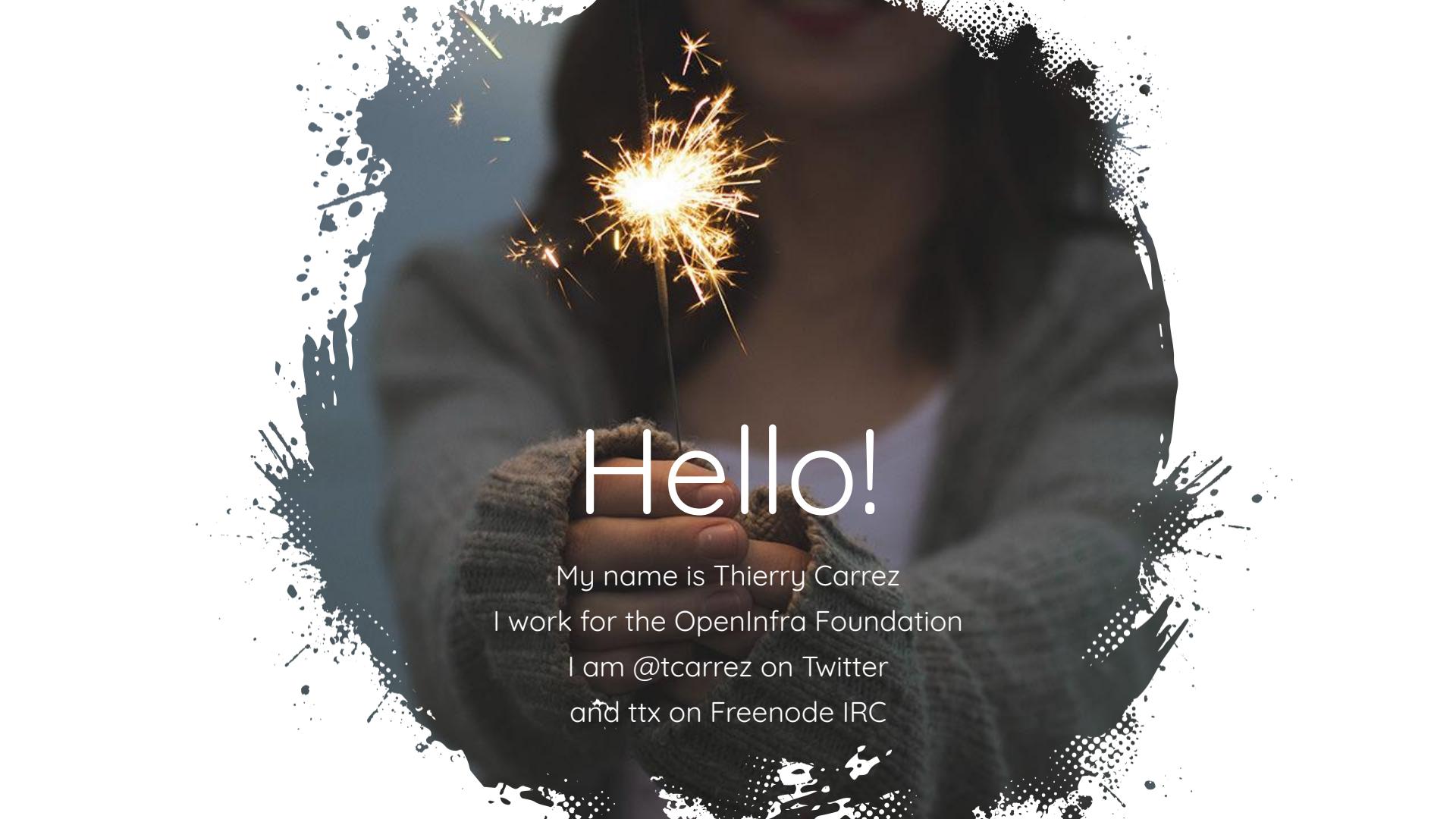


# A Python-powered open source cloud

## History and future of OpenStack



# Hello!

My name is Thierry Carrez

I work for the OpenInfra Foundation

I am @tcarrez on Twitter

and ttx on Freenode IRC

# 1. Our mission



Openly developing  
Open infrastructure



Openly developing  
Open infrastructure



# The 4 Opens



# The 4 Opens

- × Open source



# The 4 Opens

- × Open source
- × Open development



# The 4 Opens

- × Open source
- × Open development
- × Open design



# The 4 Opens

- × Open source
- × Open development
- × Open design
- × Open community



And beyond...



# And beyond...

- × Open minds



# And beyond...

- × Open minds
- × Open operations



# And beyond...

- × Open minds
- × Open operations
- × Free software needs free tools



# And beyond...

- × Open minds
- × Open operations
- × Free software needs free tools
- × QA and CI first



Openly developing  
Open infrastructure



Openly developing  
**Open infrastructure**

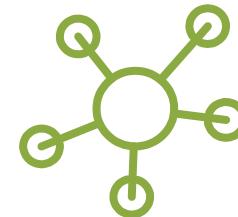


Openly developing  
Open infrastructure





Users



Applications



Users



Physical hardware



Users



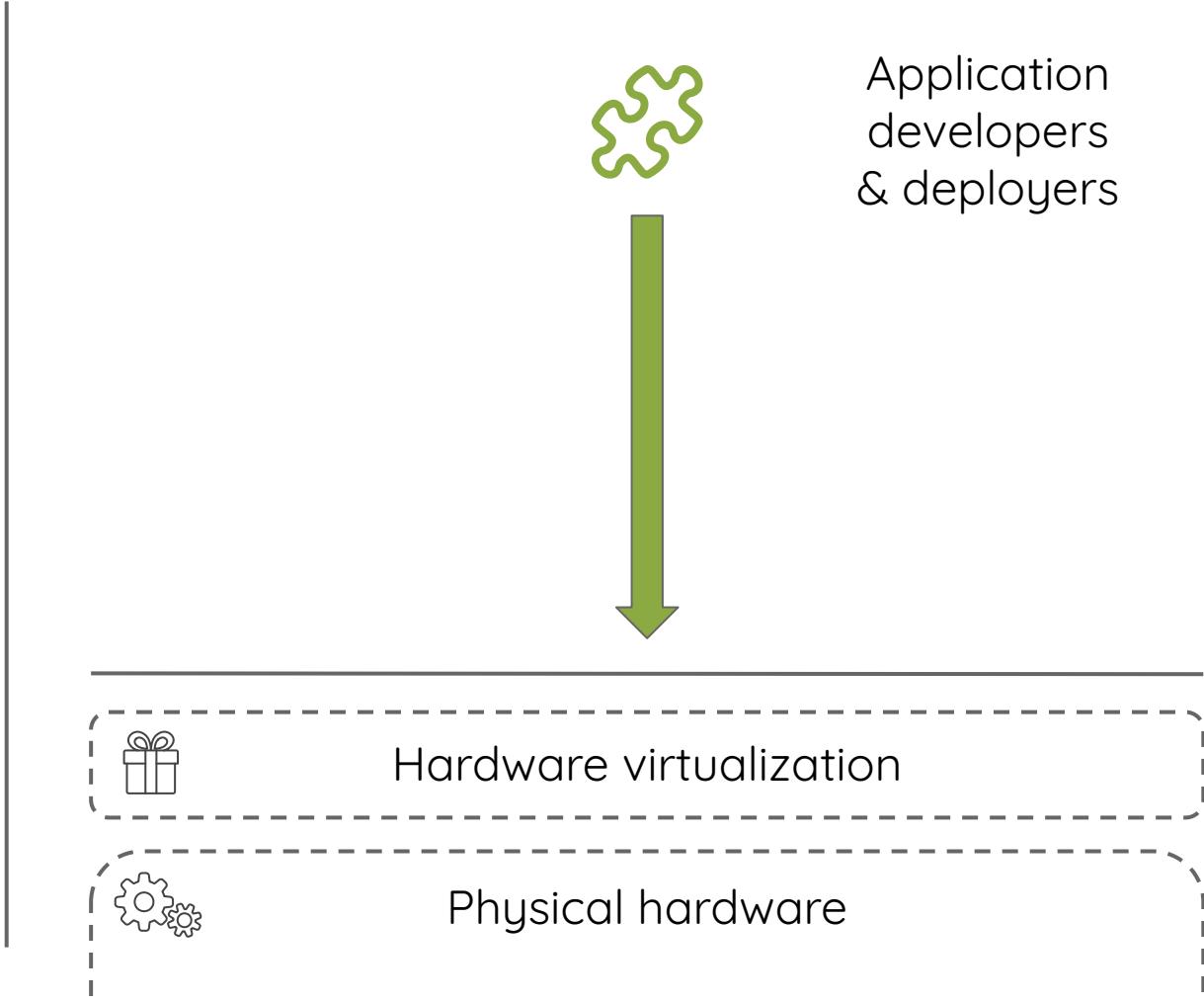
Physical hardware



Application  
developers  
& deployers

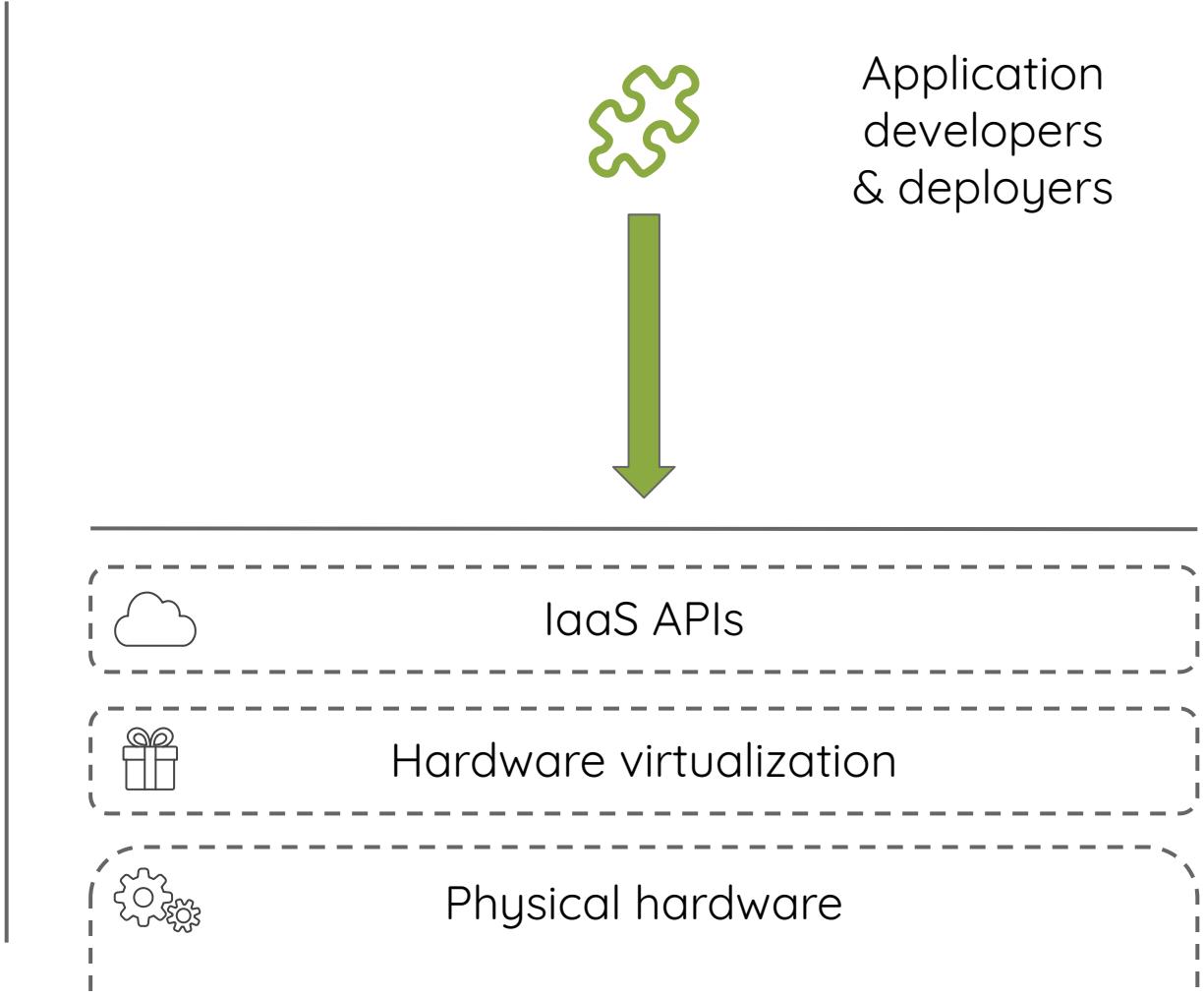


Users





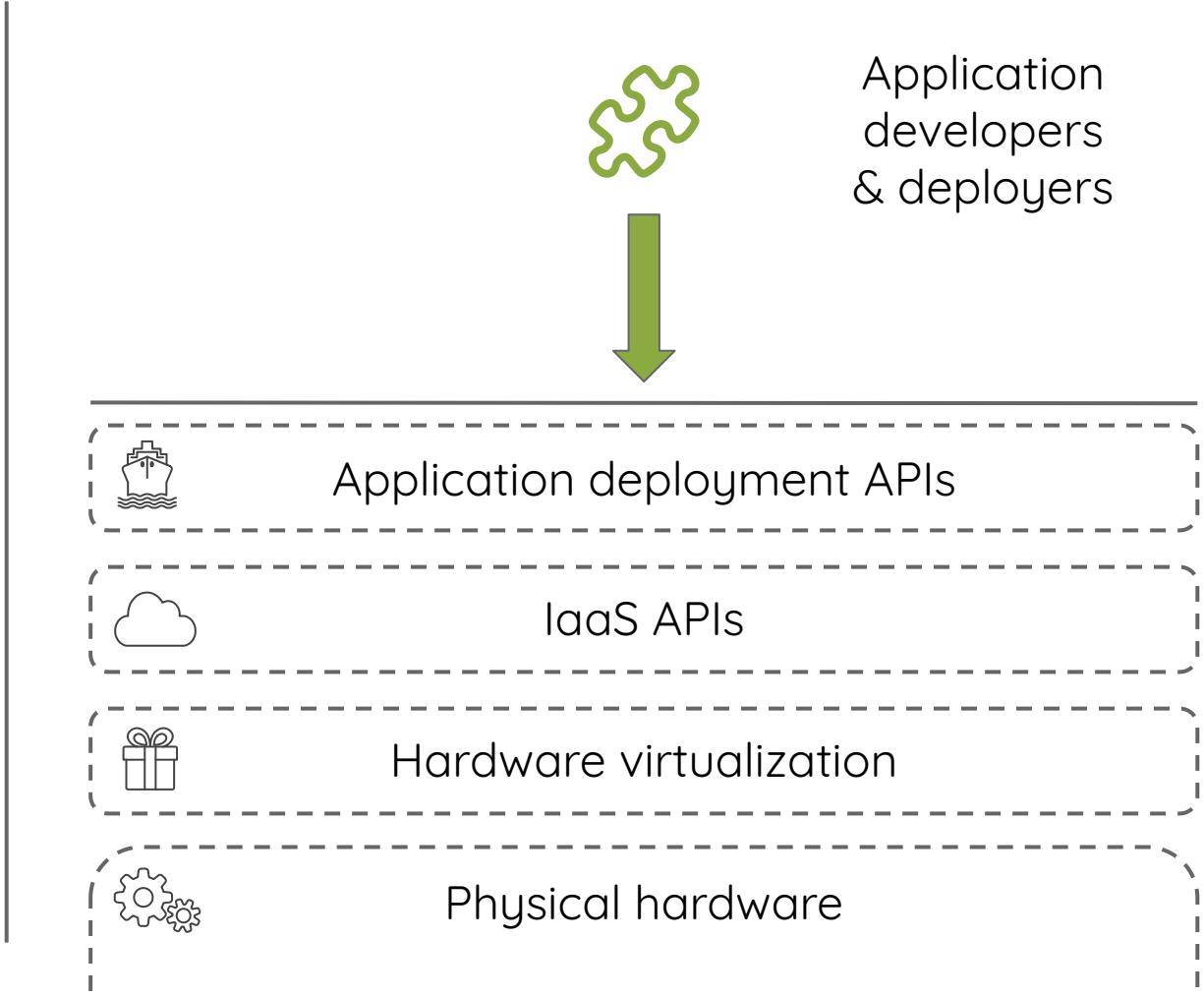
Users



Application  
developers  
& deployers

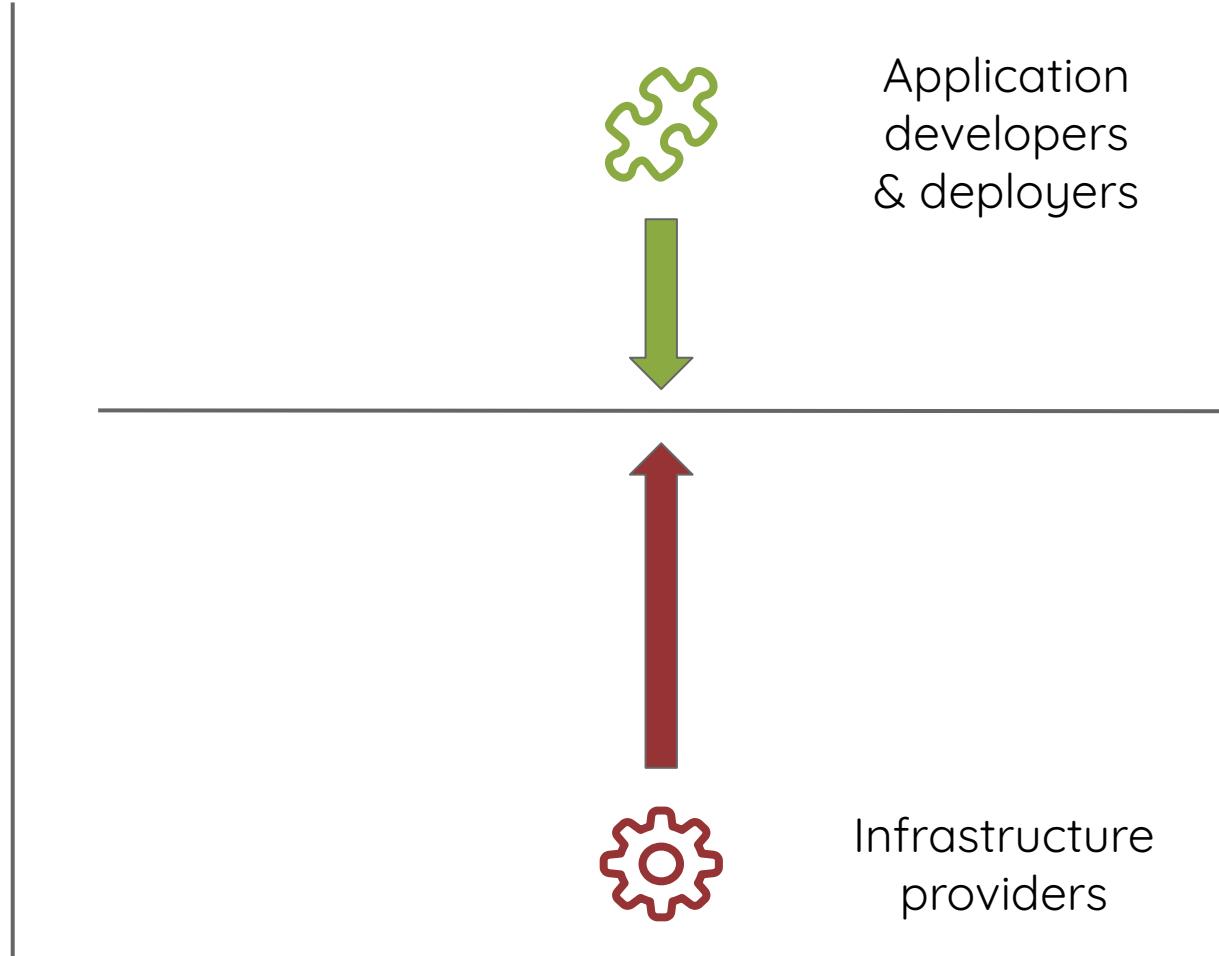


Users





Users



Application  
developers  
& deployers



Infrastructure  
providers



Infrastructure  
providers

# Providing infrastructure

For others to build on



Openly developing  
Open infrastructure



Openly developing  
**Open** infrastructure



# Open source solutions

For providing infrastructure



# Back in 2010

- × VMWare - Private infrastructure
- × AWS - Public infrastructure



# Not costly

“Free as in beer”



# Available

Evaluation and experimentation



# Sustainable

Long-term maintenance guarantees  
and absence of lock-in



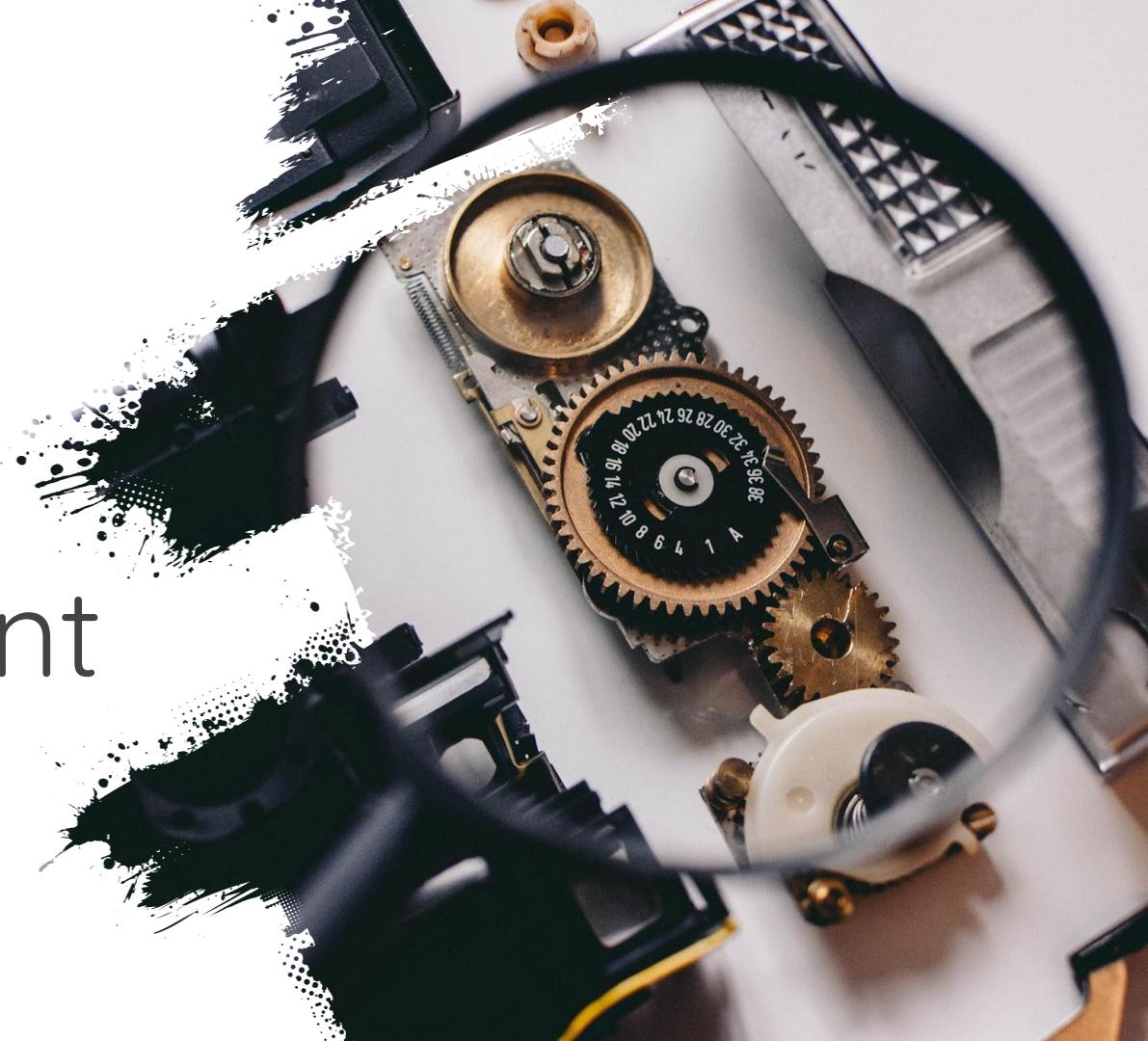
# An open job market

Identify and attract talent



# Transparent

Understanding how it works



# Self-service

Fix issues by yourself



# Influence

Participate in the evolution  
of the software



# Benefits

- ✗ Not costly
- ✗ Available
- ✗ Sustainable
- ✗ Open job market
- ✗ Transparent
- ✗ Self-service
- ✗ Influence



# Enabling everyone

All the world's infrastructure needs  
should not be provided by the  
“big 3” proprietary public clouds.



2.

The first decade



# OpenStack

- × Rackspace + NASA
- × APIs on virtualized resources
- × Public + Private infrastructure
- × Open source, Apache-2 licensed



# Why Python?

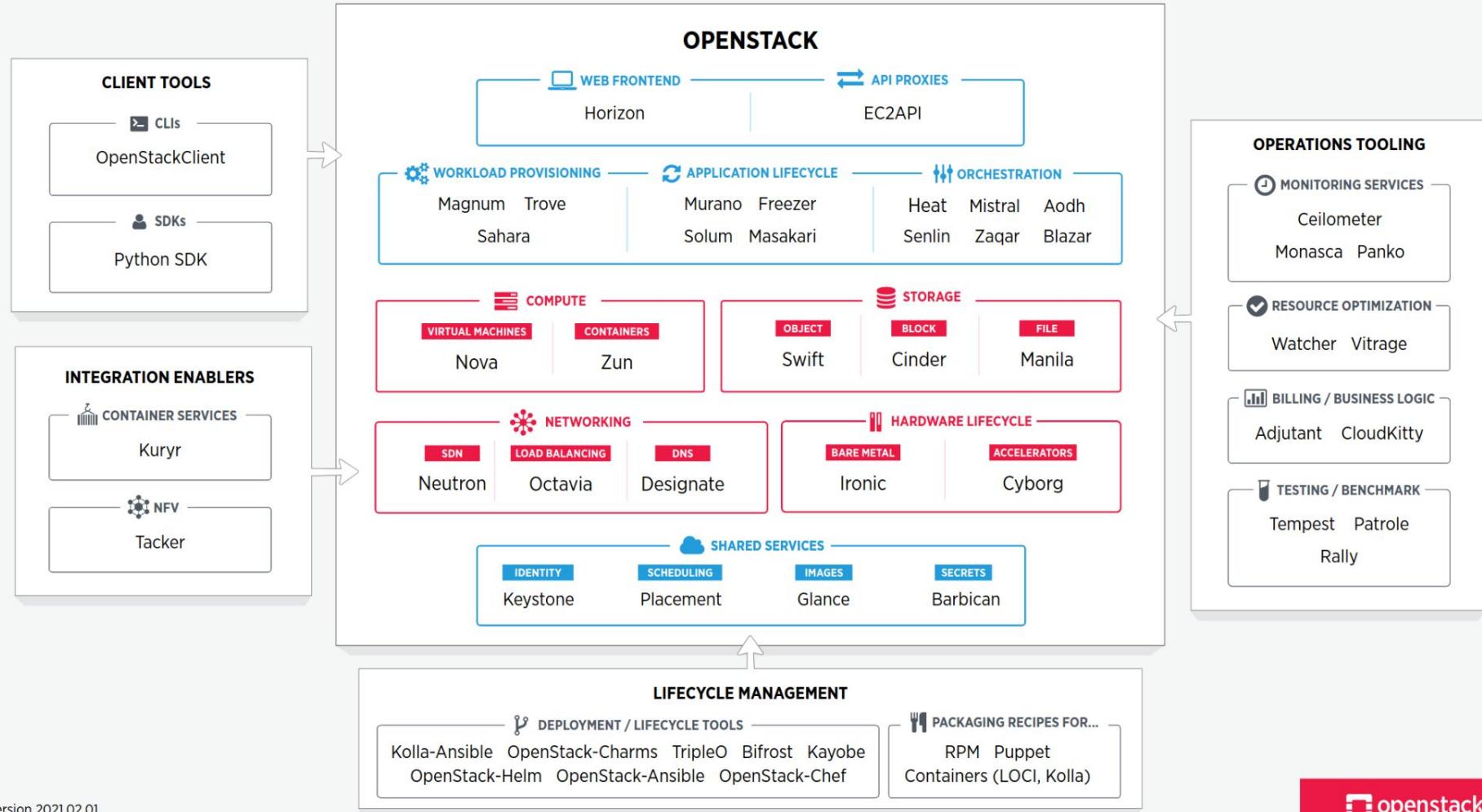
- × Distro integration
- × Easy to read, learn and patch
- × Ops familiarity
- × A great integration language
- × Inclusive community
- × PyPI ecosystem



# OpenStack today

- × Top 3 most active open source project in the world
- × Software that runs in production
- × A community of practice
- × A software factory





# 25 million CPU cores

## RETAIL/E-COMMERCE



## ENERGY/TRANSPORTATION/GOVERNMENT



## FINANCIAL SERVICES



## MANUFACTURING



## ACADEMIC/RESEARCH



## WEB & ENTERTAINMENT



## TELECOM



## PUBLIC CLOUD



# Deployments > 1 M cores



3.

What did OpenStack  
bring to Python?



# Jobs

- × Funding for Python developers
- × Cloud / sysadmins / devops



# Quality

- × 20,000 tests run every day
- × Detect issues in Python libs early
- × **pymemcache 1.3.0**  
Moved exceptions around in backward-incompatible ways
- × **kazoo 2.1**  
Deadlock when acquiring a lock that is already acquired
- × **netaddr 0.7.16**  
Failing on validating a previously valid MAC address

# Contributions

- × Influx of new developers
- × Upstream contributions
- × New Python libraries:  
cliff, stevedore, pbr, debtcollector...
- × New Python tools:  
zuul, bandit, reno, jjb...
- × Adopted libraries  
pylockfile, mox3, sqlalchemy-migrate...



4.

The future



More  
open source



# More use cases



# Infrastructure for...

- × Edge computing



# Infrastructure for...

- × Edge computing
- × Containers in production



# Infrastructure for...

- × Edge computing
- × Containers in production
- × AI/ML



# Infrastructure for...

- × Edge computing
- × Containers in production
- × AI/ML
- × Internet access in remote areas



# More projects





**ZUUL**



katacontainers



**airship**



**STARLINGX**

# More collaboration



# Collaboration

- × Combining building blocks



# Collaboration

- × Combining building blocks
- × Facilitating integration



# Collaboration

- × Combining building blocks
- × Facilitating integration
- × Collaborating between communities



# Collaboration

- × Combining building blocks
- × Facilitating integration
- × Collaborating between communities
- × Sharing experience and practices



# The next decade

- × Open infrastructure everywhere
- × More projects, more integration
- × More sharing, more collaboration
- × More need than ever for OpenInfra



# Next: the Summit

- × Open Infrastructure Summit
- × June 7-9, Berlin, Germany
- × Register at [openinfra.dev/summit](https://openinfra.dev/summit)



# Thanks!

You can find me at:

@tcarrez

thierry@openinfra.dev

## Credits

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