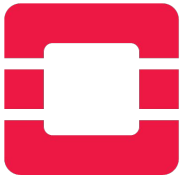
Meetup #3
OpenStack Indonesia

One Step Closer to



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@misskecupbung
PT Boer Technology

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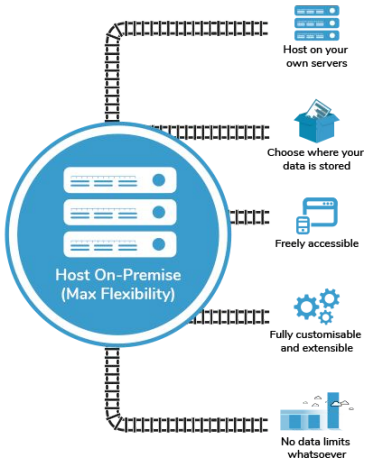
About Me

- Cloud Engineer PT Boer Technology (Btech)
- Mahasiswa
- Infrastructure’s Team of Blankon Linux Indonesia
- FLOSS Enthusiast

on-premise vs cloud-based

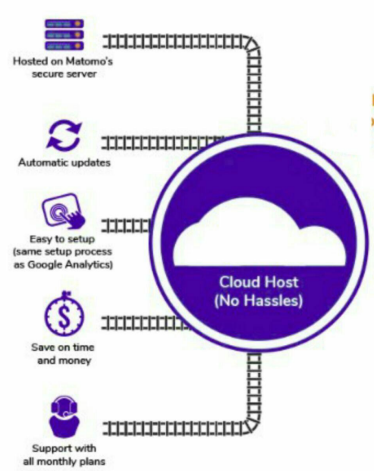


Ongoing costs

- Apply filters, patches, upgrade
- Downtime
- Performance tuning
- Rewrite integrations
- Upgrade dependent applications
- Ongoing burden on IT
- Maintain/upgrade hardware
- Maintain/upgrade network
- Maintain/upgrade security
- Maintain/upgrade database

Ongoing costs

- Subscription fee



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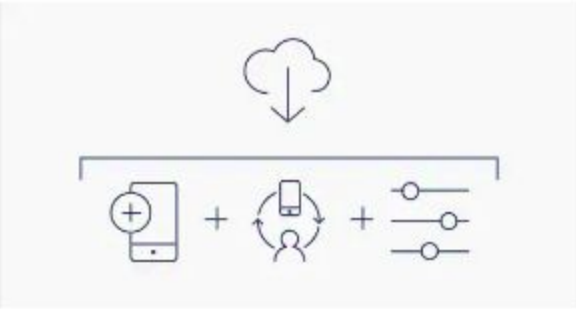
Cloud Types

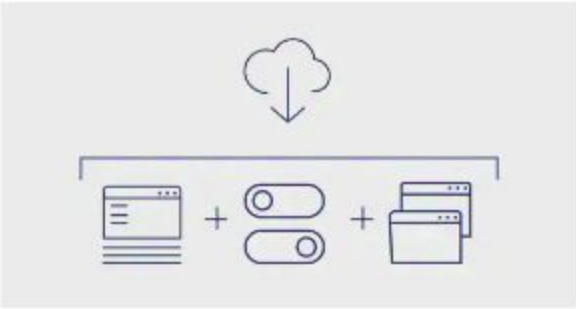
Infrastructure as a service (IaaS)

A vendor provides clients pay-as-you-go access to storage, networking, servers and other computing resources in the cloud.



Platform as a service (PaaS)

A service provider offers access to a cloud-based environment in which users can build and deliver applications. The provider supplies underlying infrastructure.



Software as a service (SaaS)

A service provider delivers software and applications through the internet. Users subscribe to the software and access it via the web or vendor APIs.

Cloud Model Deployment

	Public	Private	Community	Hybrid
Ease of setup and use	Easy	Requires IT proficiency	Requires IT proficiency	Requires IT proficiency
Data security and privacy	Low	High	Comparatively high	High
Data control	Little to none	High	Comparatively high	Comparatively high
Reliability	Vulnerable	High	Comparatively high	High
Scalability and flexibility	High	High	Fixed capacity	High
Cost-effectiveness	The cheapest one	Cost-intensive, the most expensive one	Cost is shared among community members	Cheaper than a private model but more costly than a public one
Demand for in-house hardware	No	Depends	Depends	Depends

Cloud Benefit(s)

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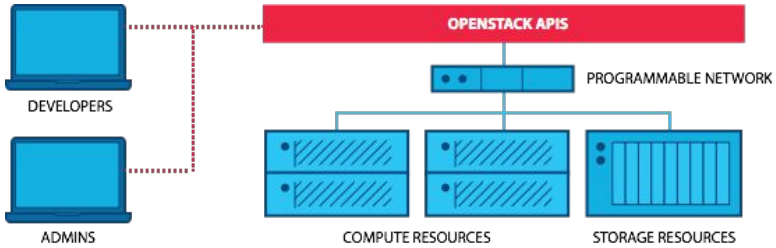
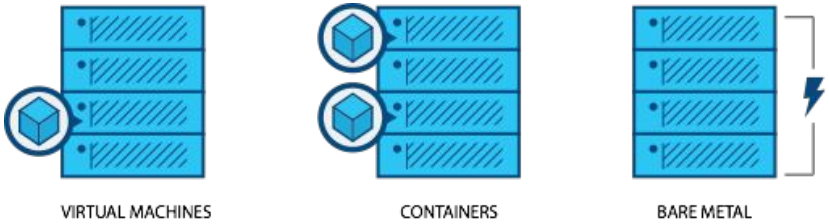
What is OpenStack?



Programmable infrastructure that lays a common set of APIs on top of compute, networking and storage



One platform for virtual machines, containers and bare metal

Open Source Software for creating IaaS private, public, community or hybrid cloud.

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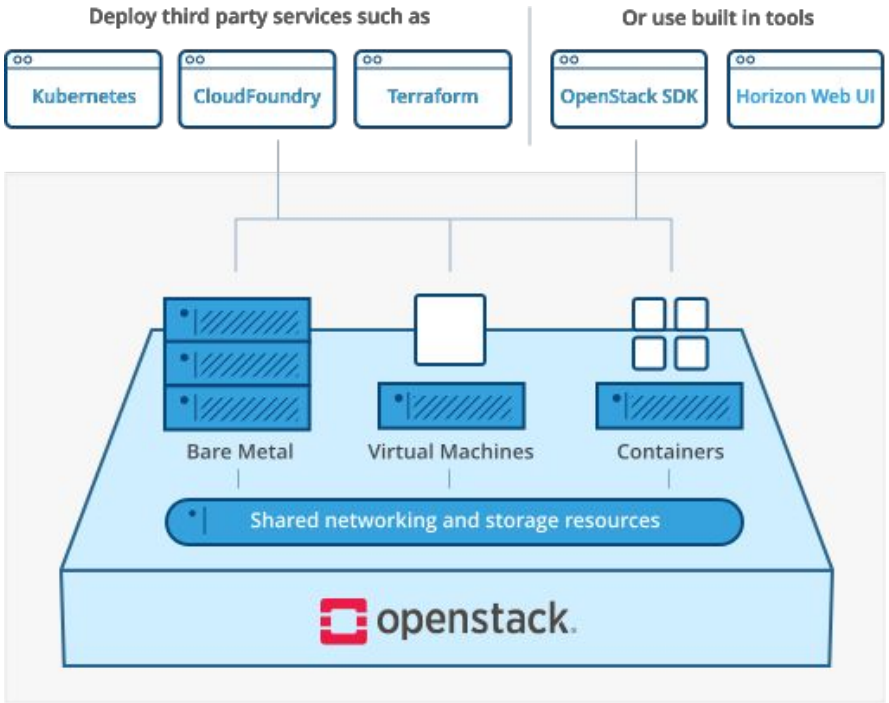
What is OpenStack?



OpenStack is a cloud operating system that controls large pools of compute, storage, and networking resources throughout a datacenter, all managed through a dashboard that gives administrators control while empowering their users to provision resources through a web interface.

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History of OpenStack

2010

NASA + Rackspace develop the basis of OpenStack

2012

OpenStack Foundation established

2014

OpenStack Marketplace opens to showcase maturing ecosystem; “Juno” release seen as enterprise grade

2015

OpenStack Powered interop certification launched

2016 - April

Half the Fortune 100 run OpenStack; Certified OpenStack Administrator program launched

2016

China booms; 86% of telecoms say OpenStack important to their business

2017

OpenStack emerges as one platform for containers, VMs and bare metal

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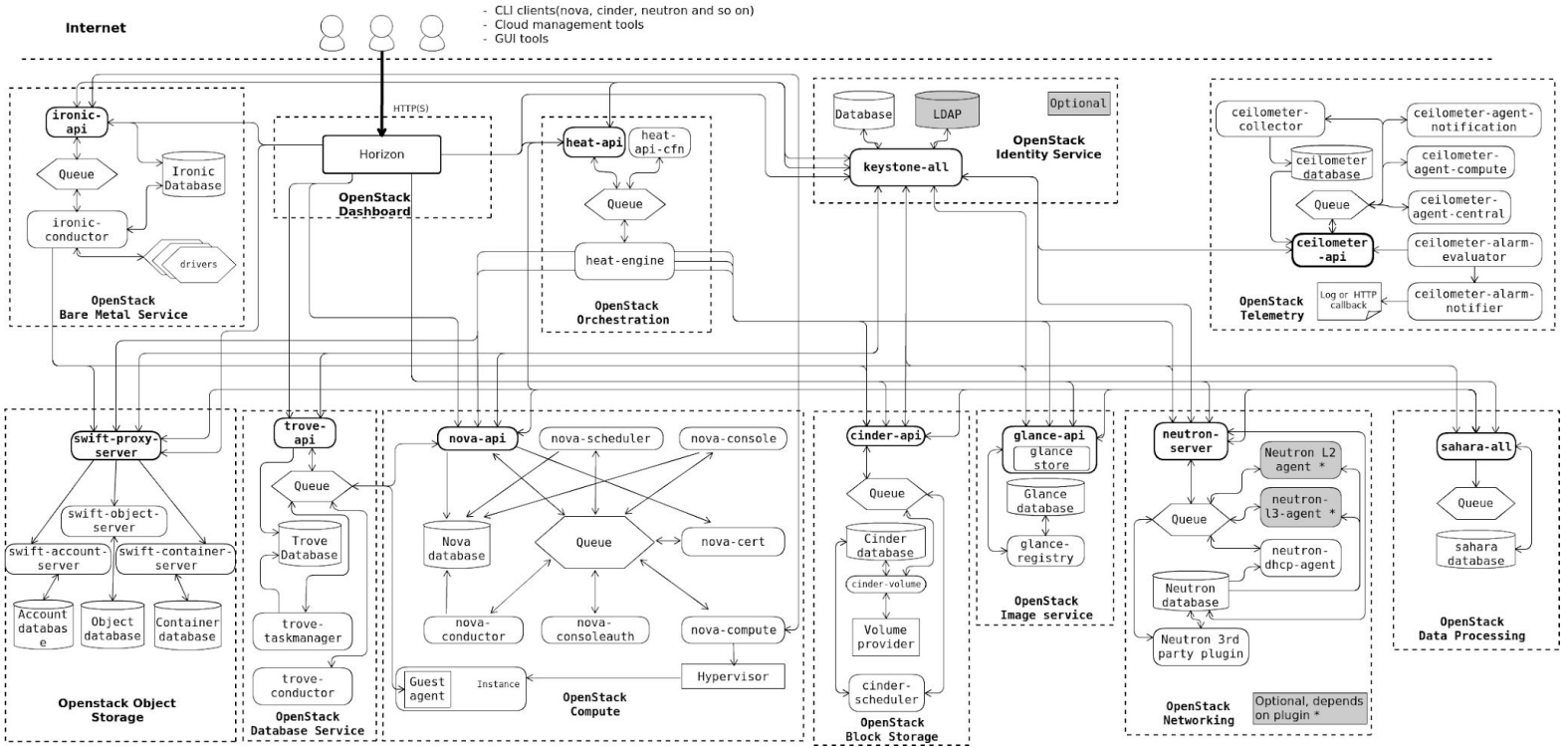
Logical Architecture



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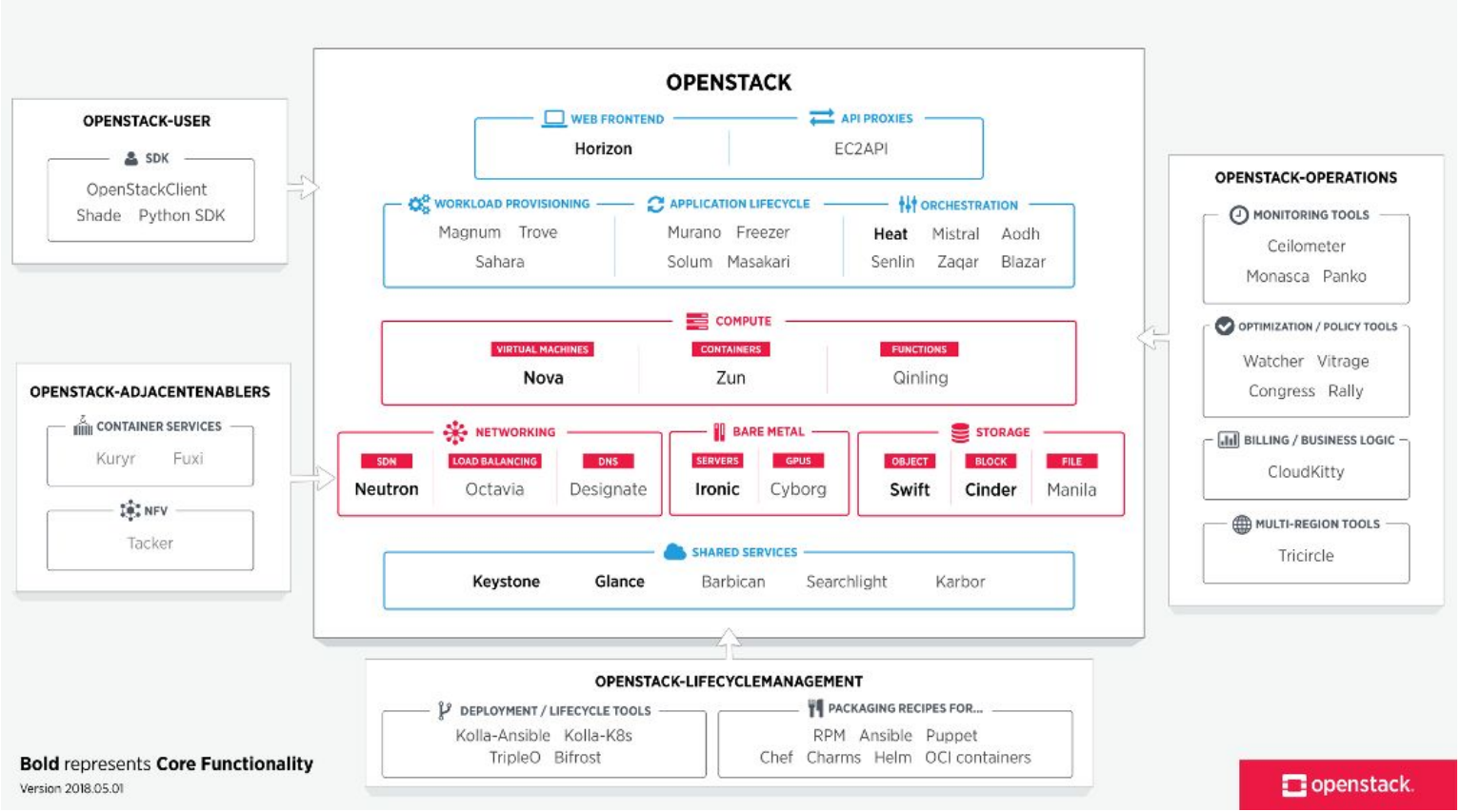
Architecture



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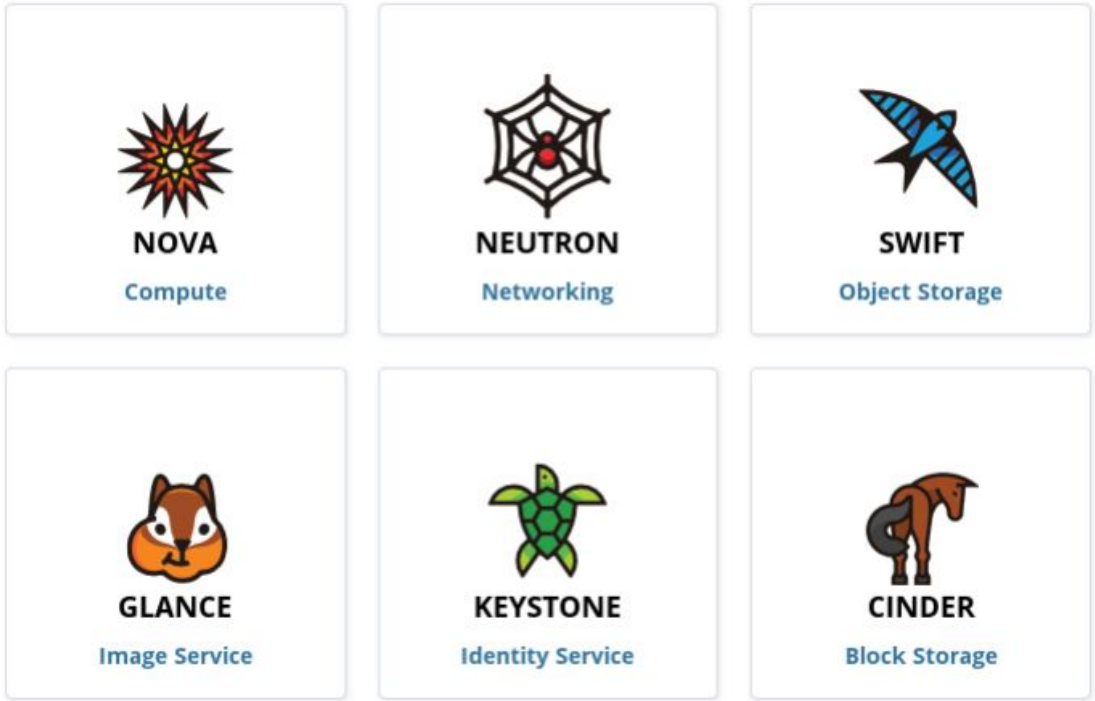
OpenStack Core Service(s)



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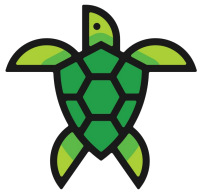
Keystone

- Identity service
- Provide unified authentication for OpenStack projects
- Also manage services endpoints catalog
- Concepts of User, Tenant, Role
- Backends: MySQL, LDAP



Nova

- Compute project
- Provision & manage virtual machines
- Multi-hypervisor support, included KVM & Xen

Neutron

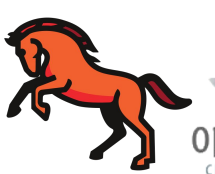
- Networking project
- Manage virtual networks (L2 & L3)
- Multi-backend support: Linux Bridge, OVS, etc

Glance

- Image project
- Catalog & manage library of server images
- Backends: Swift, Amazon, Ceph, GlusterFS, etc

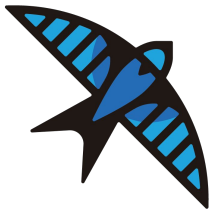
Cinder

- Block storage project
- Manage volumes, plugable to virtual machines
- Backends: Ceph, NFS, iSCSI, etc
- Similar to Amazon Elastic storage



Swift

- Object storage project
- Redundant and scalable
- Long-term storage system for large amounts of data
- HTTP API (RESTFull)
- Similar to Amazon S3



Heat

- Orchestration project
- Provide a template-based for describing an application
- Integrated with OpenStack projects
- Auto-scaling and High-Availability for VMs
- Compatible with AWS CloudFormation

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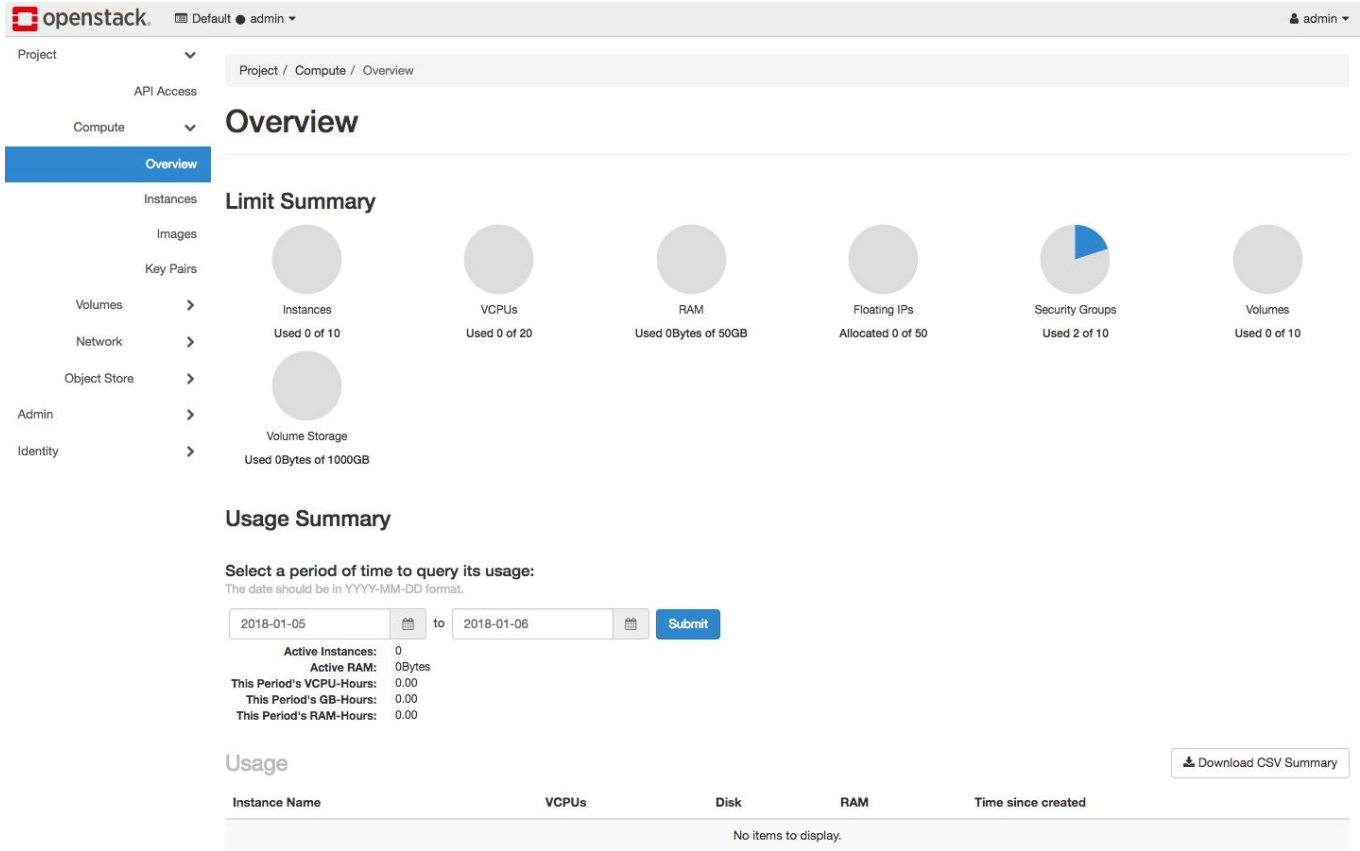
Horizon


openstack.
Default ● admin
admin
Project
API Access
Compute
Overview
Instances
Images
Key Pairs
Volumes
Network
Object Store
Admin
Identity
Project / Compute / Overview
Overview
Limit Summary
Instances
Used 0 of 10
VCPUs
Used 0 of 20
RAM
Used 0Bytes of 50GB
Floating IPs
Allocated 0 of 50
Security Groups
Used 2 of 10
Volumes
Used 0 of 10
Volume Storage
Used 0Bytes of 1000GB
Usage Summary
Select a period of time to query its usage:
The date should be in YYYY-MM-DD format.
2018-01-05
to
2018-01-06
Submit
Active Instances: 0
Active RAM: 0Bytes
This Period's VCPU-Hours: 0.00
This Period's GB-Hours: 0.00
This Period's RAM-Hours: 0.00
Usage
Download CSV Summary
Instance Name
VCPUs
Disk
RAM
Time since created
No items to display.

30+ Public cloud providers around the world

openstack.org/marketplace/public-clouds

65,000
COMMITS IN 2018

Average of 155 changes/day during Stein cycle

(Only 3 projects achieve this level of activity: OpenStack, Linux kernel and Chromium.)

OpenStack Release

Series	Status	Initial Release Date	Next Phase	EOL Date
Train	Development	2019-10-16 *estimated* (schedule)	Maintained *estimated 2019-10-16*	
Stein	Maintained	2019-04-10	Extended Maintenance *estimated 2020-10-10*	
Rocky	Maintained	2018-08-30	Extended Maintenance *estimated 2020-02-24*	
Queens	Maintained	2018-02-28	Extended Maintenance *estimated 2019-10-25*	
Pike	Extended Maintenance	2017-08-30	Unmaintained *estimated TBD*	
Ocata	Extended Maintenance	2017-02-22	Unmaintained *estimated TBD*	
Newton	End Of Life	2016-10-06		2017-10-25
Mitaka	End Of Life	2016-04-07		2017-04-10
Liberty	End Of Life	2015-10-15		2016-11-17
Kilo	End Of Life	2015-04-30		2016-05-02
Juno	End Of Life	2014-10-16		2015-12-07
Icehouse	End Of Life	2014-04-17		2015-07-02

https://releases.openstack.org/

How Do You Get OpenStack?

1

Distros—manage packaging and testing

2

Managed private cloud

A Remotely managed in your datacenter

OR

B Hosted private cloud in service provider facility

3

Public cloud provider

NEOCLOUD

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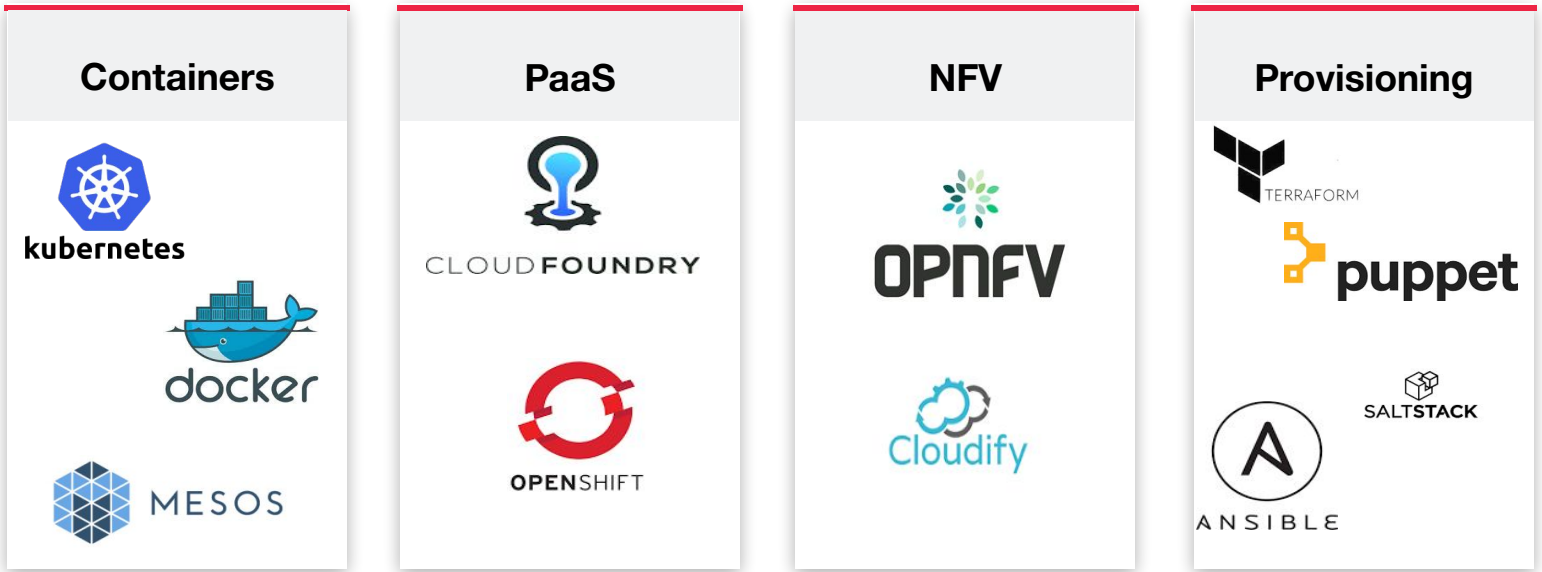
Cross-Comunity Collaboration

OpenStack integrates with a number of other technologies, including many popular open source projects, enabling users to combine them with OpenStack.



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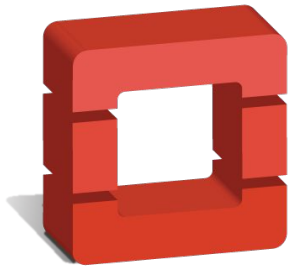

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