



# Implantação de Arquitetura de Nuvem Privada

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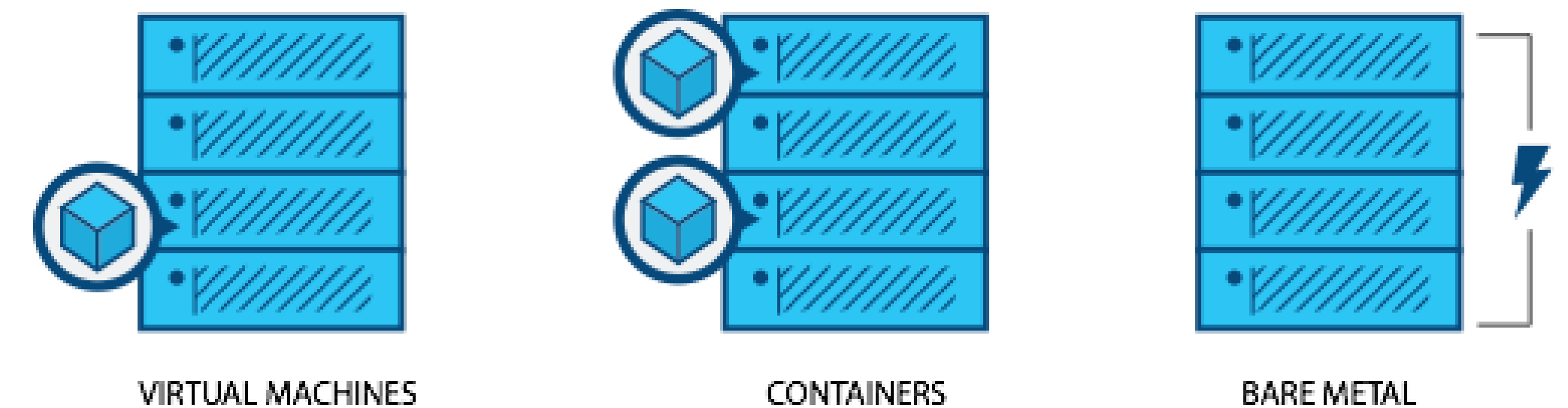
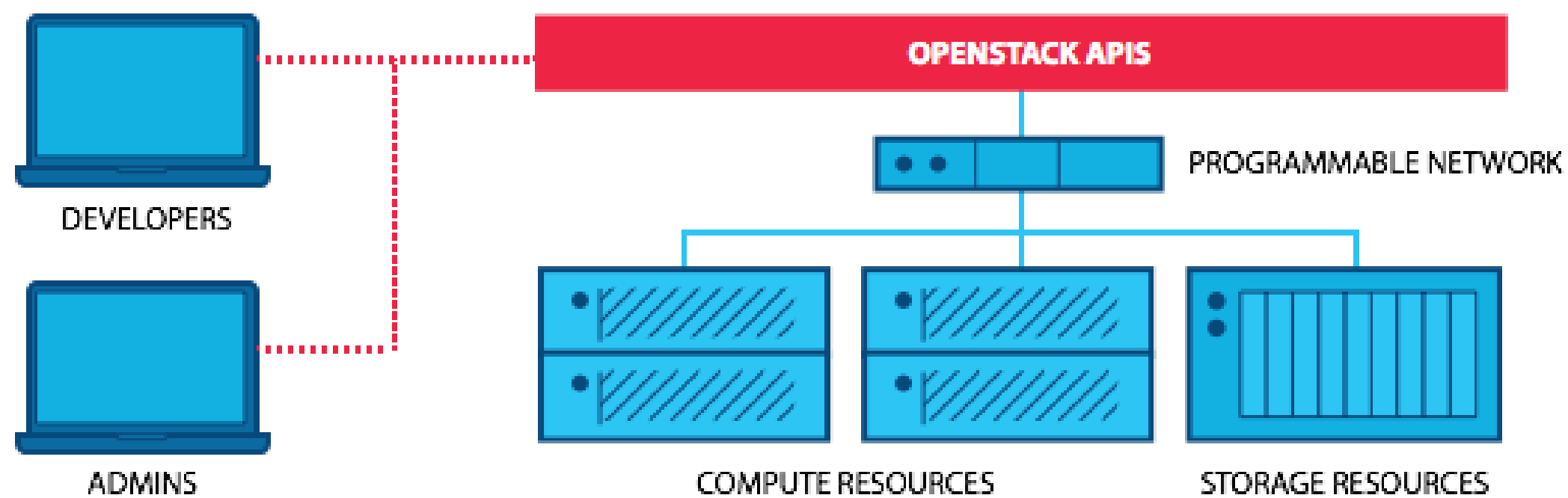
BLOCO: ARQUITETURA DE INFRAESTRUTURA DE APLICAÇÕES

PROF. RODRIGO EIRAS, M.SC.

[ETAPA 1] AULA 2 – OPENSTACK FOUNDATION

WE ARE  
OPEN  
STACK

# 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

# OpenStack Cloud Models

THERE'S A GLOBAL SHIFT TOWARD CLOUD. THE BENEFITS: AGILITY, SCALABILITY, DECREASED HARDWARE COSTS.

**Public cloud:** shared resource, “pay-as-you-go” models are common. OpenStack public cloud is available in 60+ datacenters globally.

**Private Cloud:** dedicated to a single user. Can be hosted private cloud in a vendor’s data center or yours, or remotely managed private cloud.

**Hybrid cloud:** a mix of private cloud and public cloud orchestrated together to meet company needs

3 CLOUD MODELS



Before we get to  
OpenStack...

# A Word On “The Cloud”

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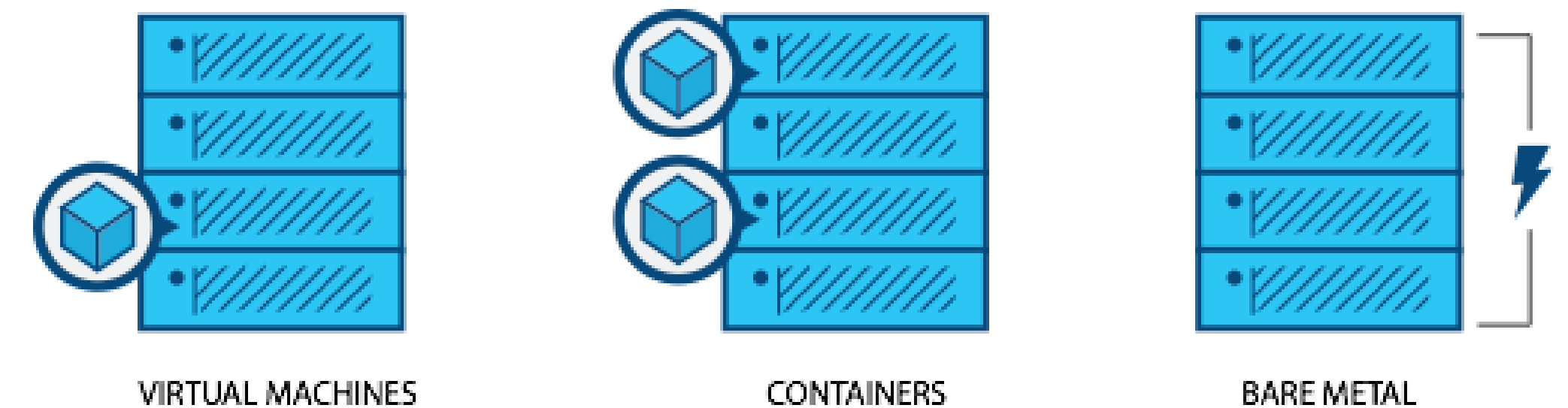
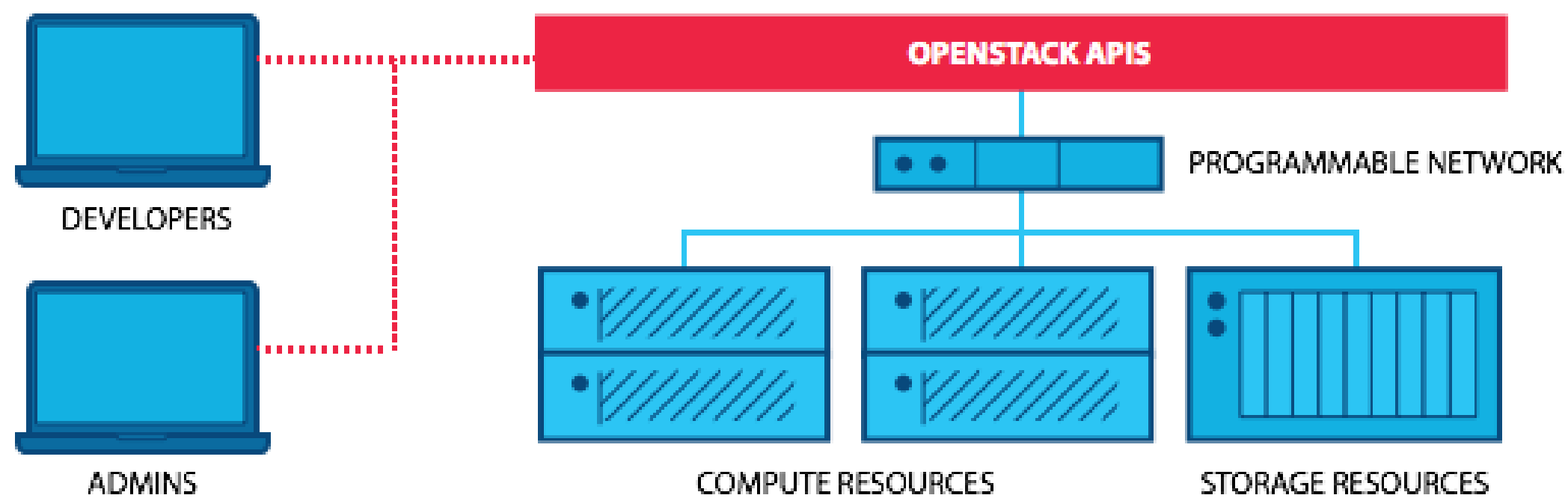
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3 CLOUD MODELS

# What is OpenStack



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# OpenStack is open source

## HERE'S WHY THAT MATTERS

**Choice & control:** ability to choose between and switch vendors

**Ability to contribute** or directly influence the roadmap

**Widely adopted** open source APIs are the new standards

**Part of a vibrant community** to share knowledge and help each other

## OPENSTACK PRINCIPLES

1 OPEN SOURCE

2 OPEN DESIGN

3 OPEN DEVELOPMENT

4 OPEN COMMUNITY



WHAT IT IS

WHY USE IT

THE COMMUNITY

USING OPENSTACK

FAQS

# Primary business drivers

## #1 avoid vendor lock-in

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## #2 accelerate innovation

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## #3 operational efficiency



# Which industries choose OpenStack?

## RETAIL/E-COMMERCE



## ENERGY AND MANUFACTURING



## FINANCIAL



## INSURANCE



## TELECOM



## ENTERTAINMENT



## ACADEMIC/RESEARCH



See more at  
[openstack.org/user-stories](https://openstack.org/user-stories)

# What runs on OpenStack?

## TELECOM/NFV

**86% of telecoms** say OpenStack is important to their business; many are using OpenStack to virtualize their networks and implement edge computing to achieve agility significant cost savings.

## MULTI-CLOUD

**DigitalFilm Tree** uses interoperable OpenStack private and public clouds to process thousands of hours of raw footage into a one-hour TV show.

## HPC

**CERN** runs one of the largest OpenStack clouds to process data from the Large Hadron Collider, giving physicists the resources they need to unleash the secrets of the universe.

## E-COMMERCE

**Walmart** moved their global e-commerce platform to OpenStack, powering desktop, mobile, tablet and kiosk users.

## ENTERPRISE APPS

**Comcast** powers customer-facing and internal applications and services for both production and development environments with OpenStack.

## DEVELOPER PRODUCTIVITY

**Adobe** Digital Marketing uses OpenStack to convert their existing virtualization environment into self-service IT.

## BIG DATA

**Banco Santander** runs 1,000 compute nodes of OpenStack in data centers across the world, and uses Cloudera on OpenStack to power fraud detection.

## WEB SERVICES

**Workday** moved their on-demand software services from static, virtualized environments to a fully elastic and scalable platform based on OpenStack.

WHAT IT IS

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FAQS

# History of OpenStack

2010

NASA + Rackspace  
develop the basis of  
OpenStack

2014

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

2016 - April

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

2017

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

2012

OpenStack Foundation  
established

2015

OpenStack Powered  
interop certification  
launched

2016

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

# About the OpenStack Foundation

Maintain infrastructure for development & communication

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Coordinate software releases

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Trademark and legal management

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Host summits & development meetings

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Promote the use of open source infrastructure projects

**[openstack.org/foundation](https://openstack.org/foundation)**



[WHAT IT IS](#)[WHY USE IT](#)[THE COMMUNITY](#)[USING OPENSTACK](#)[FAQS](#)

# OpenStack Foundation Sponsors

## PLATINUM MEMBERS



## GOLD MEMBERS



[WHAT IT IS](#)[WHY USE IT](#)[THE COMMUNITY](#)[USING OPENSTACK](#)[FAQS](#)

# The OpenStack Community



**81,000+**

MEMBERS



**187**

COUNTRIES

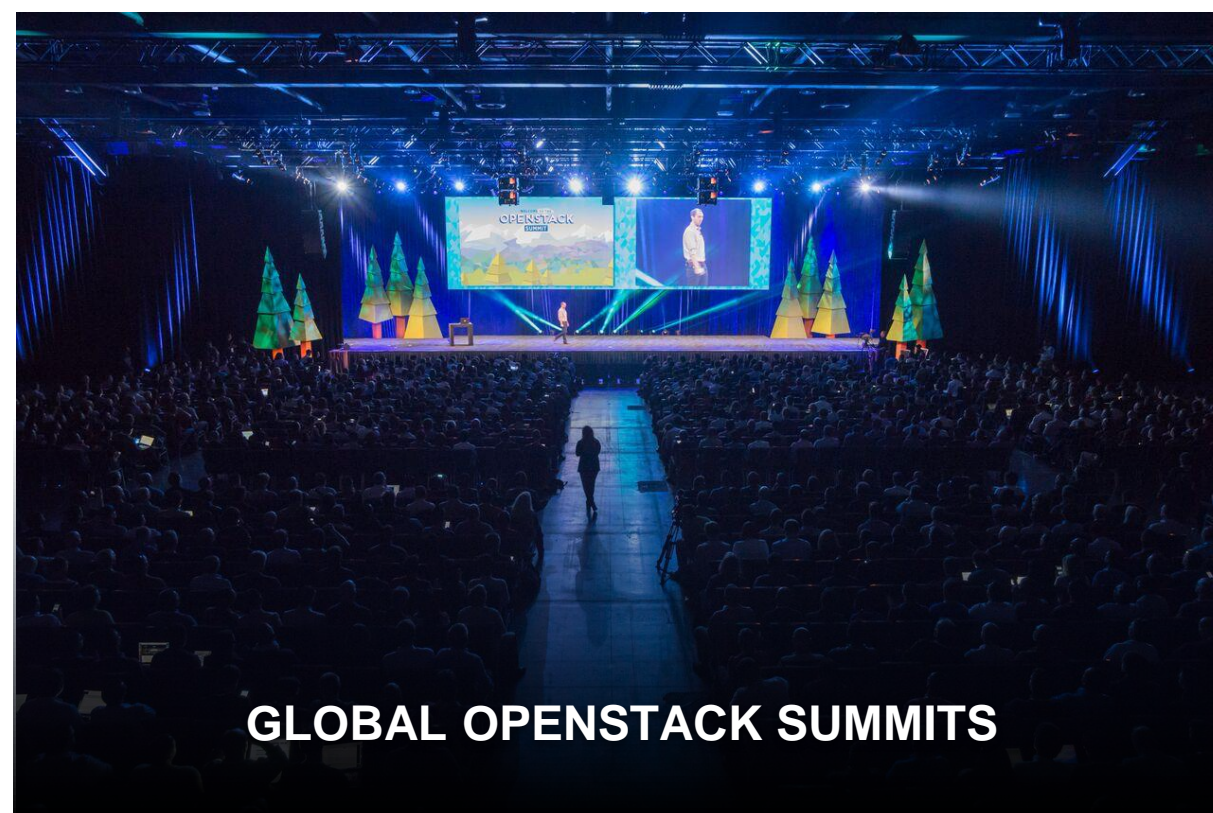


**670+**

ORGANIZATION  
S



# How does the community collaborate?



GLOBAL OPENSTACK SUMMITS



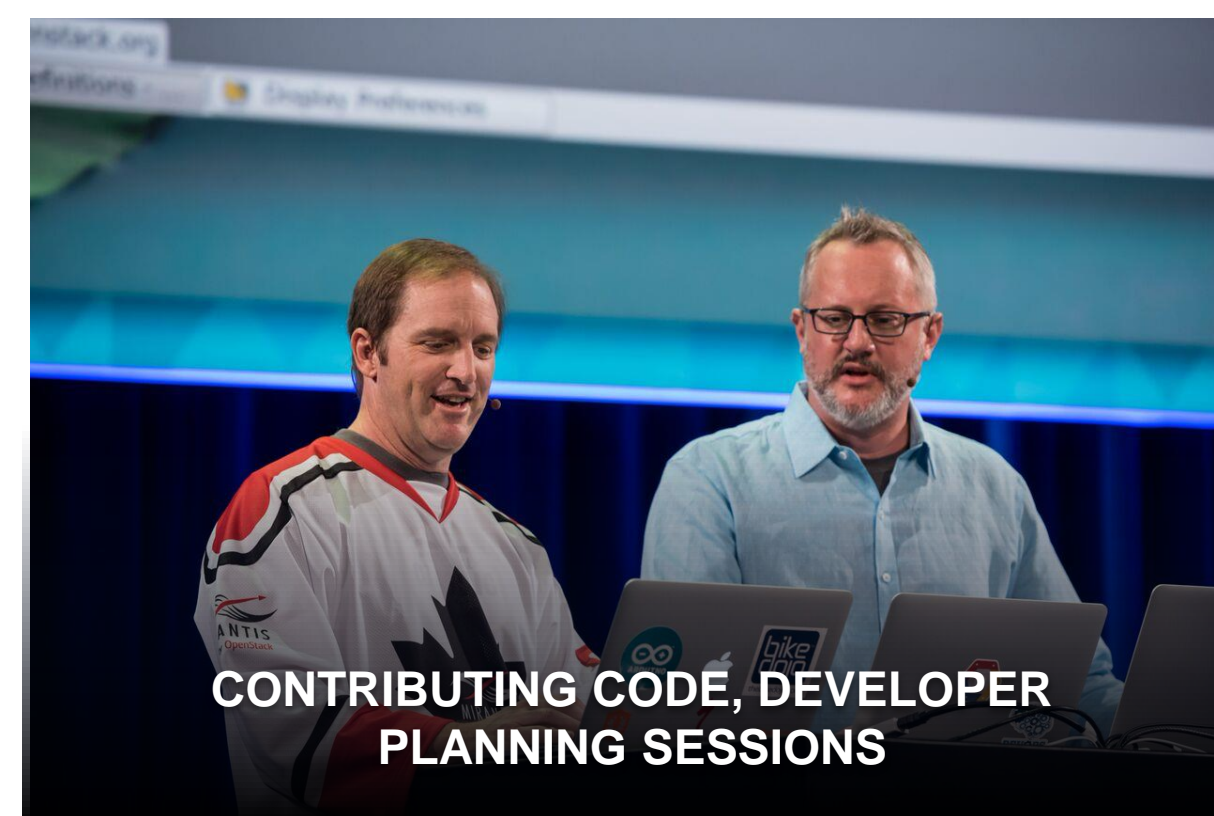
VOTING ON REPRESENTATIVES



HACKATHONS



TOPICAL MAILING LISTS

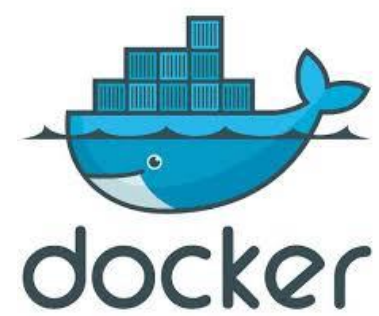
CONTRIBUTING CODE, DEVELOPER  
PLANNING SESSIONSREGIONAL OPENSTACK DAYS &  
LOCAL MEETUPS



# Cross-community collaboration

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

## Containers



## PaaS



## NFV



## Provisioning



WHAT IT IS

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# OpenStack's software releases

NEWTON

October 2016

OCATA

February 2017

PIKE

August 2017

QUEENS

February 2018



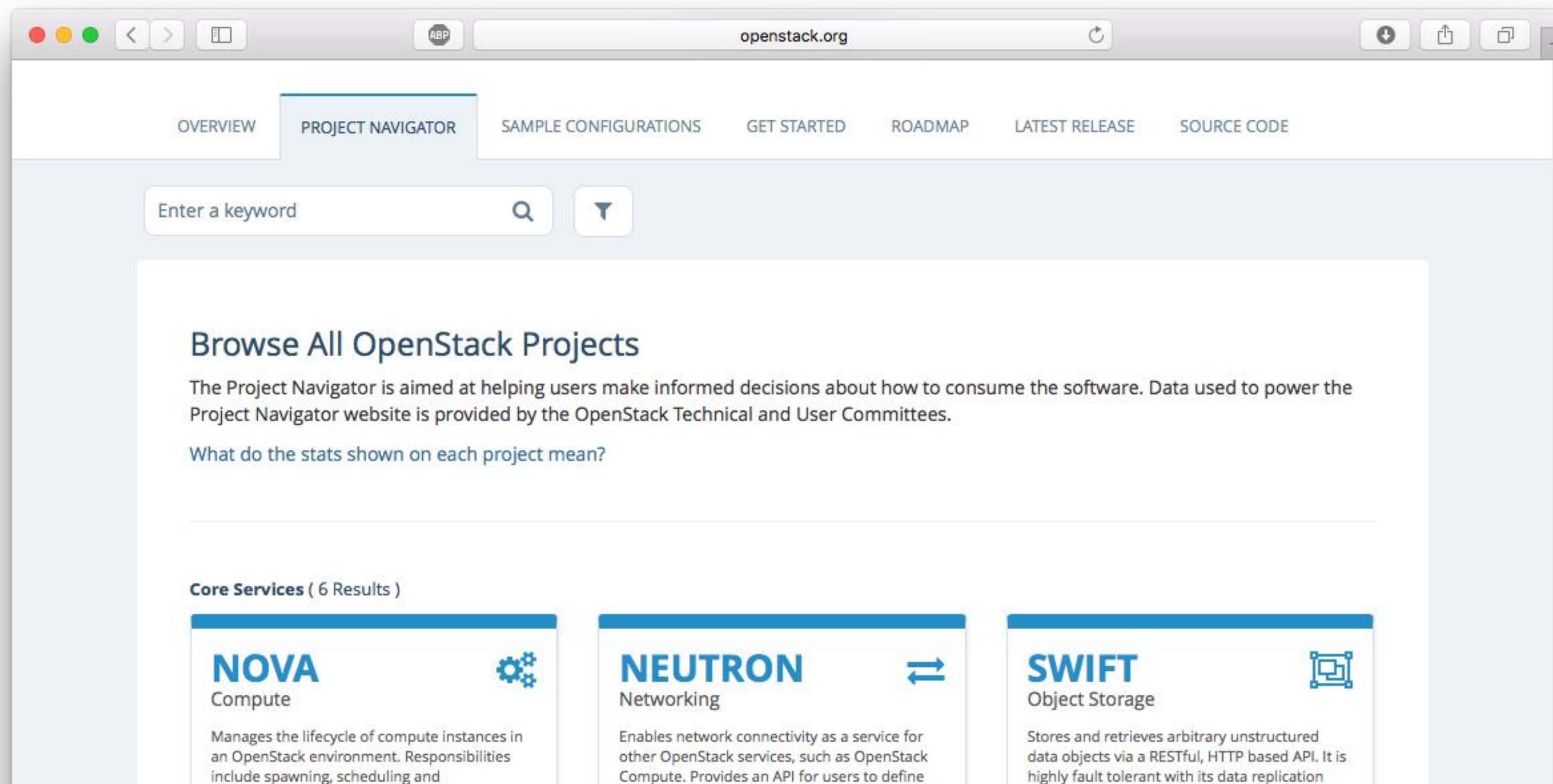
Releases happen  
every 6 months

In development

**Most clouds run one of the two most recent releases**

Learn more about the releases at [openstack.org/software](https://openstack.org/software)

# The OpenStack Framework



WHAT GETS  
CALLED  
OPENSTACK?

USING THE SAMPLE  
CONFIGURATIONS

CORE SERVICES &  
OPTIONAL SERVICES



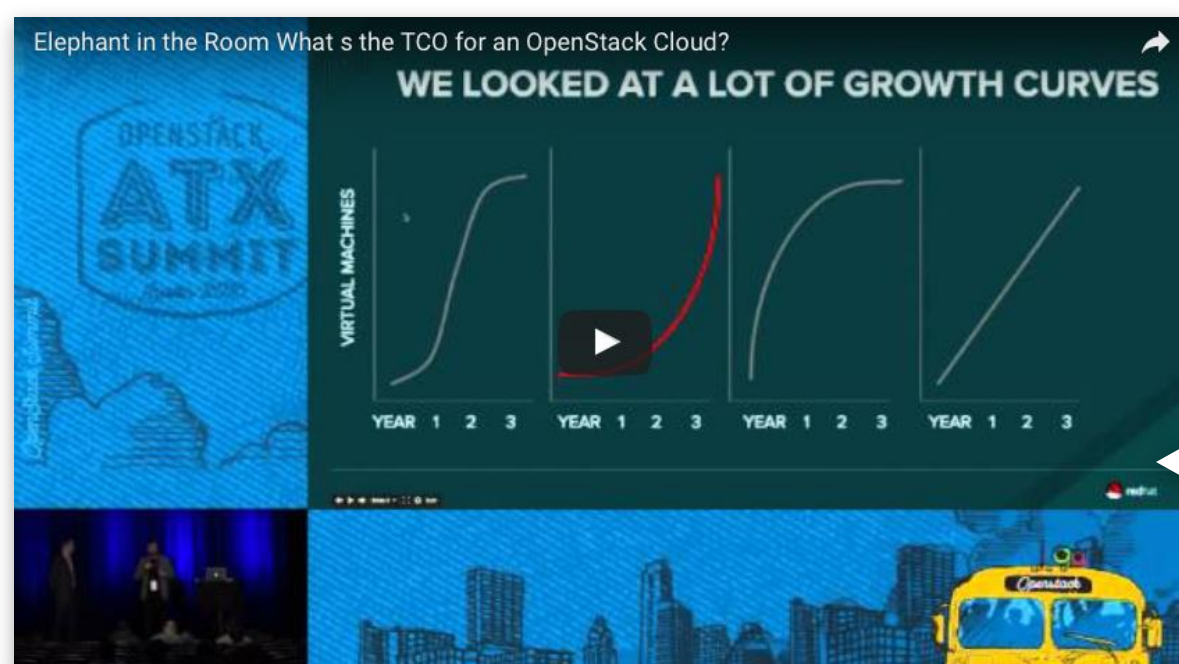
# It costs less and does more

*“In all private cloud-based applications...we expect approximately 70% of cost savings as compared to classical IT solutions.”*

–Holger Urban, Volkswagen

*“TD Bank...experienced a 25% to 40% costs savings on their platforms and virtual machines over their previous solution by deploying OpenStack.”*

–Forbes, “3 Reasons Why An OpenStack Private Cloud May Cost You Less Than Amazon Web Services”



Watch this session:

[Elephant in the Room: What's the TCO for an OpenStack Cloud?](#)

# OpenStack is recognized for its security



OpenStack awarded the  
Core Infrastructure Initiative Best Practices badge



“The OpenStack community is taking  
security seriously...”

[openstack.org/software/security](https://openstack.org/software/security)

[WHAT IT IS](#)[WHY USE IT](#)[THE COMMUNITY](#)[USING OPENSTACK](#)[FAQS](#)

# Gaining OpenStack skills

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## Train who you have

### Training

[openstack.org/marketplace/training/](https://openstack.org/marketplace/training/)

## Certification

### Certified OpenStack Administrator

*Take by 1800+ people since April 2016*

[openstack.org/coa](https://openstack.org/coa)

# Next Steps

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## How you can get started in OpenStack...

- 1 JOIN THE FOUNDATION: [OPENSTACK.ORG/JOIN](https://openstack.org/join)
- 2 LEARN HOW TO CONTRIBUTE: [OPENSTACK.ORG/COMMUNITY](https://openstack.org/community)
- 3 READ THIS: [DESIGNING, MIGRATING AND DEPLOYING APPLICATIONS](https://openstack.org/designing-migrating-and-deploying-applications)
- 4 ATTEND AN EVENT IN YOUR AREA: [OPENSTACK.ORG/EVENTS](https://openstack.org/events)
- 5 MORE RESOURCES: [OPENSTACK.ORG/SOFTWARE/START/](https://openstack.org/software/start/)