

Seminario Cloud-DI

Plataforma cloud para Docencia e Investigación del Departamento de Informática
Universidad de Almería



Foto: Flickr: Elvira Boix

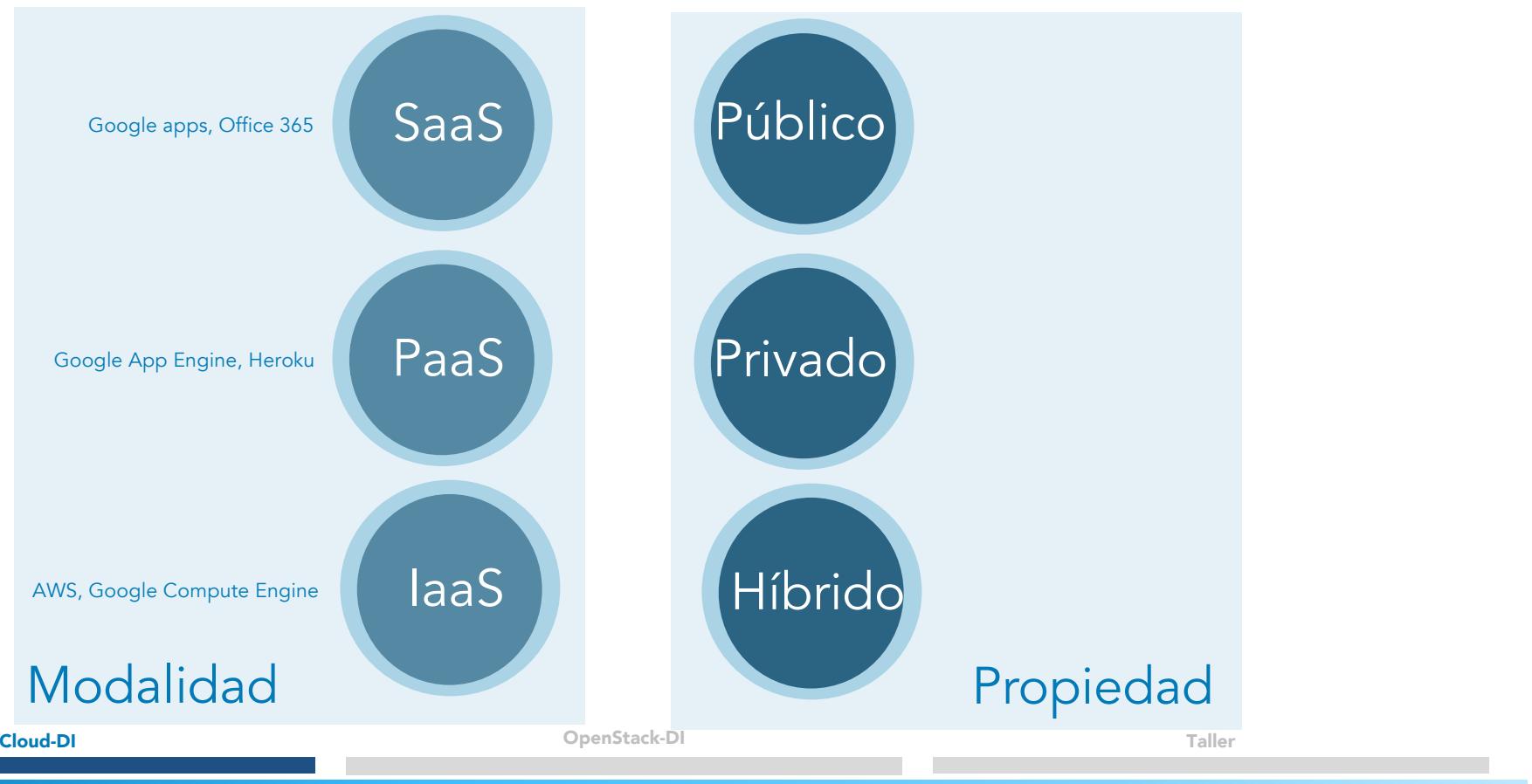
01

Cloud-DI



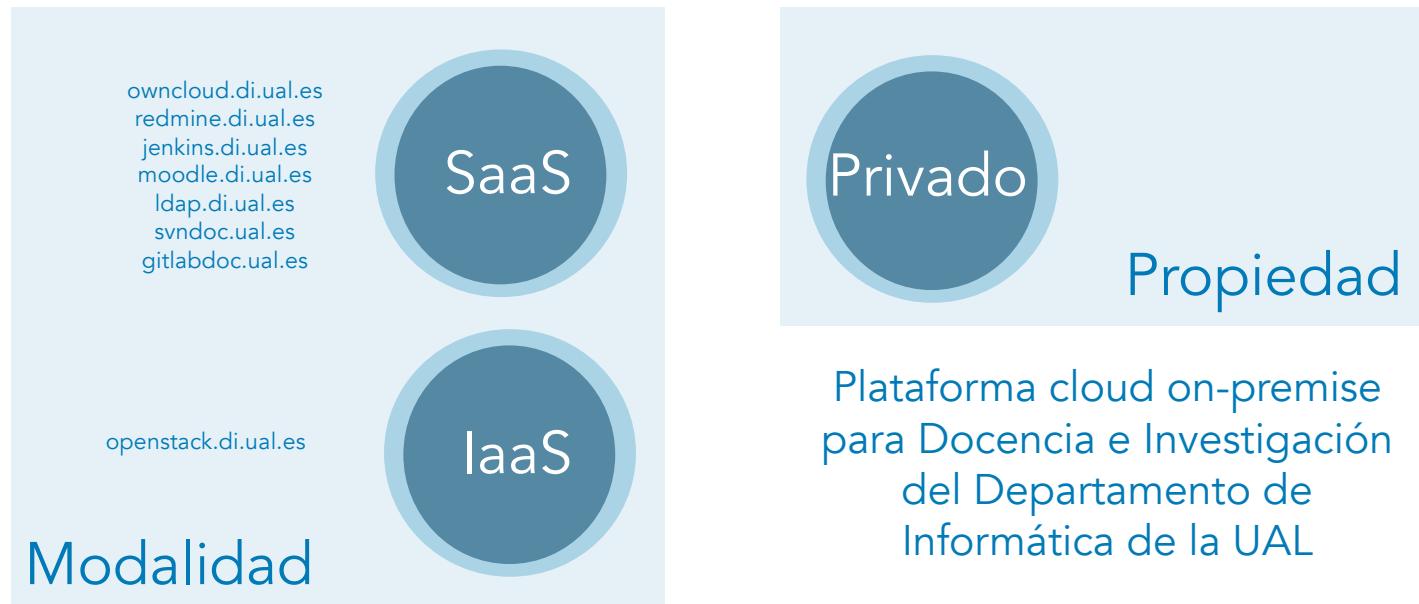
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Clasificación Cloud Computing





Cloud-DI





Tecnología Cloud-DI

Servicios de Cloud-DI

GitLab, SVN, Redmine, Moodle, Jenkins, ...



Software para la creación de nubes
privadas

0 € Licencias
Open Source



Cloud-DI

OpenStack-DI

Taller



Infraestructura Cloud-DI



Servidores de cómputo: 12
RAM disponible: 2.304 GB
Núcleos: 384
Espacio disponible para instancias: 32,4 TB
Almacenamiento disponible para volúmenes: 21,7 TB

Producción



Servidores de cómputo: 3
RAM disponible: 94,2 GB
Núcleos: 48
Espacio disponible para instancias: 1,9 TB
Almacenamiento disponible para volúmenes: 10,8 TB
Almacenamiento de objetos
Almacenamiento de archivos compartido

Testing

Cloud-DI

OpenStack-DI

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02

OpenStack-DI



Qué es OpenStack

Open source software for creating private and public clouds.



OpenStack software controls large pools of compute, storage, and networking resources throughout a datacenter, managed through a [dashboard](#) or via the [OpenStack API](#). OpenStack works with [popular enterprise and open source technologies](#) making it ideal for heterogeneous infrastructure.

[Hundreds of the world's largest brands](#) rely on OpenStack to run their businesses every day, reducing costs and helping them move faster. OpenStack has a strong [ecosystem](#), and users seeking commercial support can choose from different OpenStack-powered products and services in the [Marketplace](#).

openstack.org

Quién está detrás de OpenStack



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Clouds soportados por OpenStack



IBM Cloud is an OpenStack-powered private cloud. Fully managed, single-tenant IaaS available in IBM Cloud data centers or on-premises in yours. Achieve the security, control, and performance of private cloud with the ease of public cloud.



Rackspace delivers OpenStack private clouds as-a-service, architected like a public cloud and designed for scale and service availability to any data center in the world.



BootStack, the fully managed cloud service from Canonical is the fastest path to a production private OpenStack cloud. Focus on your business while Canonical takes care of building and running your OpenStack cloud.



Oracle OpenStack is cloud management software that provides customers an enterprise-grade solution to deploy and manage their entire IT environment.

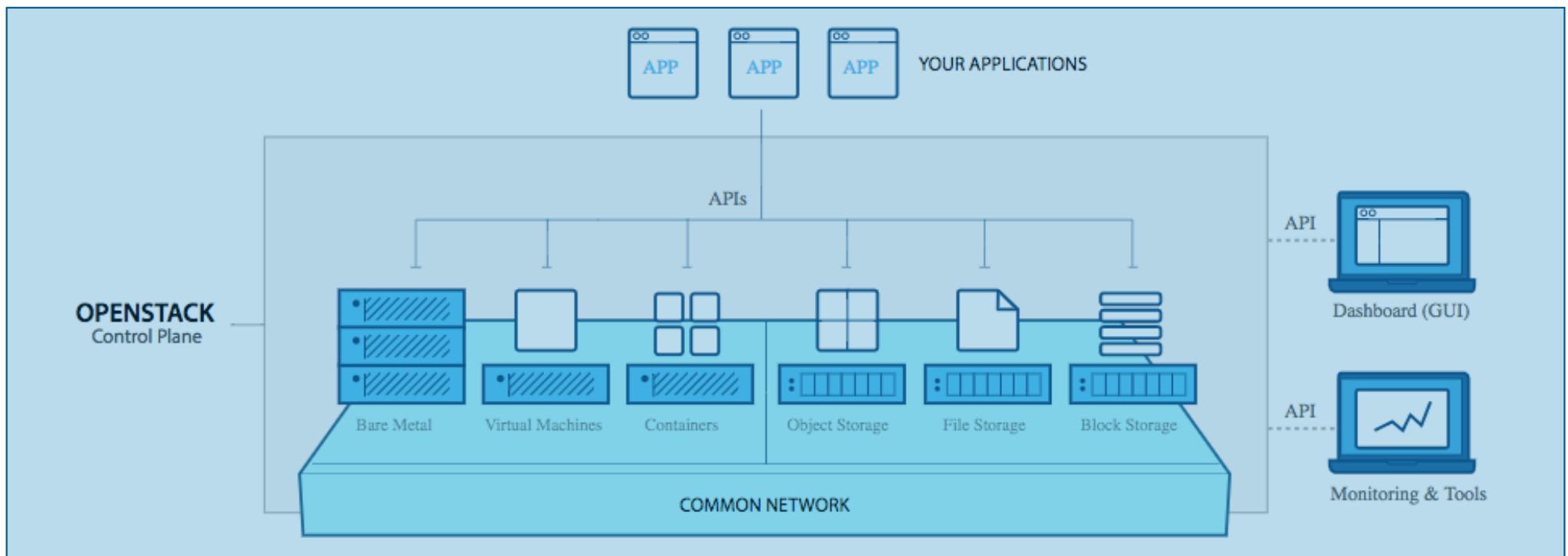


Open Cloud Stack is the private cloud solution based on Telefonica Open Cloud. This allows our customers to create a truly Hybrid Cloud with the same user interfaces and APIs.

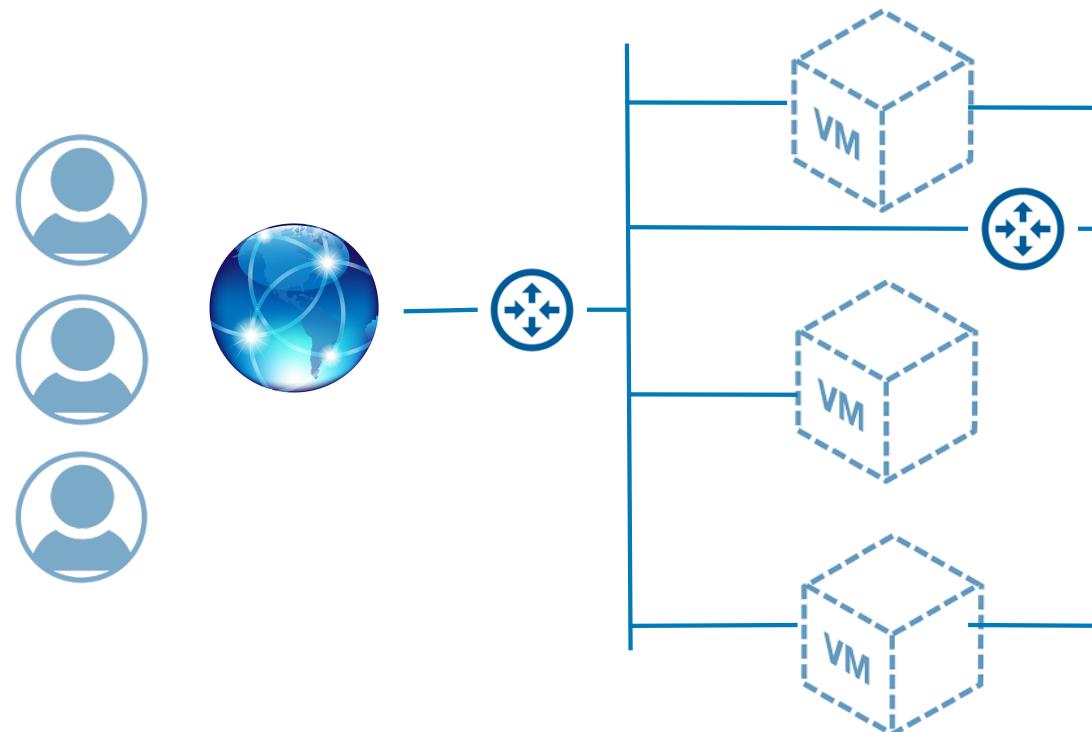


Discover digital opportunities by using **Cloudwatt** resources & OpenStack APIs to build your app and platform. Scale up & down resources to maximize performance.

Arquitectura de OpenStack



Máquinas virtuales y Redes como servicio

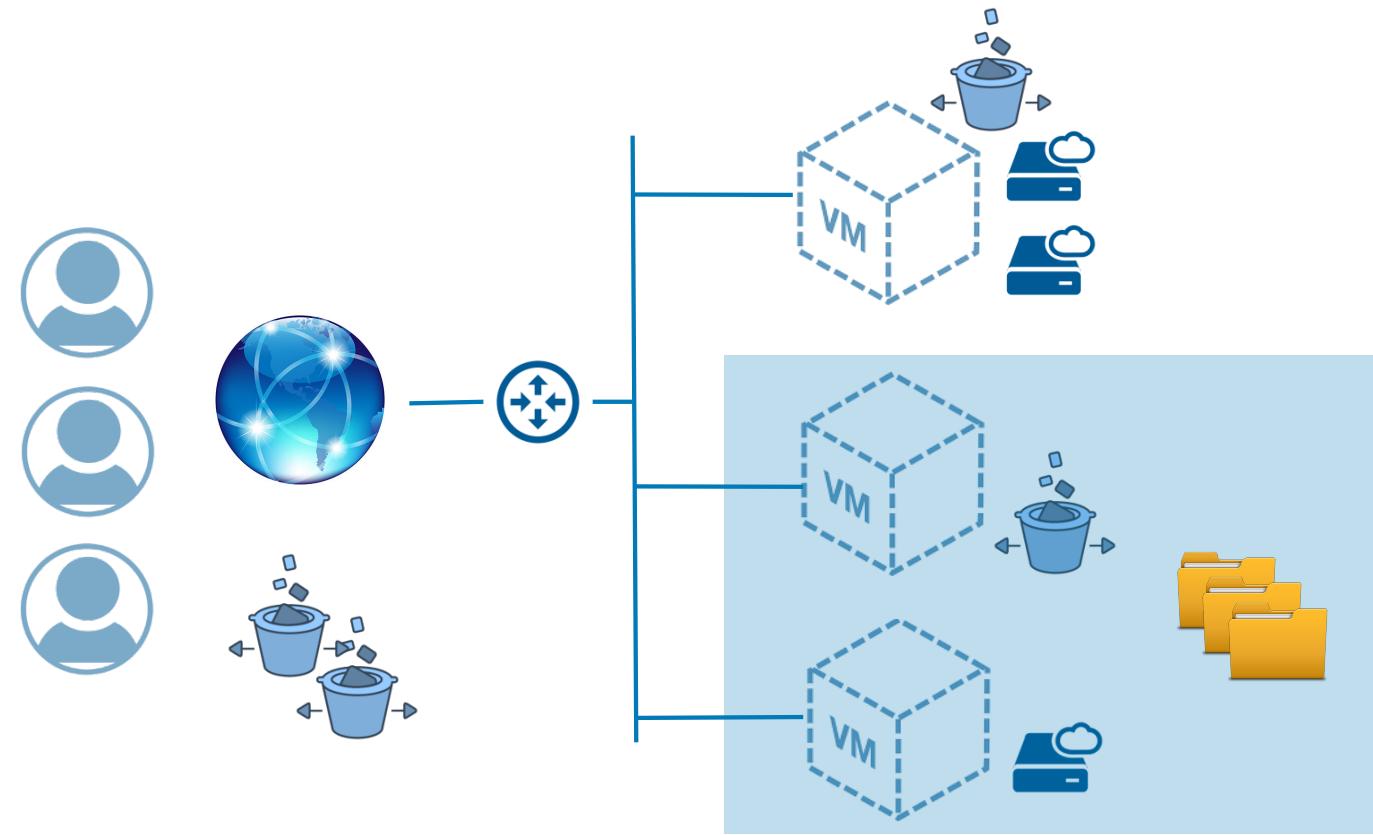


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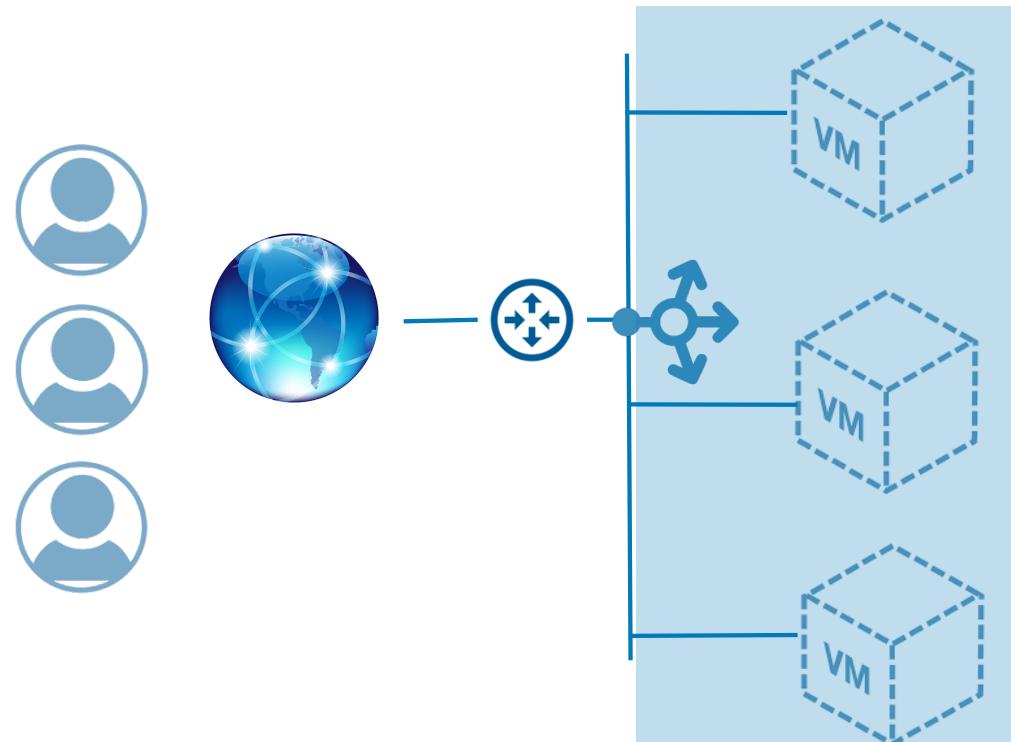
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Almacenamiento como servicio



Balanceadores de carga como servicio

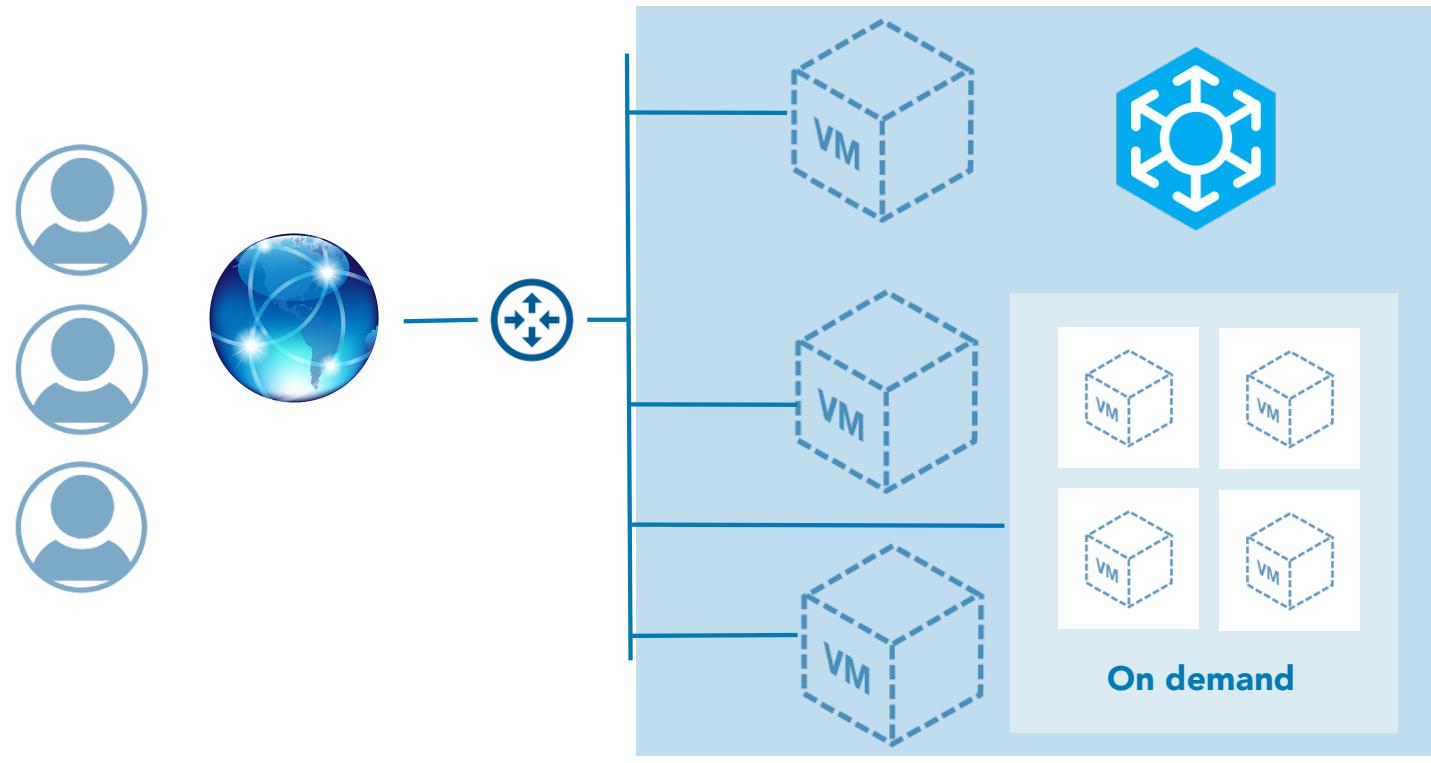


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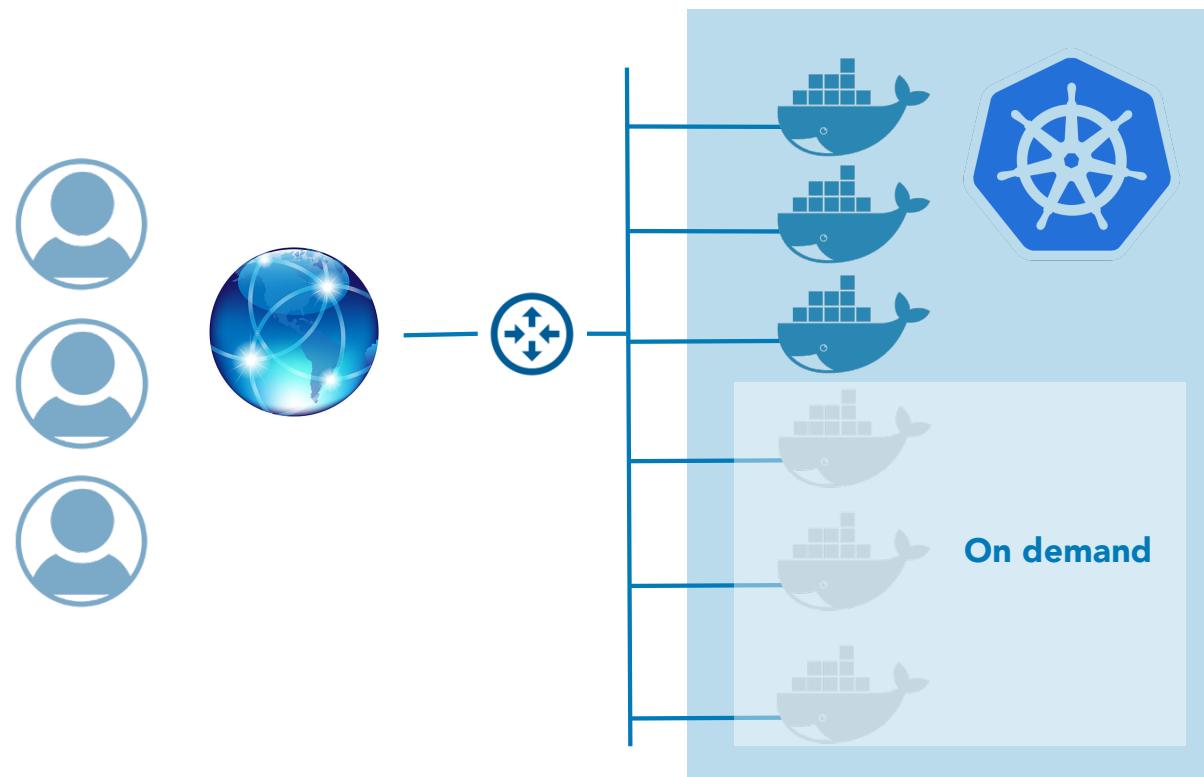
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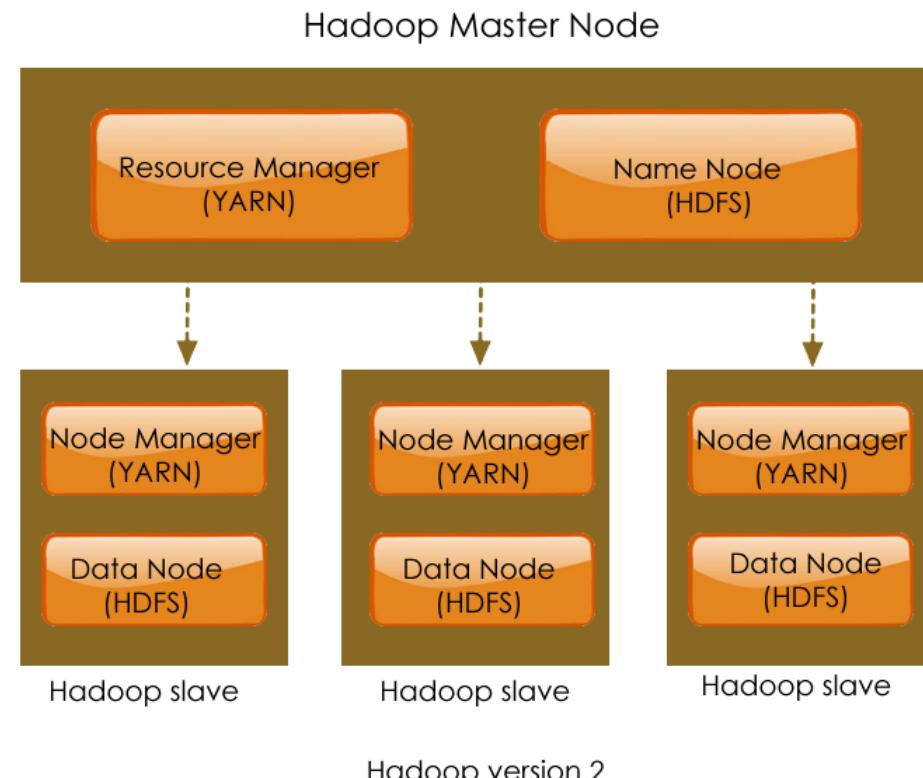
Orquestación de infraestructura



Contenedores como servicio



Framework de procesamiento para Big data



03 Taller



Foto: Flickr. Dboybaker



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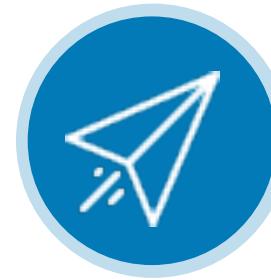
Creación de instancias

Configuración de cuenta
Creación de instancias
Conexión a instancias



Uso de volúmenes

Creación de volúmenes
Gestión de volúmenes
Transferencia de volúmenes



Próximos servicios

Framework de procesamiento para Big data
Contenedores como servicio
Almacenamiento compartido de archivos

Framework de procesamiento Big data

Proyecto

Compute

Container Infra

Red

Orquestación

Displaying 6 items

Database

Data Processing

Clusters

Plugins

Jobs

Almacén de objetos

Identity

App Catalog

Projeto / Data Processing / Data Processing Plugins

Data Processing Plugins

Title	Enabled Versions	Description
Vanilla Apache Hadoop	2.7.1	The Apache Vanilla plugin provides the ability to la... can also deploy the Oozie component.
Apache Spark	1.6.0 1.3.1	This plugin provides an ability to launch Spark on H...
Cloudera Plugin	5.5.0 5.4.0 5.9.0 5.7.0 5.3.0	The Cloudera Sahara plugin provides the ability to l... management console.
HDP Plugin	2.3 2.5 2.4	The Ambari Sahara plugin provides the ability to la... Ambari
Apache Storm	0.9.2 1.0.1	This plugin provides an ability to launch Storm clus...
MapR Hadoop Distribution	5.2.0.mrv2	The MapR Distribution provides a full Hadoop stack ... ecosystem, and the MapR Control System user int...

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Framework de procesamiento Big data

Proyecto > Proyecto / Data Processing / Clusters

Clusters

Clusters Cluster Templates Node Group Templates Image Registry

Nombre ▾ Filtrar + Create Template Delete Templates More Actions ▾

Displaying 2 items

Clusters	Nombre	Plugin	Version	Node Processes	Actions
Plugins	vanilla-default-worker12	vanilla	2.7.1	• datanode • nodemanager	Editar plantilla ▾
Jobs	vanilla-default-master12	vanilla	2.7.1	• namenode • resourcemanager	Editar plantilla ▾

Almacén de objetos >

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Framework de procesamiento Big data

Edit Node Group Template

Configure Node Group Template * Node Processes * Security Shares HDFS Parameters *

Hadoop Parameters YARN Parameters *

Template Name *
vanilla-default-master12

Descripción

OpenStack Flavor *
medium

Zona de Disponibilidad ?
No availability zone specified

Storage location *
Ephemeral Drive

Base Image
No image specified

Floating IP Pool
lowcost-net

Auto-configure ?
 Proxy Gateway ?
 Público ?
 Protegido ?

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Edit Node Group Template

Configure Node Group Template * **Node Processes *** Security Shares HDFS Parameters *

Hadoop Parameters YARN Parameters *

Select Node Group Processes *

HDFS processes:

- namenode
- datanode
- secondarynamenode

YARN processes:

- resourcemanager
- nodemanager

MapReduce processes:

- historyserver

JobFlow processes:

- oozie

Hive processes:

- hiveserver

Spark processes:

- spark history server

Framework de procesamiento Big data

Edit Node Group Template

Configure Node Group Template * Node Processes * Security Shares HDFS Parameters *

Hadoop Parameters Hive Parameters MapReduce Parameters * JobFlow Parameters *

YARN Parameters *

Template Name *
vanilla-default-worker12

Descripción

This Node Group Template will be created for:
Plugin: vanilla
Version: 2.7.1

OpenStack Flavor *
medium

Zona de Disponibilidad
No availability zone specified

Storage location *
Ephemeral Drive

Base Image
No image specified

Floating IP Pool
lowcost-net

Auto-configure

Proxy Gateway

Público

Protegido

The Node Group Template object specifies the processes that will be launched on each instance. Check one or more processes. When processes are selected, you may set node scoped configurations on corresponding tabs.

You must choose a flavor to determine the size (VCPU, memory and storage) of all launched VMs.

Data Processing provides different storage location options. You may choose Ephemeral Drive or a Cinder Volume to be attached to instances.

Edit Node Group Template

Configure Node Group Template * Node Processes * Security Shares HDFS Parameters *

Hadoop Parameters Hive Parameters MapReduce Parameters * JobFlow Parameters *

YARN Parameters *

Select Node Group Processes *

HDFS processes:

- namenode
- datanode
- secondarynamenode

YARN processes:

- resourcemanager
- nodemanager

MapReduce processes:

- historyserver

JobFlow processes:

- oozie

Hive processes:

- hiveserver

Spark processes:

- spark history server

Select node processes for the node group

[Cancelar](#) [Actualizar](#)

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[Cancelar](#) [Actualizar](#)

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25
AÑOS
1993 | 2018



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