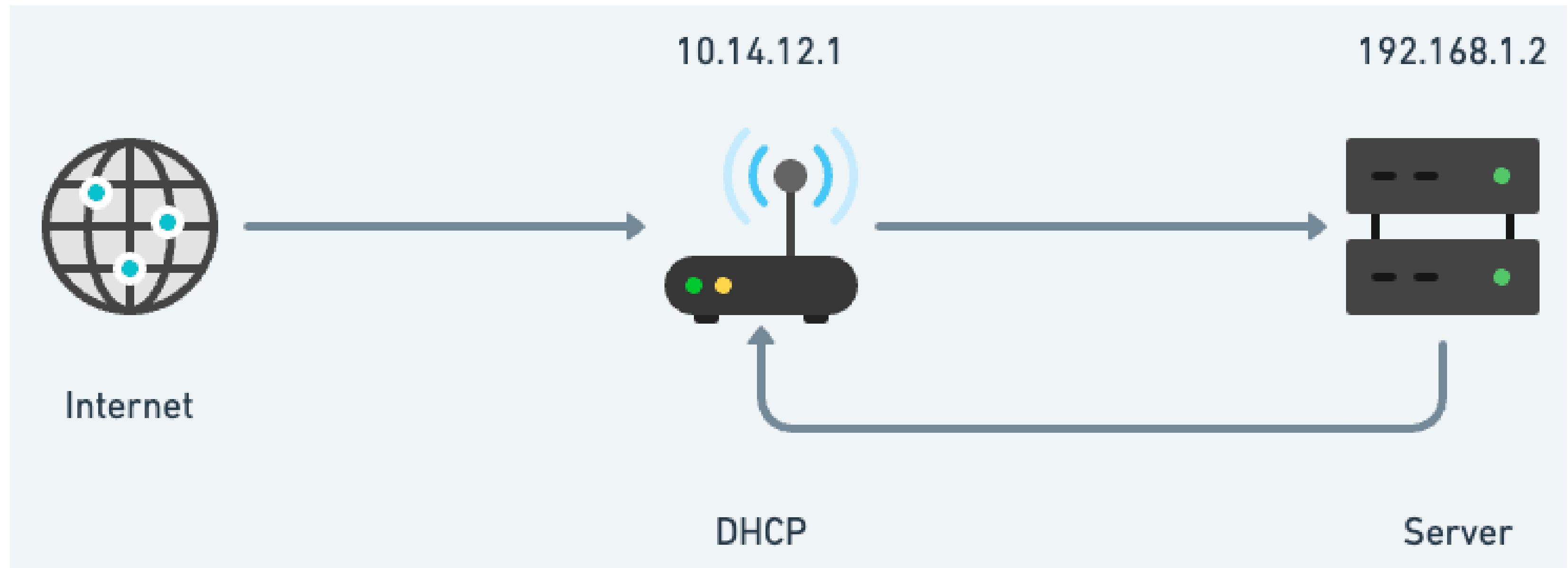
[ddclient](#) is a third-party Perl client used to update dynamic DNS entries for accounts on various DNS providers.

DNS-O-Matic

[DNS-O-Matic](#) is a third-party tool that announces dynamic IP changes to multiple services.

Configuration of DNS-O-Matic requires the following information:

- Email: <CLOUDFLARE ACCOUNT EMAIL ADDRESS> (associated account must have sufficient privileges to manage DNS)
- API Token: <CLOUDFLARE GLOBAL API KEY> (for details refer to [API Keys](#))
- Domain: <example.com>
- Hostname: *dynamic*



1

Setup Ngnix or Caddy

2

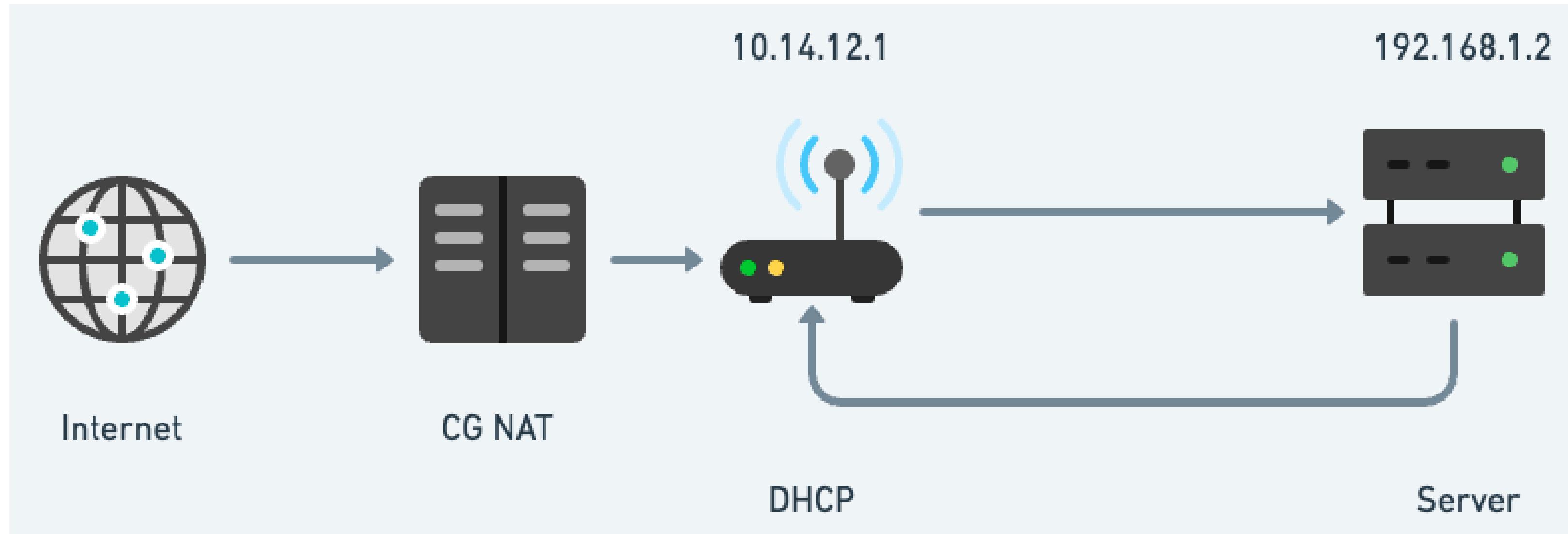
Port Forwarding

3

Enjoy your movie from another country

Problem 2

CG NAT



1

Setup Ngnix or Caddy

2

Port Forwarding

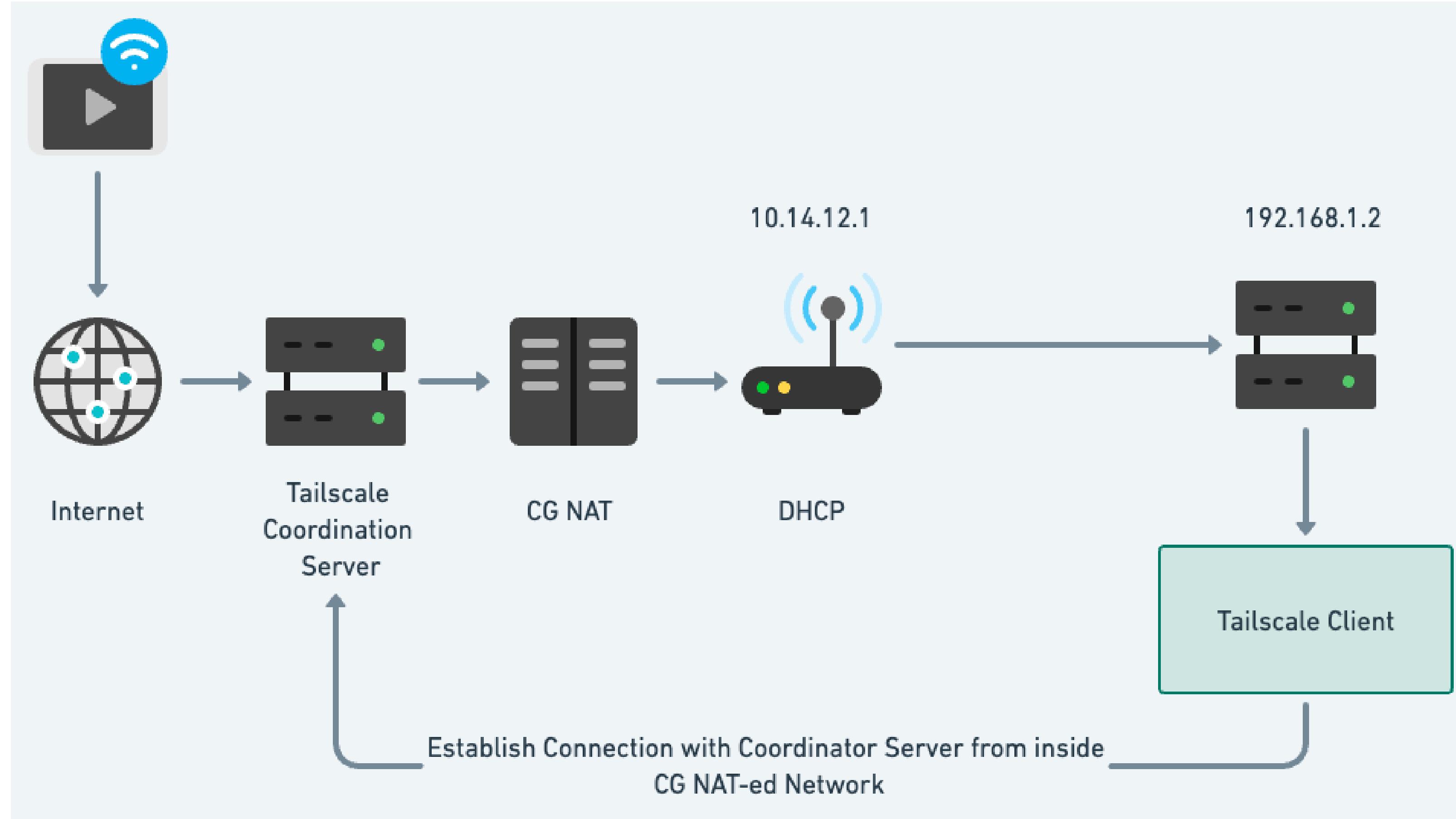
3

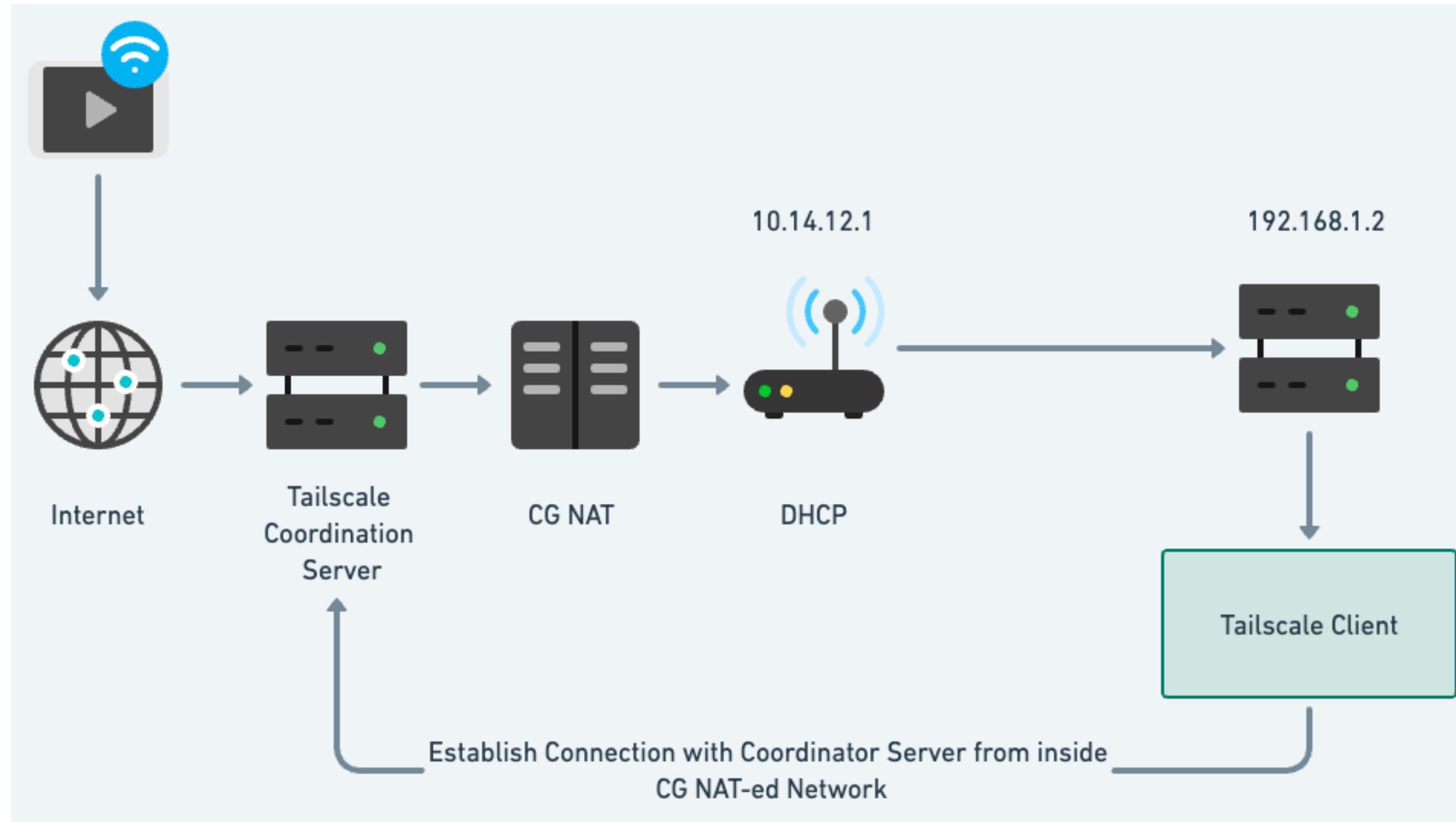
Enjoy your movie from another country

Solution :

Reverse SSH Tunnel or Reverse VPN Tunnel







1

Setup Ngnix or Caddy

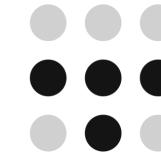
2

Port Forwarding

3

Enjoy your movie from another country

Easy setup



tailscale

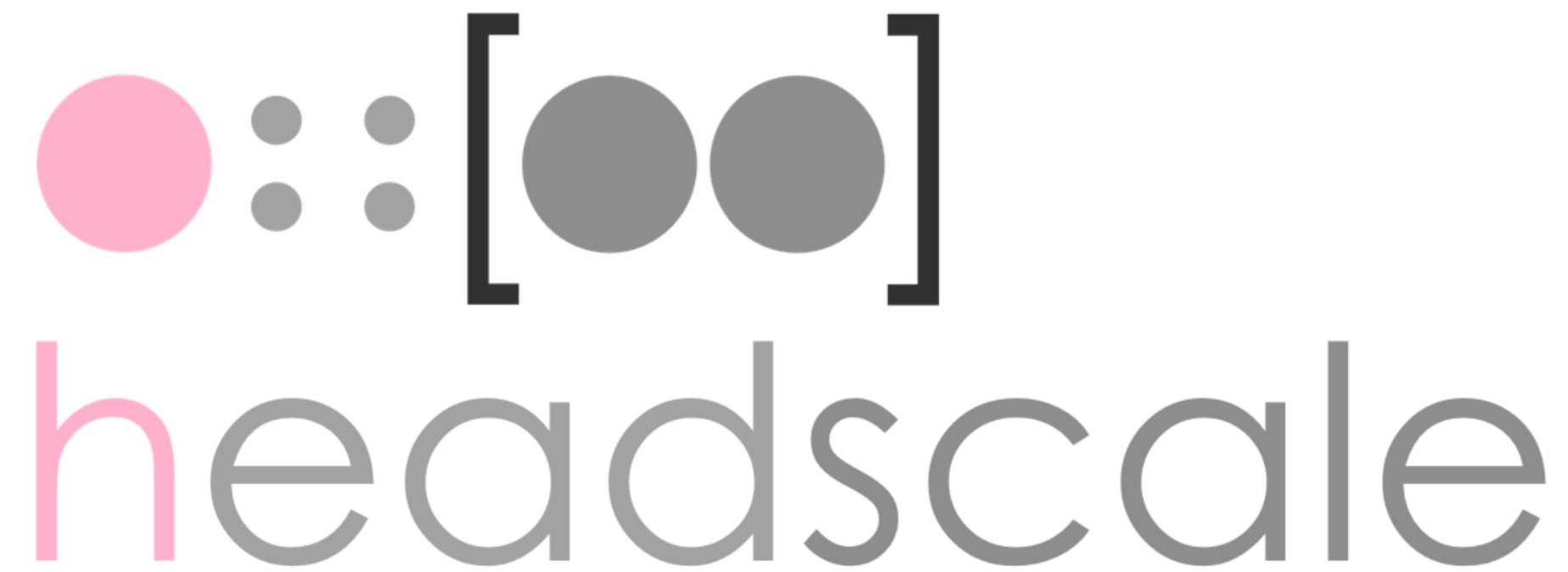
1

`sudo apt-get install tailscale`

2

`sudo tailscale up`

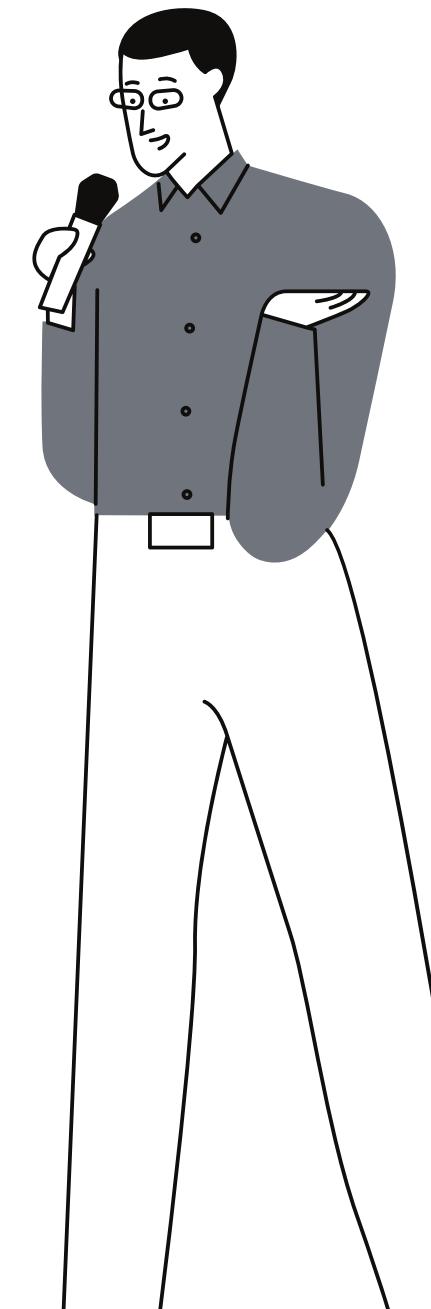
OSS Alternative



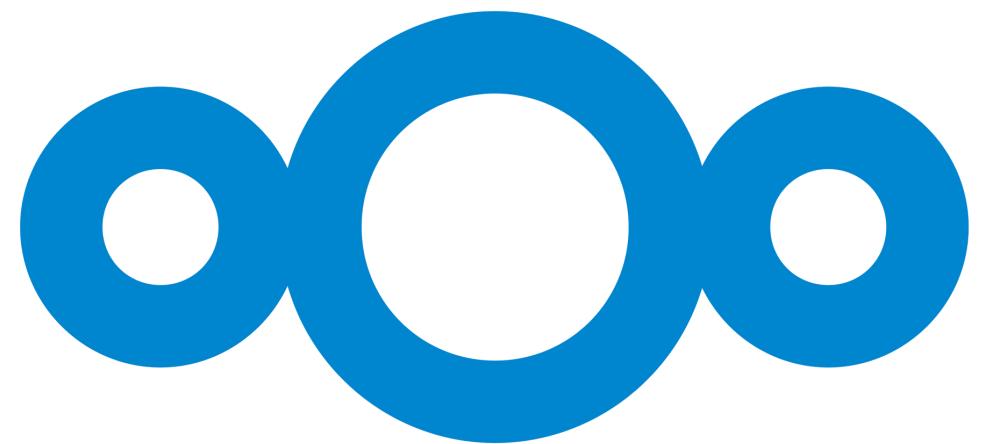
<https://headscale.net/>

Quizz Time

Are you ready?







Nextcloud



Nextcloud

1. Install Docker on your Linux installation by following the official documentation: <https://docs.docker.com/engine/install/#server>. The easiest way is installing it by **using the convenience script**:

```
curl -fsSL https://get.docker.com | sudo sh
```

2. If you need ipv6 support, you should enable it by following <https://github.com/nextcloud/all-in-one/blob/main/docker-ipv6-support.md>.

3. Run the command below in order to start the container on Linux and without a web server or reverse proxy (like Apache, Nginx and else) already in place:

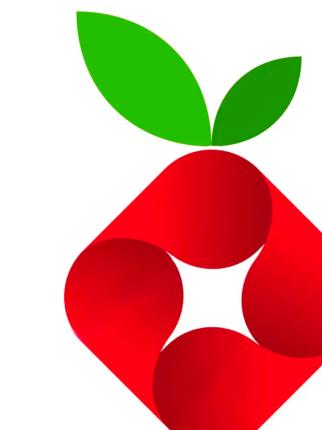
```
# For Linux and without a web server or reverse proxy (like Apache, Nginx and else) already in place
sudo docker run \
--sig-proxy=false \
--name nextcloud-aio-mastercontainer \
--restart always \
--publish 80:80 \
--publish 8080:8080 \
--publish 8443:8443 \
--volume nextcloud_aio_mastercontainer:/mnt/docker-aio-config \
--volume /var/run/docker.sock:/var/run/docker.sock:ro \
nextcloud/all-in-one:latest
```



```
curl -s -S -L  
https://raw.githubusercontent.com/AdguardTeam/AdGuardHome/master/scripts/install.sh |  
sh -s -- -v
```



ADGUARD



Pi-Hole

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



NETFLIX



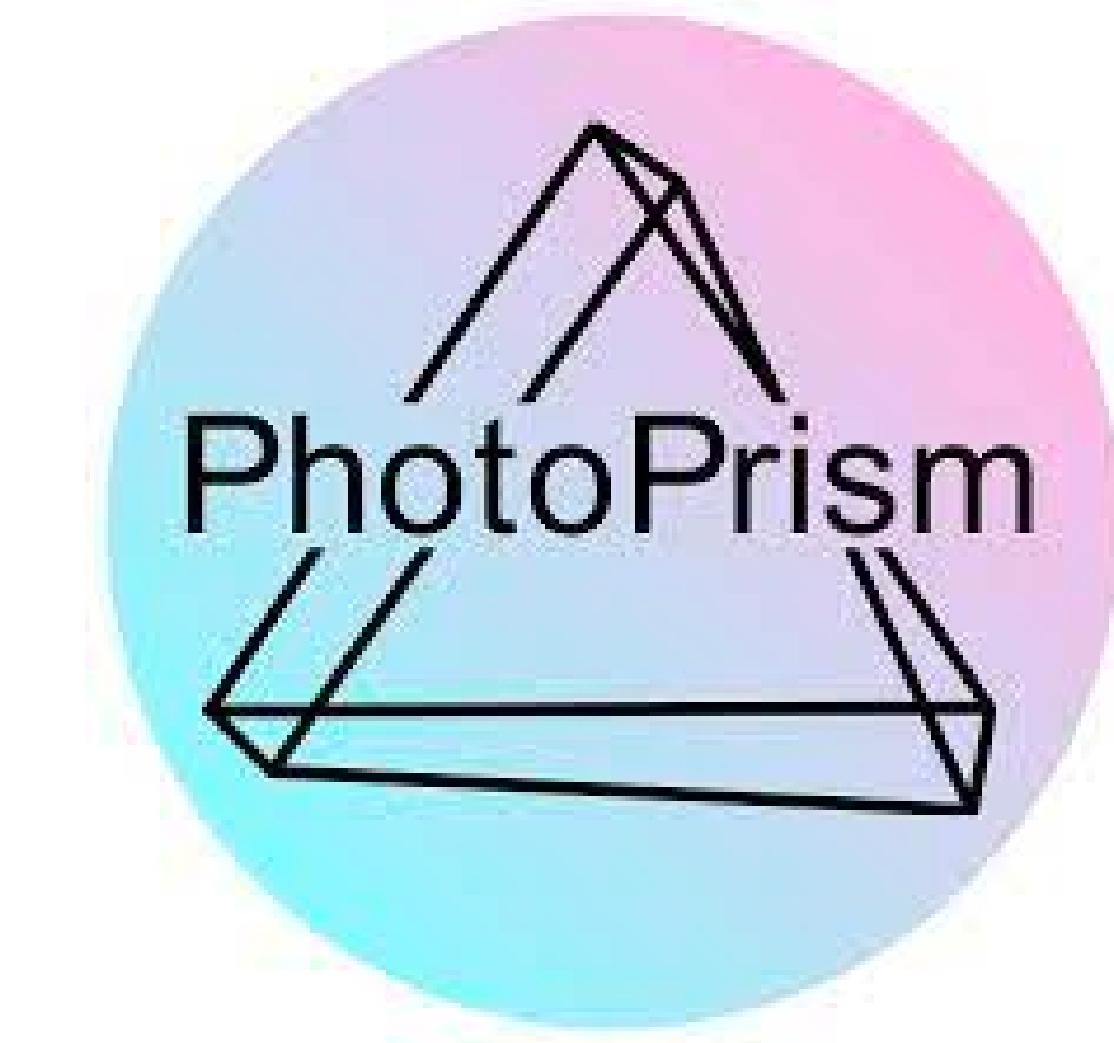


NETFLIX



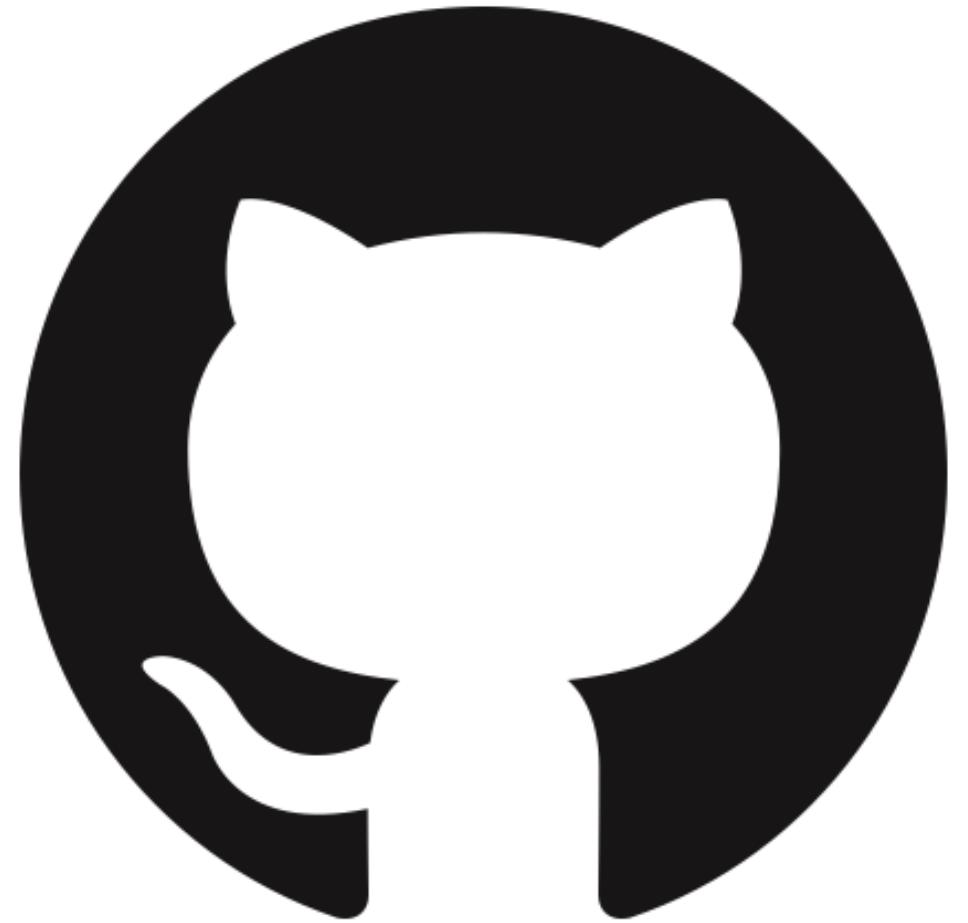
```
curl https://repo.jellyfin.org/install-debuntu.sh | sudo bash
```





`wget https://dl.photoprism.app/docker/docker-compose.yml`

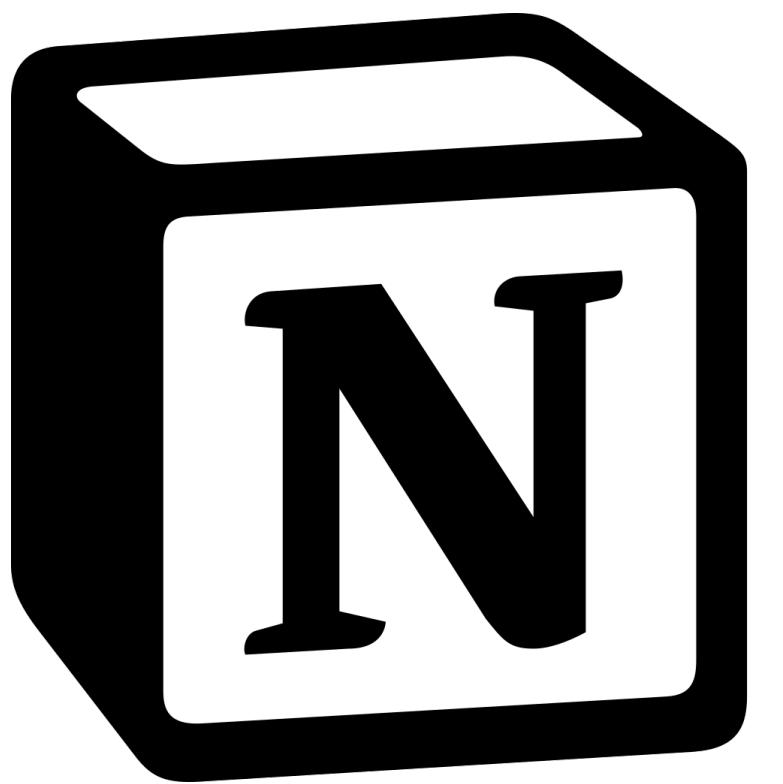


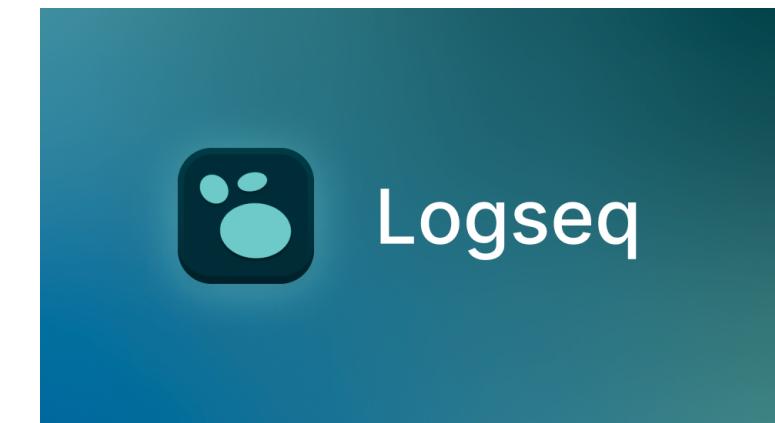
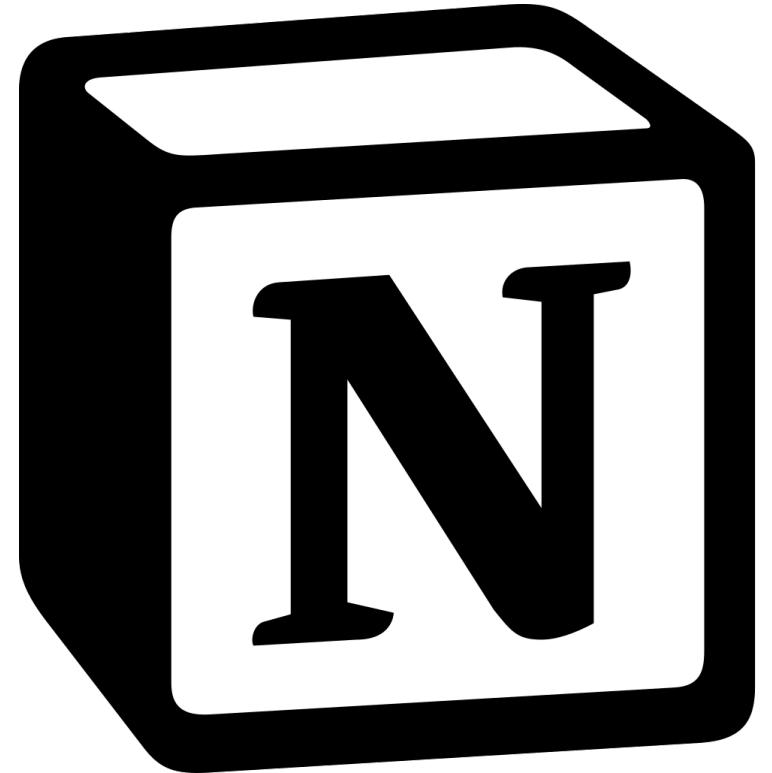


Gitea

```
wget -O gitea  
https://dl.gitea.com/gitea/main-  
nightly/gitea-main-nightly-linux-amd64
```

```
chmod +x gitea
```





A screenshot of the AFFiNE application interface. On the left is a sidebar with a tree view of pages like "AFFiNE Workspace", "Quick Search", "Workspace Settings", "All Pages", "Favorites", "Pivots", "West lake", "Welcome to the abede...", "Shanghai WC", "Hangzhou WC", "Product Wiki", "Untitled", "Hangzhou WC", "Product Wiki", and "Trash". The main area has a heading "AFFiNE: Transforming Docs and Whiteboard as One" and a section "What's different in AFFiNE Alpha?". It lists three points: 1. A much smoother editing experience, with much greater stability; much smoother editing 2. More complete Markdown support and improved keyboard shortcuts; 3. New features such as dark mode; The AFFiNE Alpha is here! You can also view our. Below this is another section "AFFiNE: The Next-Gen Knowledge Base to Notion and Miro" with a note about Miro and Notion. At the bottom is an "issue manager" table with two rows of data.

Affine – <https://github.com/toeverything/AFFiNE>

More tools at :

**awesome-selfhosted/
awesome-selfhosted**



A list of Free Software network services and web applications which can be hosted on your own servers

1k Contributors 52 Issues 134k Stars 8k Forks

[GitHub](#)

awesome-selfhosted/awesome-selfhosted: A list of Free Software network services and web applications which can be hosted on your own servers

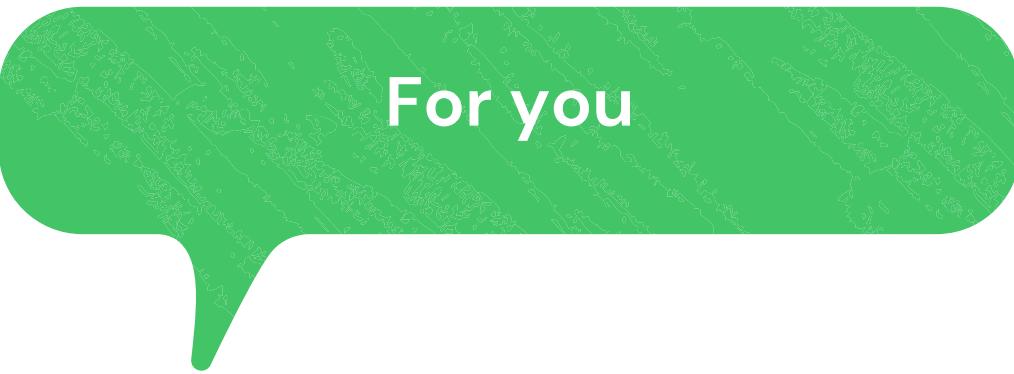
A list of Free Software network services and web applications which can be hosted on your own servers
- GitHub - awesome-selfhosted/awesome-selfhosted: A list of Free Software network services and ...

github.com/awesome-selfhosted

Resources

- 1 Self Hosting 101 – Mon School
- 2 Network Chuck – YouTube
- 3 github.com/mikeroyal/Self-Hosting-Guide

Bonus



**Have an old
phone lying
around?**





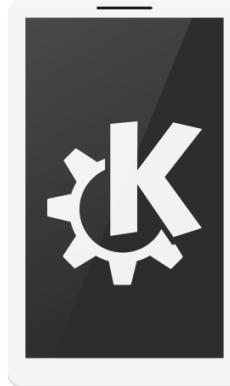
DashCam

Droid Dashcam or Open DashCam



Webcam

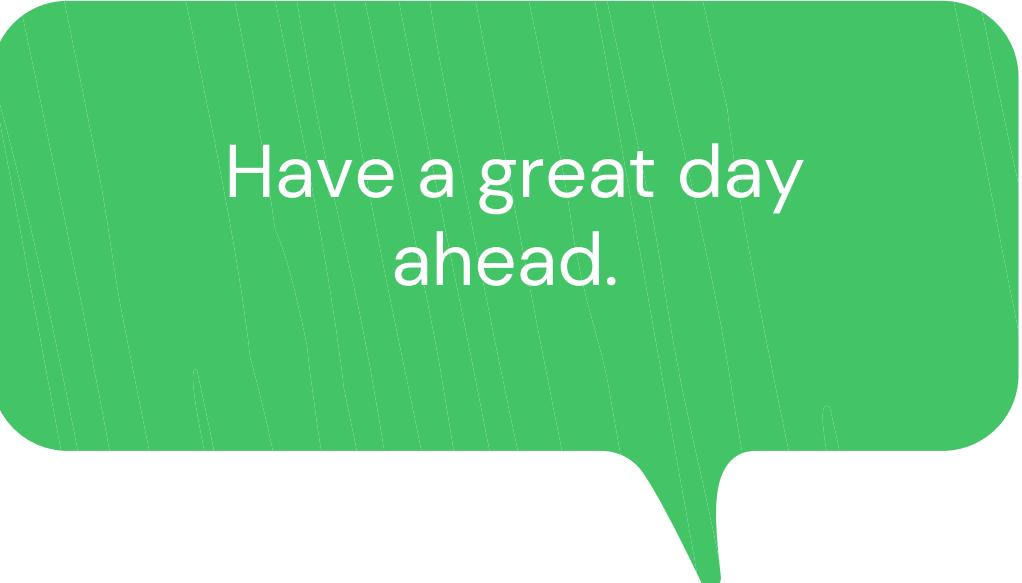
Android IP Camera



Virtual Keyboard and Mouse

KDE Connect

Thank you :)



Have a great day
ahead.