


SELF- HOSTING FOR NON- CODERS



Credit:
Mastodon

Did you try hosting Mastodon?

Official Mastodon docs



Preparing your machine

- What is Mastodon?
- USING MASTODON
 - Signing up for an account
 - Setting up your profile
 - Posting to your profile
 - Using the network features
 - Dealing with unwanted content
 - Promoting yourself and others
 - Set your preferences
 - More settings
 - Using Mastodon externally
 - Moving or leaving accounts
 - Running your own server

- Do not allow password-based SSH login (keys only)
- Update system packages
- Install fail2ban so it blocks repeated login attempts
- Install a firewall and only allow SSH, HTTP and HTTPS ports

If you are setting up a fresh machine, it is recommended that you secure it first. Assuming that you are running **Ubuntu 20.04**:

Do not allow password-based SSH login (keys only) [↗](#)

First make sure you are actually logging in to the server using keys and not via a password, otherwise this will lock you out. Many hosting providers support uploading a public key and automatically set up key-based root login on new machines for you.

`_config` and find `PasswordAuthentication`. Make sure it's uncommented and set to `no`. After making changes, restart `sshd`:

It's a complex process!

Credit:
Kyohei Ito
on Flickr



Maybe it's easier with Docker?

Credit:
TrillCyborg

Mastodon Docker Setup

Setting up

Clone Mastodon's repository.

```
# Clone mastodon to ~/live directory
git clone https://github.com/tootsuite/mastodon.git live
# Change directory to ~/live
cd ~/live
# Checkout to the latest stable branch
git checkout $(git tag -l | grep -v 'rc[0-9]*$' | sort -V | tail -n 1)
```

Review the settings in `docker-compose.yml`. Note that it is not default to store the postgresql database and redis databases in a persistent storage location. If you plan on running your instance in production, you must uncomment the `volumes` directive in `docker-compose.yml`.

Getting the Mastodon image

Using a prebuilt image

If you're not making any local code changes or customizations on your instance, you can use a prebuilt Docker image to avoid the time and resource consumption of a build. Images are available from Docker Hub: <https://hub.docker.com>

I guess?..

**What if I tell you
self-hosting could look like this?**

[Dashboard](#)[Apps](#)[Monitoring](#)[Cluster](#)[Settings](#)

One Click Apps

Choose an app, a database or a bundle (app+database) from the list below. The rest is magic, well... Wizard!

One click apps are retrieved from the official [One Click Apps Repository](#) by default. You can add other public/private repositories if you want to.



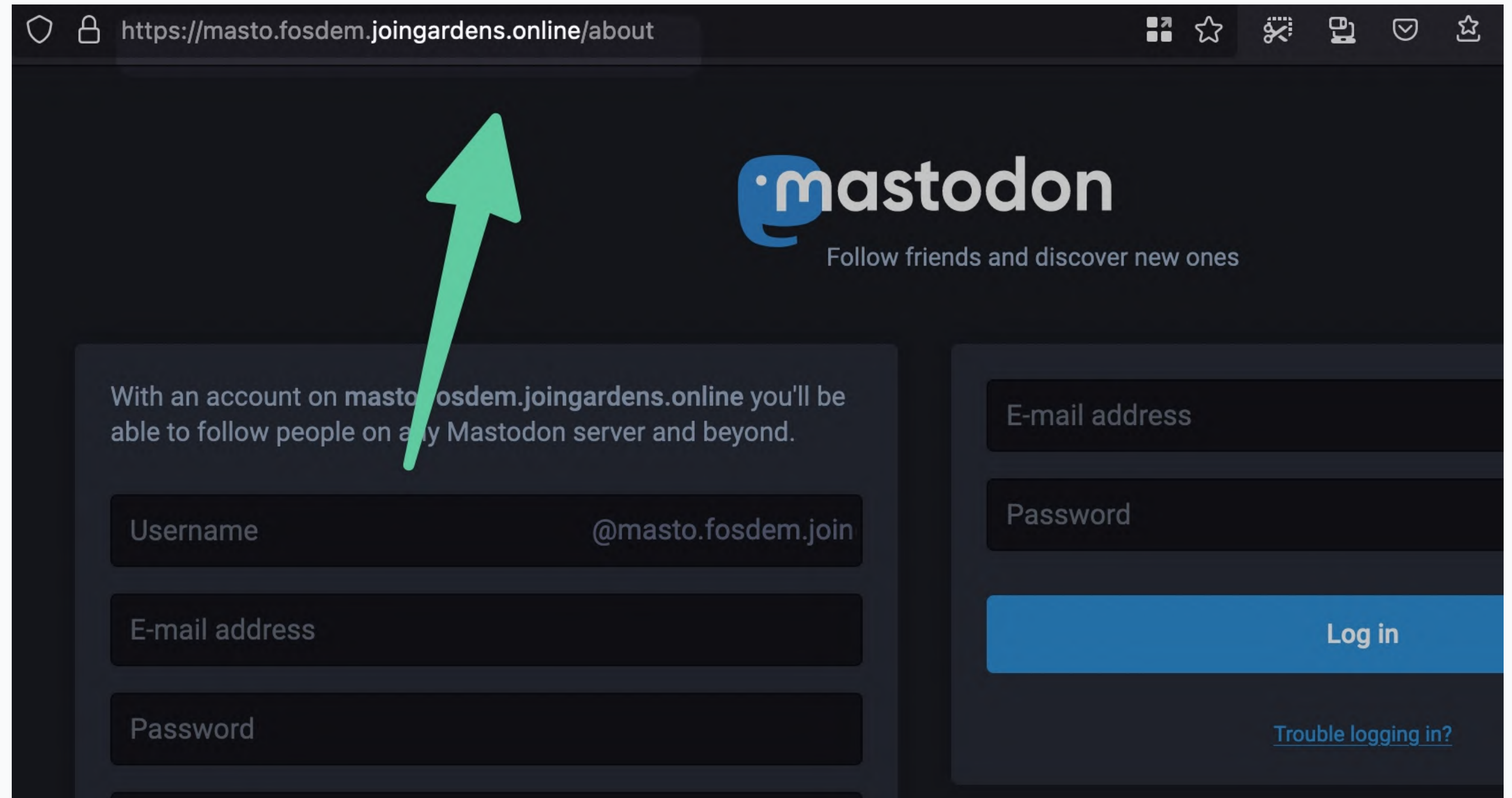
Mastodon

Social networking, back in your hands.



3rd party repositories:

[Connect New Repository](#)



https://masto.fosdem.joiningardens.online/about

mastodon
Follow friends and discover new ones

With an account on masto.fosdem.joiningardens.online you'll be able to follow people on any Mastodon server and beyond.

Username @masto.fosdem.join

E-mail address

Password

Log in

[Trouble logging in?](#)

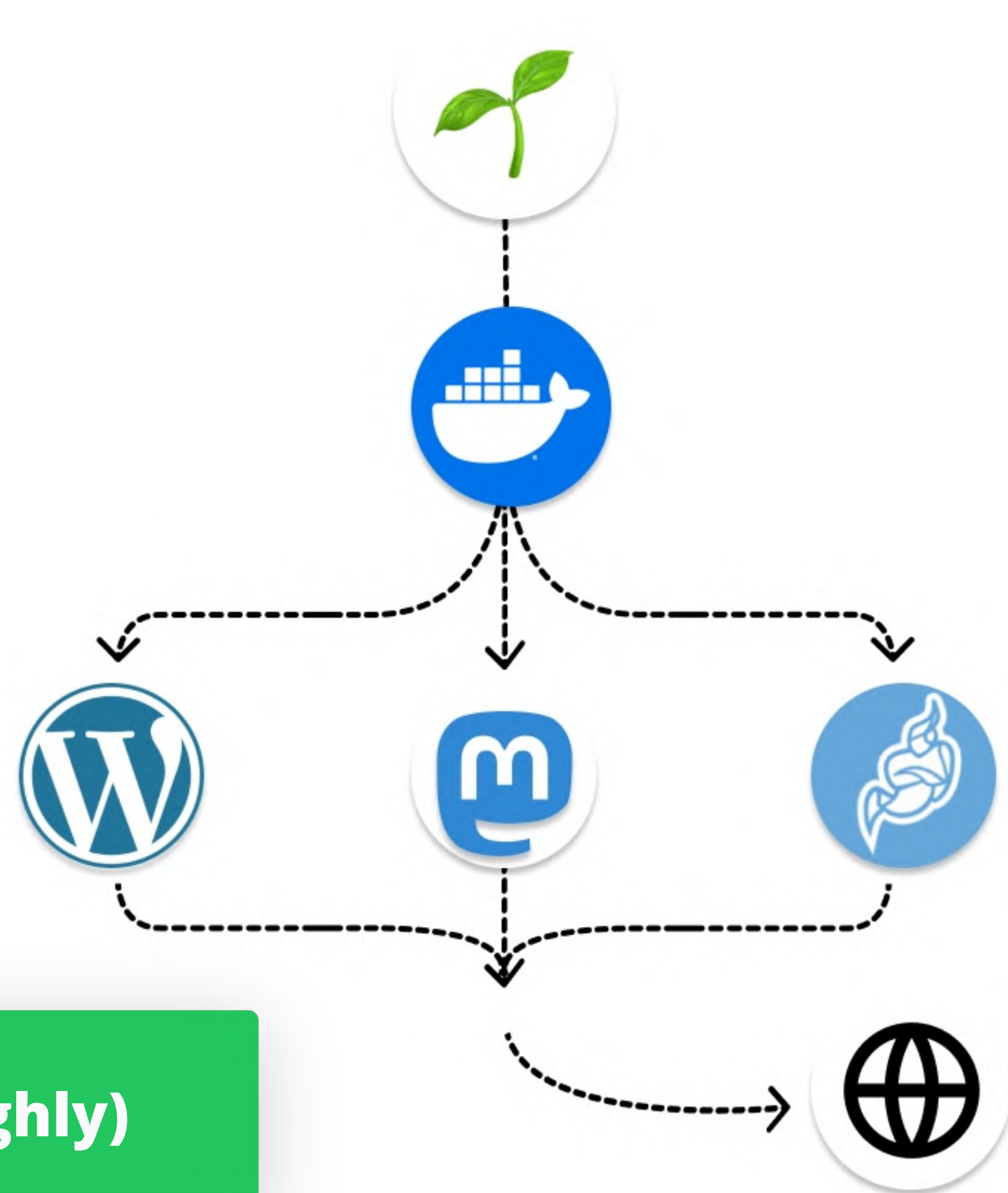
**Whole process took 1 minute 44 seconds.
On my own machine,
not tied to a cloud provider**



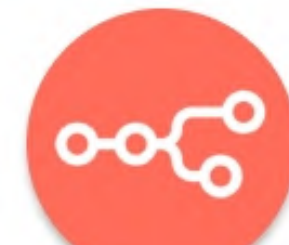
**This is Gardens,
an open-source self-hosting
platform**



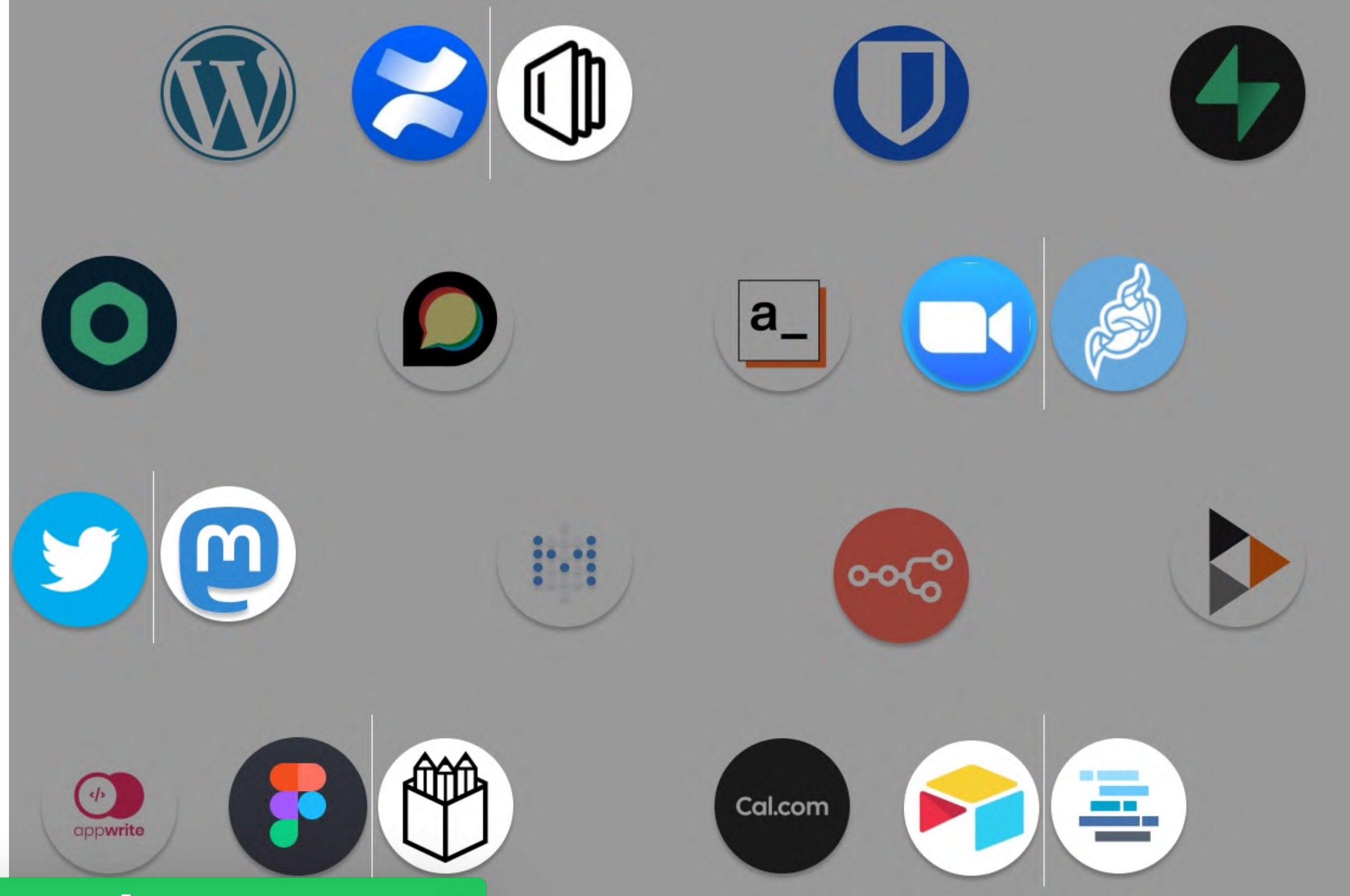
It's a fork of Caprover (100M+ Docker pulls) aiming to bring "enterprise" features and better UX



Here's how it works (roughly)



Mastodon was one example. Take these open-source/fair-code products:



**They can replace
this proprietary stuff. You can self-
host them with Gardens!**

Open-source and fair-code tools are shown at the top. Pick a category — or keep scrolling to discover all tools.

Engineering

General

Analytics

Community & Support

Content

Cooking

We currently support one-click deployments for these and 130+ more apps

API design

[Jump to top](#)



Insomnia

Open-source





Open-source API design platform and a Postman alternative

[Press to open website](#)



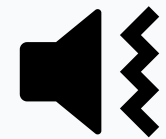
The apps themselves are based on Docker-Compose files by original developers

And we're not alone.
All-in-one self-hosting platforms:

	 Gardens	 Caprover	 Coolify	 Yunohost
Admin app format	Web app + CLI	Web app + CLI	Web app	Debian distro
Base one-click apps approach	Docker-compose	Docker-compose	Docker-compose	Shell scripts
Proxy service	NGINX	NGINX	Traefik	NGINX
License	AGPL-3.0	Apache-2.0	Apache-2.0	AGPL-3.0

Why self-hosting?

Proprietary is better at:



Marketing



**User
Experience**



Support

**Free software better
at:**



Freedom



Community



Technology

Proprietary is better at:

Free software better at:



Marketing



Freedom



Community



Technology



Support

Hard to host modern apps. In danger!



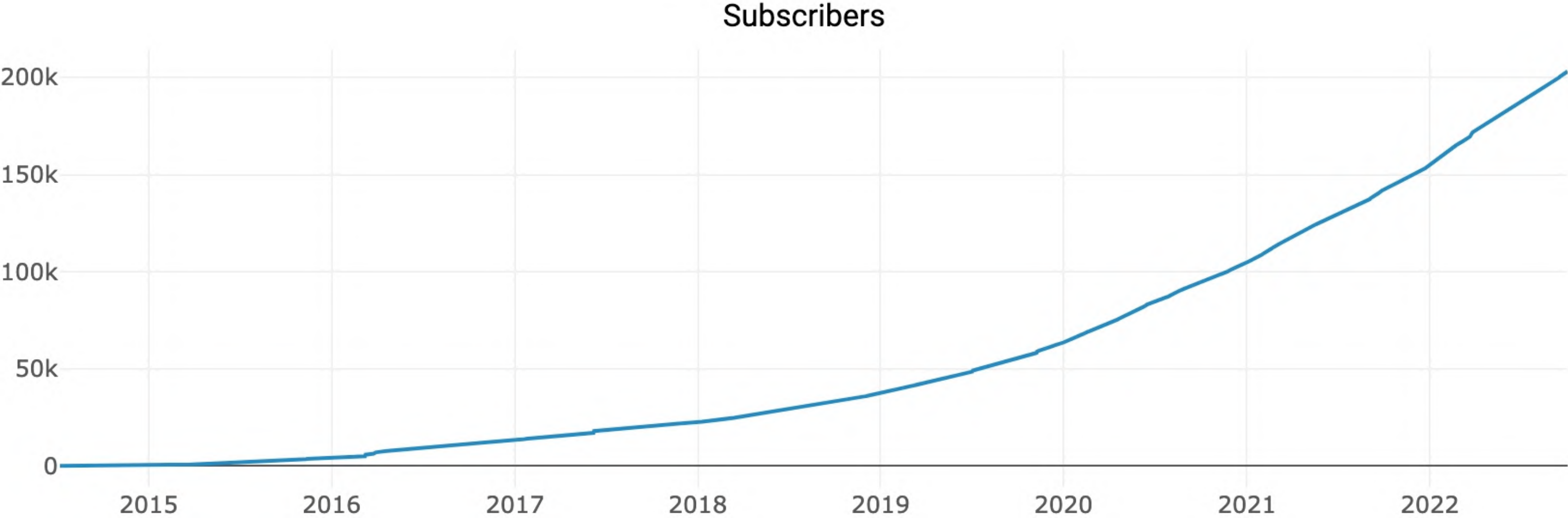
Freedom is not only important in itself. It's an "unfair" advantage.

Currently:

- **Proprietary SaaS by default**
- **Self-host ("on-premise") when paranoid**
- **Open-source? What's that?**

How it should be:

- **Conscious open-source self-hosting by default**
- **Choose SaaS where maintenance is hard**
- **Or to support developers**



**People are interested in hosting.
Subscribers count of r/selfhosted **

- 371 Self-host media (Jellyfin, ARR-stack, Plex)
- 115 Self-host apps for my business or organization (Nextcloud, project and knowle...
- 80 Self-host software engineering infrastructure (DBs, version control, CI, IDE, re...
- 354 Self-host for personal use and smart home (dashboards and widgets, bookma...
- 221 Just tinkering / playing with setup
- 134 Other (add below)

**But most self-host
for media or personal use.
Less than 10% for an organization**

**Of course, deploying is not enough.
Need to take care of:**



Maintenance



Security



Scalability

Maintenance by showing app logs in UI and keeping a version history



Maintenance



Security



Scalability

Version History

State	Version	Deploy Time	Image Name	git
✔	1	04/02/2023, 00:21:31	img-captain-masto:1	n/a
🔄	0	04/02/2023, 00:21:27	img-captain-masto:0	n/a

⌵ Hide App Logs



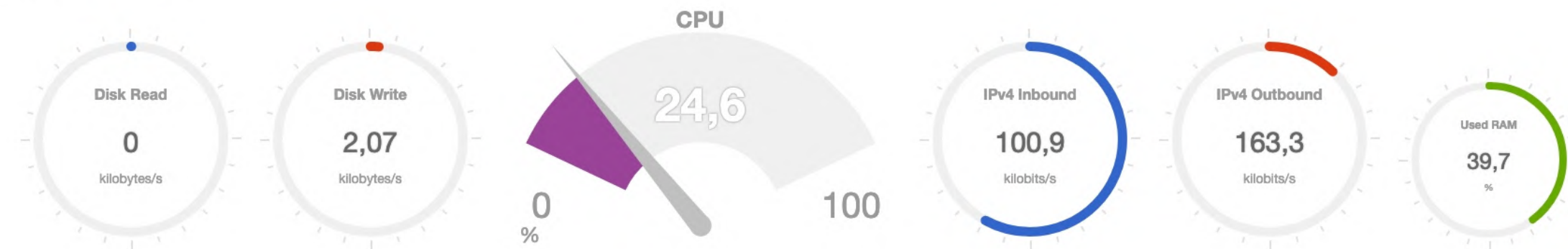
☰ Do

```
controller=AboutController action=show status=200 duration=259.39 view=250.64 db=10.25
2023-02-04T11:36:58.217799070Z [7866938a-1748-406d-8a88-41d463888c2a] method=GET path=/ format=**
controller=HomeController action=index status=302 duration=1.23 view=0.00 db=0.00
location=https://masto.fosdem.joingardens.online/about
2023-02-04T11:36:58.999053724Z [c90a3beb-236f-4d68-8be1-1aaf0928b583] method=GET path=/about format=**
controller=AboutController action=show status=200 duration=62.69 view=61.48 db=15.97
2023-02-04T11:37:00.628923459Z [e0e0c46b-0241-4063-853b-9d54f1fd1e22] method=GET path=/Public/home/js/check.js f
controller=ApplicationController action=raise_not_found status=404 duration=14.71 view=13.12 db=0.00
2023-02-04T11:37:02.103517343Z [274fc4f7-8ea5-4d71-9014-692c37c50b55] method=GET path=/static/admin/javascript/h
format=** controller=ApplicationController action=raise_not_found status=404 duration=2.26 view=1.03 db=0.00
```


Maintenance



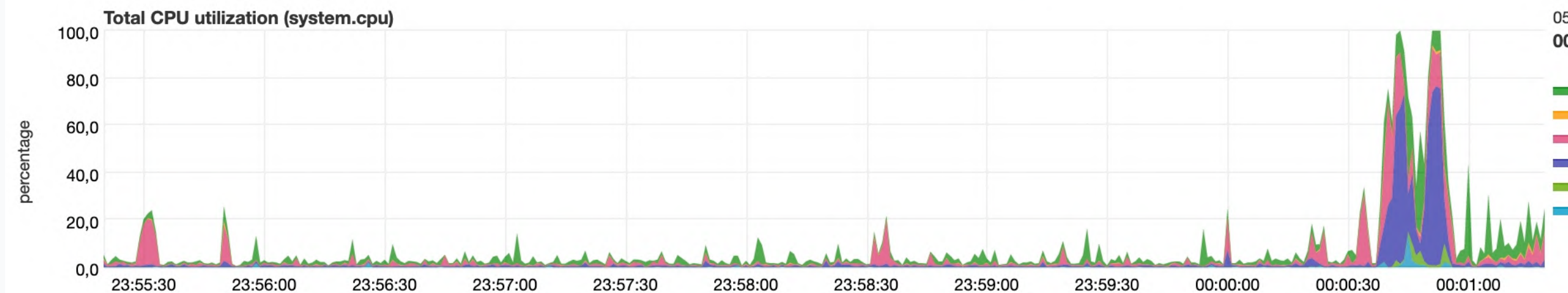
Overview of the key system metrics.



Total CPU utilization (all cores). 100% here means there is no CPU idle time at all. You can get per core usage at the [CPUs](#) section and per application at the [Applications Monitoring](#) section.

Keep an eye on **iowait** (0,0%). If it is constantly high, your disks are a bottleneck and they slow down the system.

An important metric worth monitoring, is **softirq** (0,52%). A constantly high percentage of softirq network driver issues.



Security via SSL, secured API and (in progress) 2FA/permissioning



Maintenance



Security



Scalability

☐ Do not expose as web-app ⓘ

Your app is publicly available at:

Enable HTTPS

<https://masto.fosdem.joiningardens.online>

Connect New Domain ⓘ

Edit Default Nginx Configurations

Container HTTP Port

3000

⌵

☐ Force HTTPS by redirecting all HTTP traffic to HTTPS ⓘ

☐ Websocket Support ⓘ

Edit HTTP Basic Auth

Current State: **inactive**

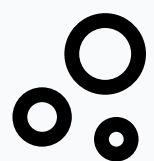
Scaling with more app instances on one machine or more machines via Docker Swarm



Maintenance



Security



Scalability

Nodes



Cannot add more nodes as no default push registry is set. To add more nodes and create a cluster, you first need to add a and set it as the default push registry.

Current Cluster Nodes

Node ID: zdjxjpfzdmb1w4kg0mireg8b6

Type: Leader (Main Node)
State: ready

IP: 
Status: active

RAM: 6.65 GB
CPU: 2 cores

OS: linux
Architecture: x86_64

Hostname: 

Docker Version: 20.10.21

People and organizations want to self-host, but we need to help. Otherwise they opt for SaaS

You can help by:

Developers

1

Keep good docker-compose files and docs

2

Provide your organization with a self-hosting platform

Sysadmins
and DevOps

Everyone

3

Use open-source instead of SaaS. SaaS to support devs

**Opt for independent, socially-minded
hosters instead of Big Tech. Some ideas:**



Cloud68.co



Libreho.st

Thank you!

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