

How to Build a Free and Open Cloud



Imagine if you could freely reuse, modify, and fork live services just like open source code.



Everything is Moving to the Cloud...

- No one wants to run software, let alone servers
- Easy to get started
- Usage-based pricing, minimal upfront costs



Will Open Source Be Left Behind?

- Thousands of popular open source applications are not available as SaaS services.
- Cloud services undermine traditional open source business models







The ease and simplicity of the cloud without giving up the freedom and control of open source

Introducing: Open Cloud Services

o•pen

adjective: computing

anyone is free to access, use, modify, and share — subject, at most, to measures that preserve **privacy** and **openness**.

cloud•serv•ice

NOUN: COMPUTING

an online service delivered on demand over the Internet without the user needing to use their own hardware.



3 Levels of Openness





For a better Internet and a better world

Don't be evil Can't be evil!



3 Levels of Openness: Level 1 Code





Open Code – Freedoms for Developers

Freedom	Open source Code
0 Access (Run)	Access code and use as you see fit
1 Modify	Right to modify the code
2 Share	Right to freely redistribute the code
3 Remix	Right to Modify and redistribute (fork)



3 Levels of Openness: Level 2 Data





Open Data – Freedoms for Users

Freedom	Requirements for Data
0 Access	Data Portability
1 Modify	Extensible formats
2 Share	Open data <i>and</i> data privacy
3 Remix	Open APIs



3 Levels of Openness: Level 3 Hosting





Open Hosting – Freedoms for Operators

Freedom	Hosting Requirements
0 Access (Run)	Reproducibility
1 Modify	No proprietary dependencies
2 Share	Federation
3 Remix	Decentralization



Decentralized hosting through trust





Freedom preserving Cloud-Funding



- Freedom-preserving: Can't impose limits that comprise rights to code or data.
- Fair and Equitable Hard to define but the perception of unfairness will surely undermine any motivation to freely contribute.
- **Simple** and intuitive to understand.
- Efficient: we want to direct resources to the projects that will make the biggest impact.
- **Resistant** to gaming and perverse incentives



Cloud Funding



Developers register projects and open cloud services with **fundraising goals.** **Users deploy** on their cloud infrastructure with a **"gratuity" added.**



Successful projects **pledge to give 50% back** to one or more of the projects it depends on.

Cloud Funding





Decentralizing Cloud Funding



Encode open cloud services agreements as smart contracts on blockchain:

- User and projects record their preferences on blockchain
- Hosting providers remit token payments which are distributed to contributors via the smart contracts





DEVOPS FOR EVERYONE



ISOLATED DEPLOYMENT ENVIRONMENT

ISOLATED CLOUD ENVIRONMENT

THANK YOU!



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