

Self-hosting for mortals



Agenda

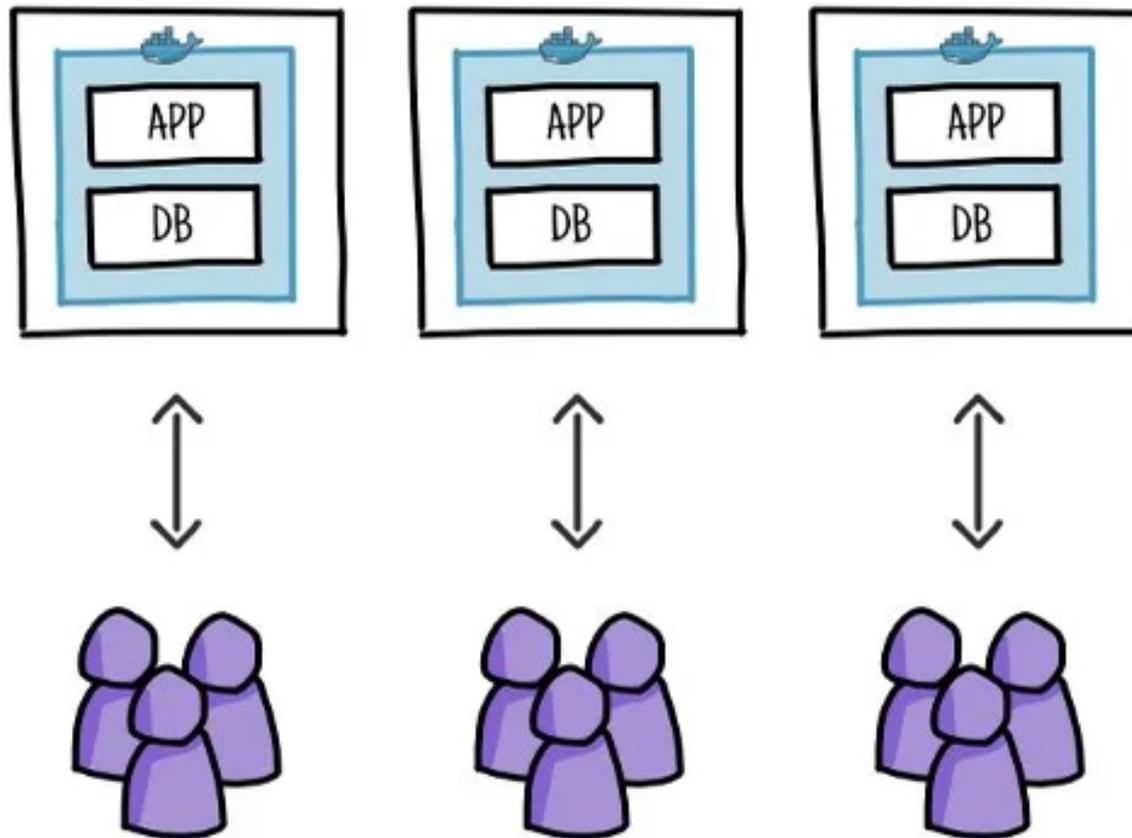
- Agenda
 - What is self-hosting?
 - Challenges to Self-hosting
 - Cloudron Demo
 - Cloudron Architecture

Intro to Self-hosting

- **90s – On Prem**



Intro to Self-hosting



SINGLE-TENANT

Intro to Self-hosting

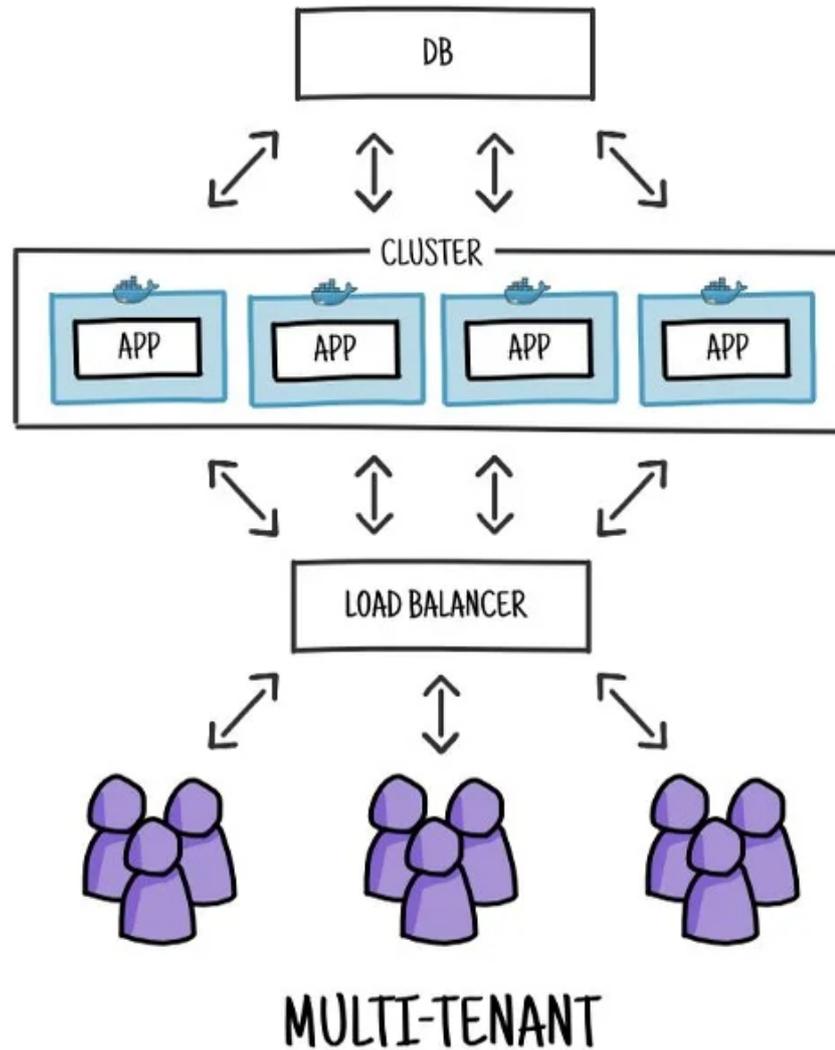
- Cons on on-prem
 - Slow software adoption
 - High maintenance costs
- Pros on on-prem
 - Complete control over the setup

Intro to Self-hosting

- 2000s – Salesforce/Concur pioneered SaaS



Intro to Self-hosting



Intro to Self-hosting

- Pros of SaaS
 - Amazing UX / Fast software adoption
 - No maintenance costs
- Cons of SaaS
 - Trades control for convenience

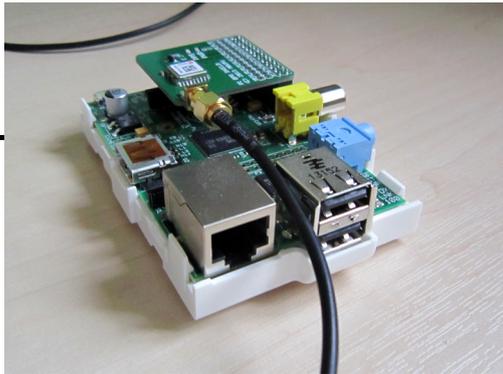


Intro to Self-hosting

- Questions about Data
 - Where exactly is our data stored?
 - Who can access data in the vendor company? Do they have any real policies?
 - How exactly is the data stored? Is it encrypted?
 - Data is now scattered across various SaaS products

What is self-hosting?

- Control your data
- Self + hosting
 - Deploy web apps on your own servers (90s!)



What does it take to self-host?

- Technology is making self-hosting more accessible
 - Public cloud / Virtualization
 - Containerization
 - IaaS – DNS, Certificates, Storage
 - Open source apps

Challenges

- App deployment remains a very technical task
- GitLab – Rails, Bundler, PostgreSQL, Go, Webpack, ...
- Configuration, Security, Updates, Backups ...



Challenges

- Self-hosting apps is a full time job
- SMBs have limited IT resources
 - Time-consuming, & technical know how
- No Cost-effective solution
 - Companies usually target large enterprises for private installs.
 - Hiring contractors results in a custom install (“lock in”)

ClouDRON

- Brief history of ClouDRON
- Can we have the convenience of SaaS with the control of a private cloud?
 - UX is the key
 - Smartserver

- DEMO
 - my.home.forwardbias.in
 - my.cloudron.io

Architecture

- Cloudron is installed on a server
- Apps are listed from an App Store
- Cloudron installs app
- Cloudron periodically checks for updates
- Each Cloudron installation is independent and private. App Store has no access to the servers.

Anatomy of an app

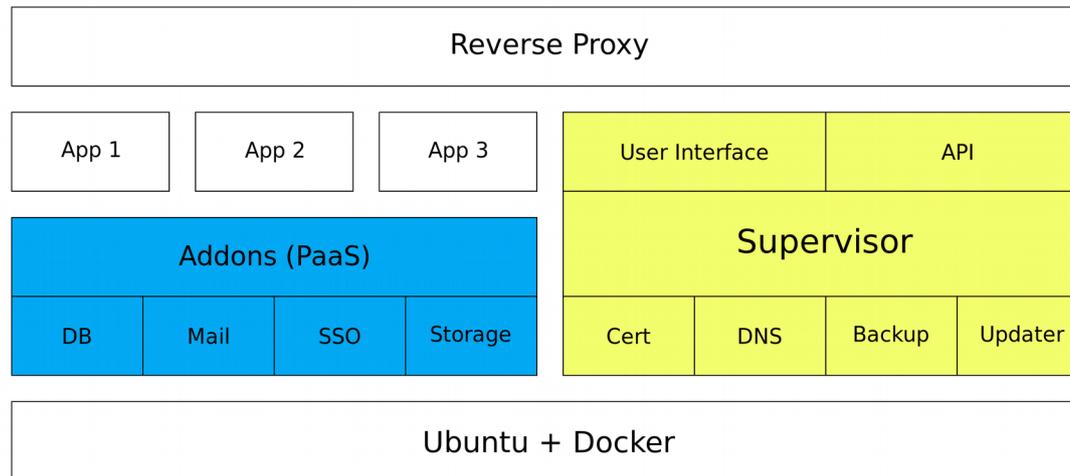
- Docker based packaging
 - Dependency management
 - Static configuration
 - Density
- Manifest
 - Addons: Databases, Auth, Email
 - Port bindings
 - Version, Title, Icon, Description, Author

Cloudron App Store

- App Store (cloudron.io)
 - Distribution mechanism
 - Holds manifest meta data
 - Versioning information

Platform

- Similar to Heroku
 - Each addon is a micro-service
 - Addon access credentials as env vars



App Lifecycle

- Install
 - Configures DNS
 - Downloads docker image
 - Sets up addons
 - Logrotate, Collectd, Firewall
 - Runs container
 - Dynamic configuration
 - Gets certificates

App Lifecycle

- Updates
 - Read-only and stateless app containers
 - Rolling updates
 - Signed releases
 - Selenium based tests

Maintenance

- Backups
 - Per-app backups
 - Backup only add-on data
 - Apps can be trivially cloned and rolled back
 - Can be stored offsite to S3, DO Spaces etc
- Alerts
 - Email notifications

Security

- Security
 - Turn-key security
 - HTTPS only
 - SSL, HSTS
 - App isolation and sandboxed
 - Rate limits, Activity logs
 - Signed releases
 - <https://cloudrion.io/documentation/security/>

Future

- “There is no server”

Thanks

Thanks!

girish@cloudron.io

<https://cloudron.io>

Use “BayLisa” coupon code for 50% discount