redhat

DESIGN YOUR PRIVATE CLOUD WITH RED HAT OPENSTACK PLATFORM

RED HAT FORUM

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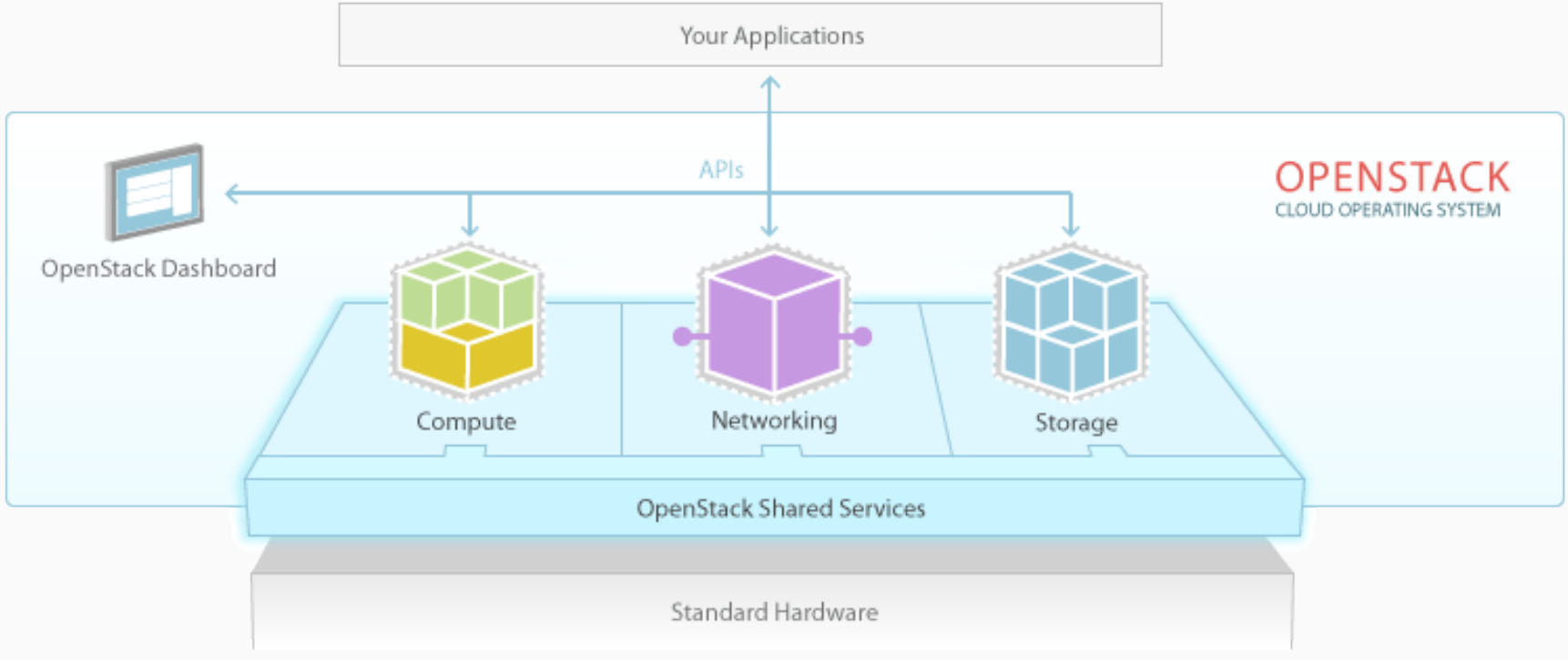
Emerging Technologies team

WHAT IS OPENSTACK?

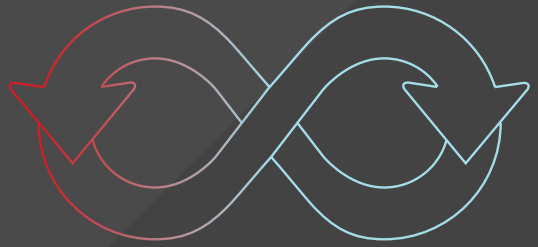


Cloud operating system

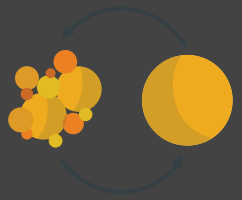
WHAT IS RED HAT OPENSTACK PLATFORM?

INFRASTRUCTURE AS A SERVICE

TRUSTED

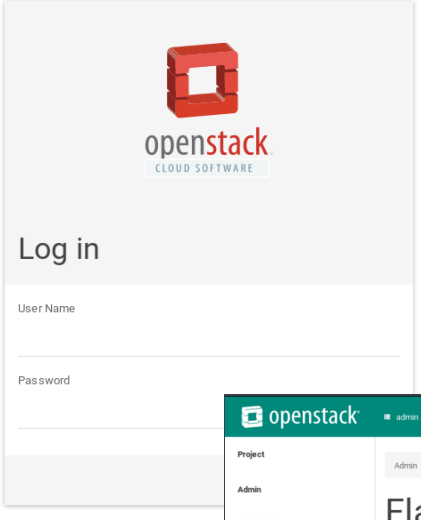


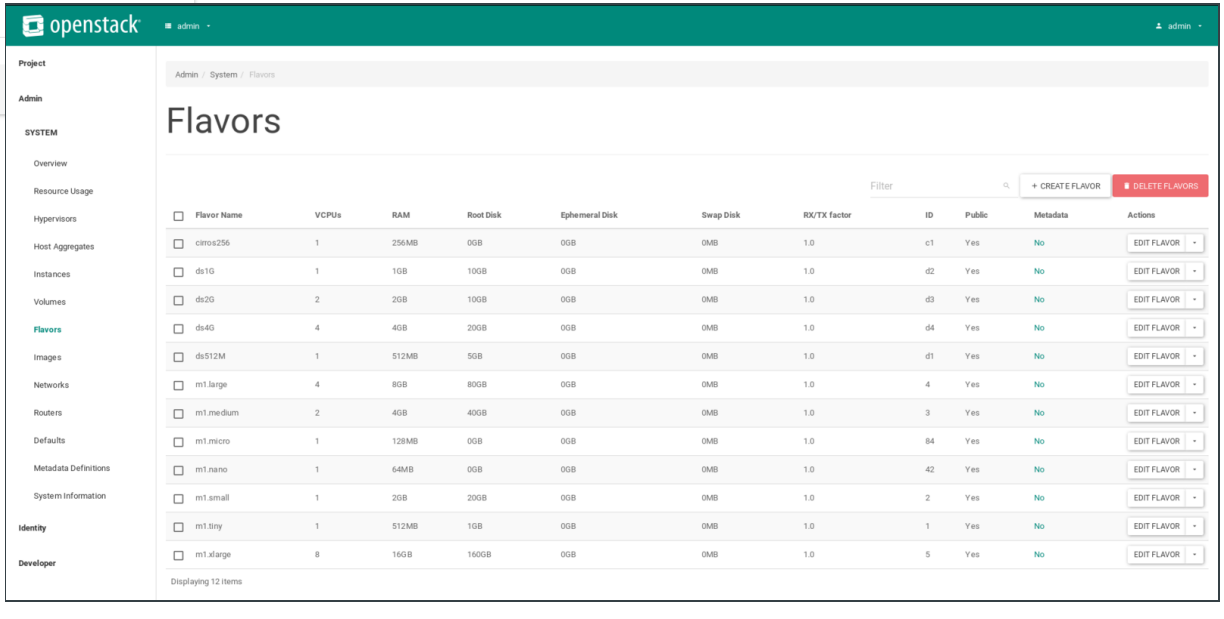
ALWAYS UP TO DATE



STABLE

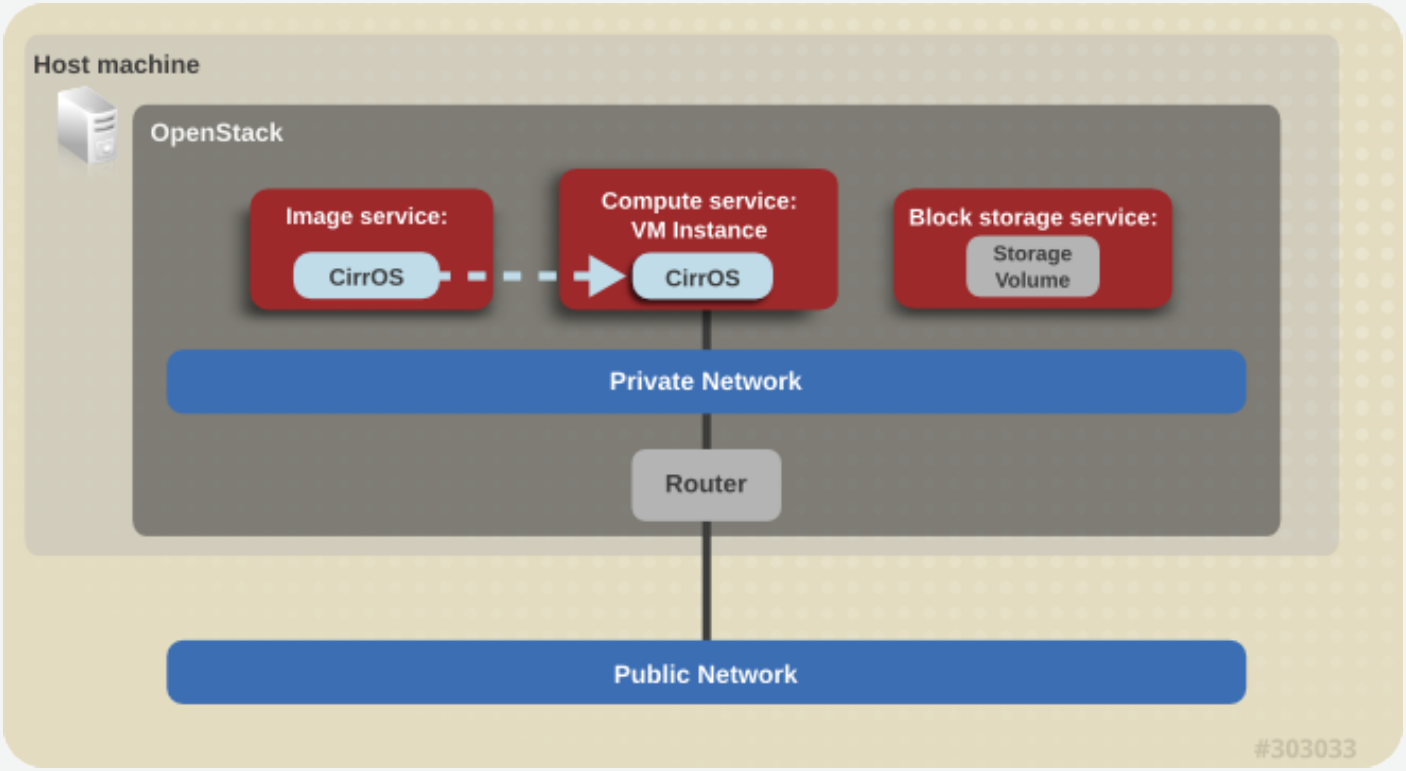
DEVSTACK





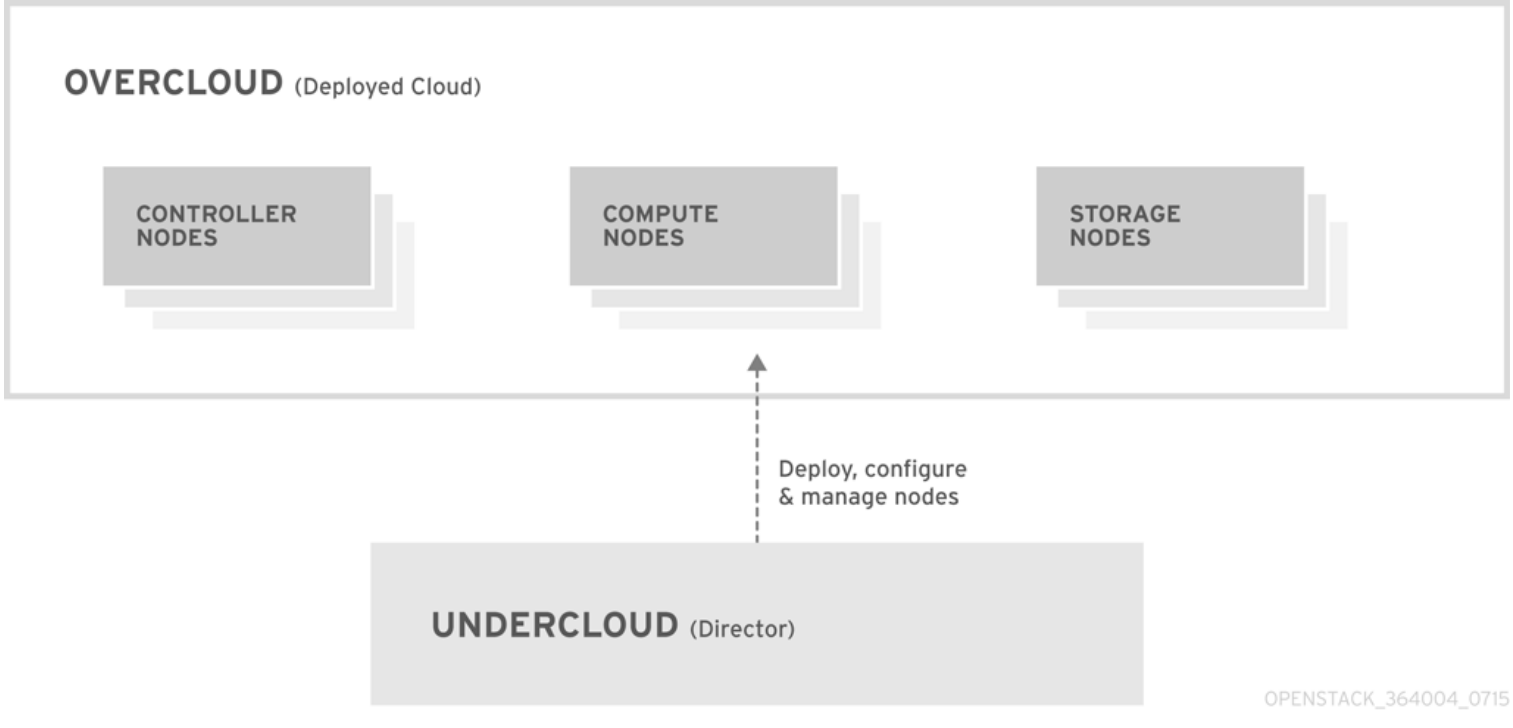
local.conf

PACKSTACK

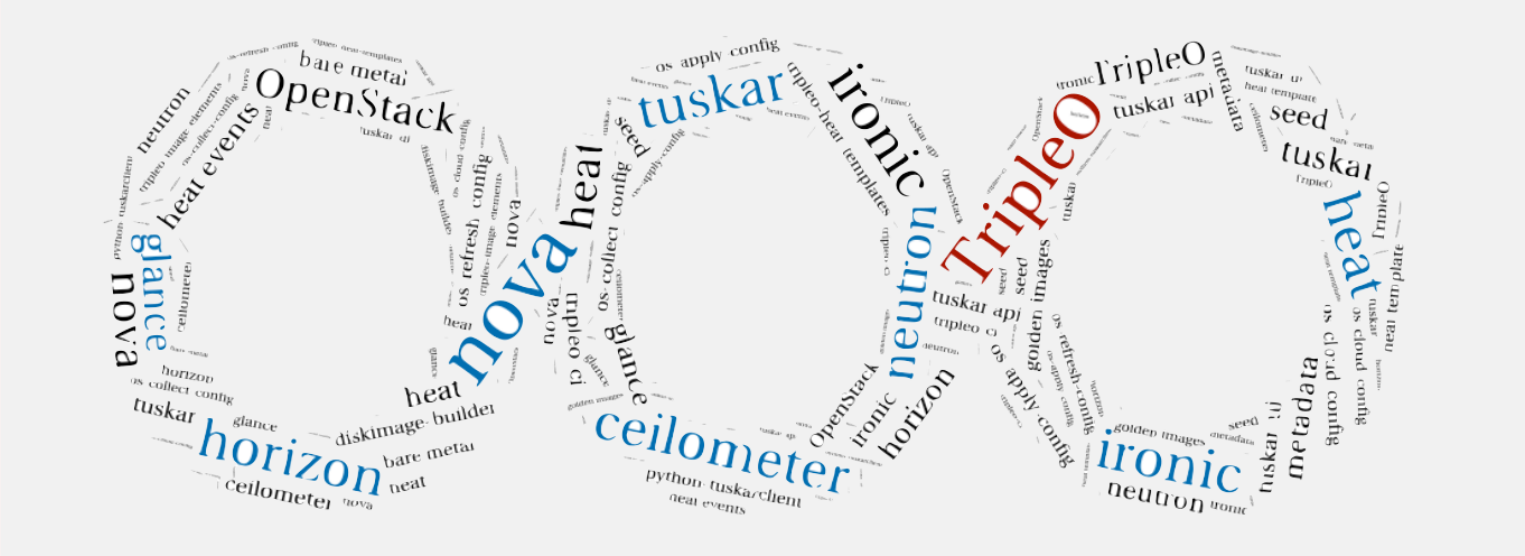


OpenStack single-node deployment | Packstack networking overview

DIRECTOR


OVERCLOUD (Deployed Cloud)
CONTROLLER NODES
COMPUTE NODES
STORAGE NODES
Deploy, configure & manage nodes
UNDERCLOUD (Director)
OPENSTACK_364004_0715

TRIPLEO



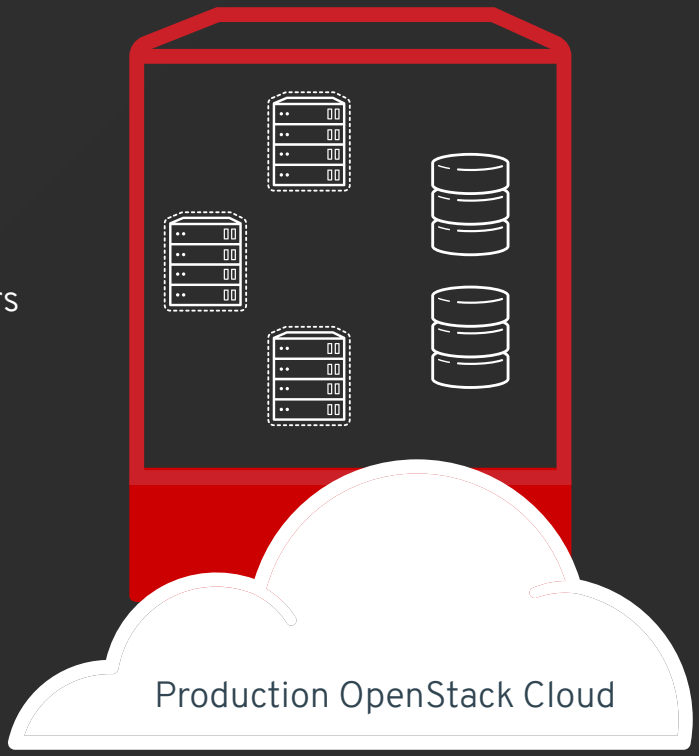
* Friendly name for "OpenStack On OpenStack"
* Allows you to deploy production cloud on bare-metal hardware
* *Undercloud*: Subset of existing OpenStack components
* *Overcloud*: Production OpenStack cloud

TRIPLEO OVERVIEW

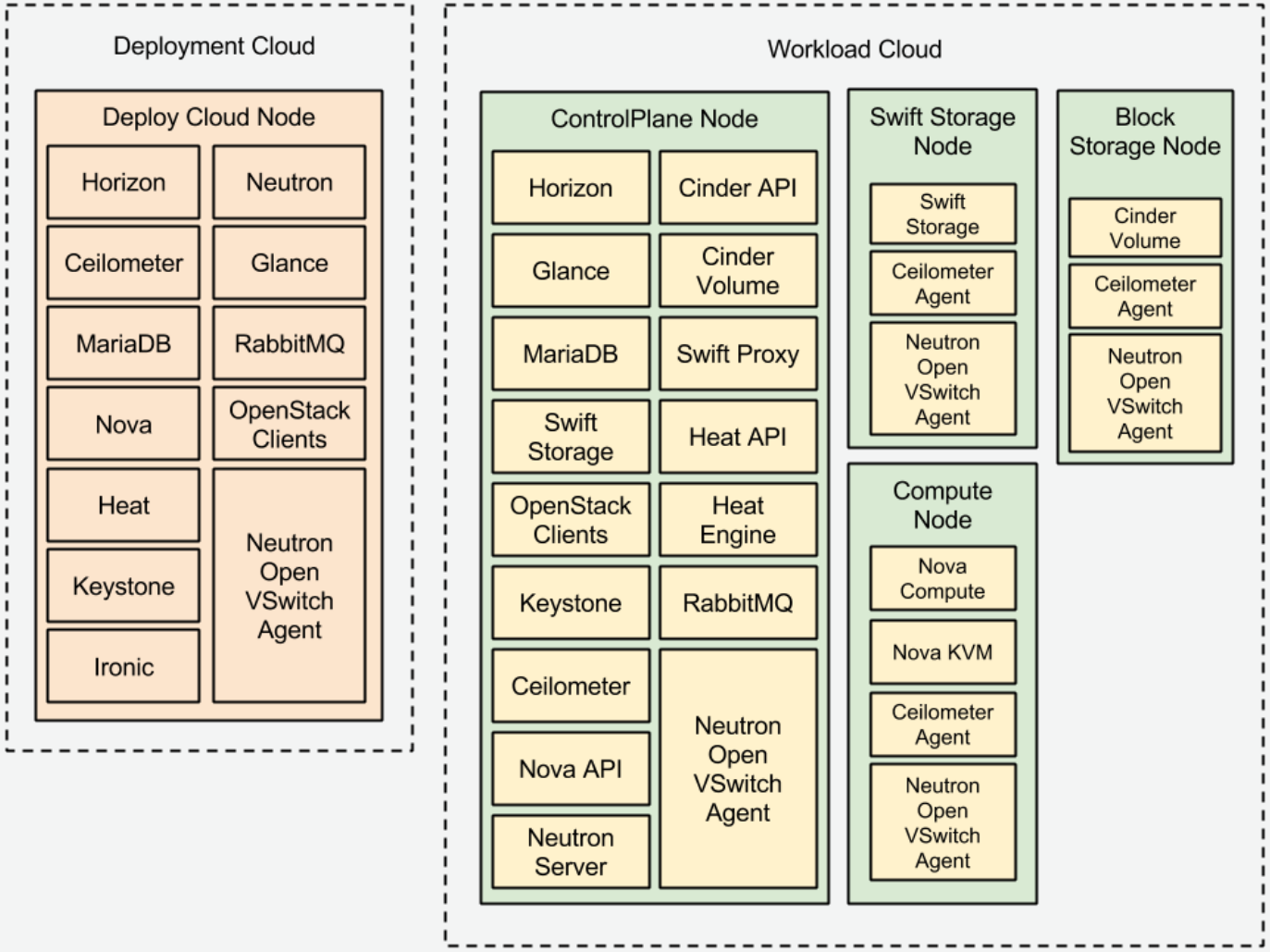
TripleO based

management application

Deploys, updates, monitors



TRIPLEO PHYSICAL VIEW



TRIPLEO

Deployment workflow overview

Prepare undercloud node

Introspect nodes

Plan deployment

TRIPLEO

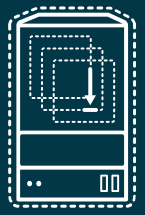
Deployment workflow overview

Install undercloud node

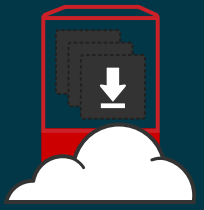
Register nodes(Ironic)

Create images(build/download)

1. Introspect nodes
2. Profile matching (ironic-inspector)



1. Plan deployment
2. Deploy overcloud



OVERCLOUD

Requirments

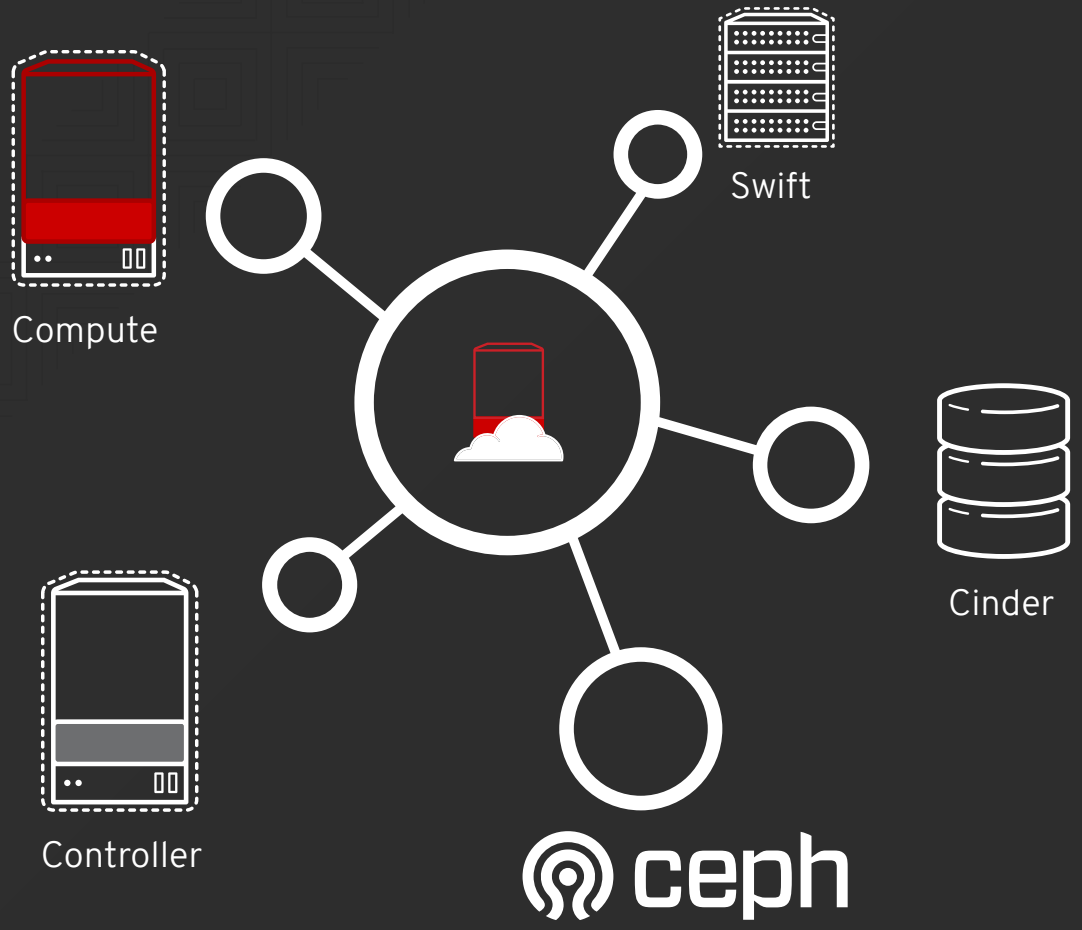
COMPUTE

	value
Processor	64-bit x86 (Intel 64 or AMD64)
Memory	minimum 6 GB of RAM
Disk Space	40 GB available
NICs	min. 1 Gbps, at-least 2 in production
IPMI	IPMI functionality in motherboard

CONTROLLER

	value
Processor	64-bit x86 (Intel 64 or AMD64)
Memory	min. 32 GB RAM, 64 GB recommended

PLANNING YOUR OVERCLOUD

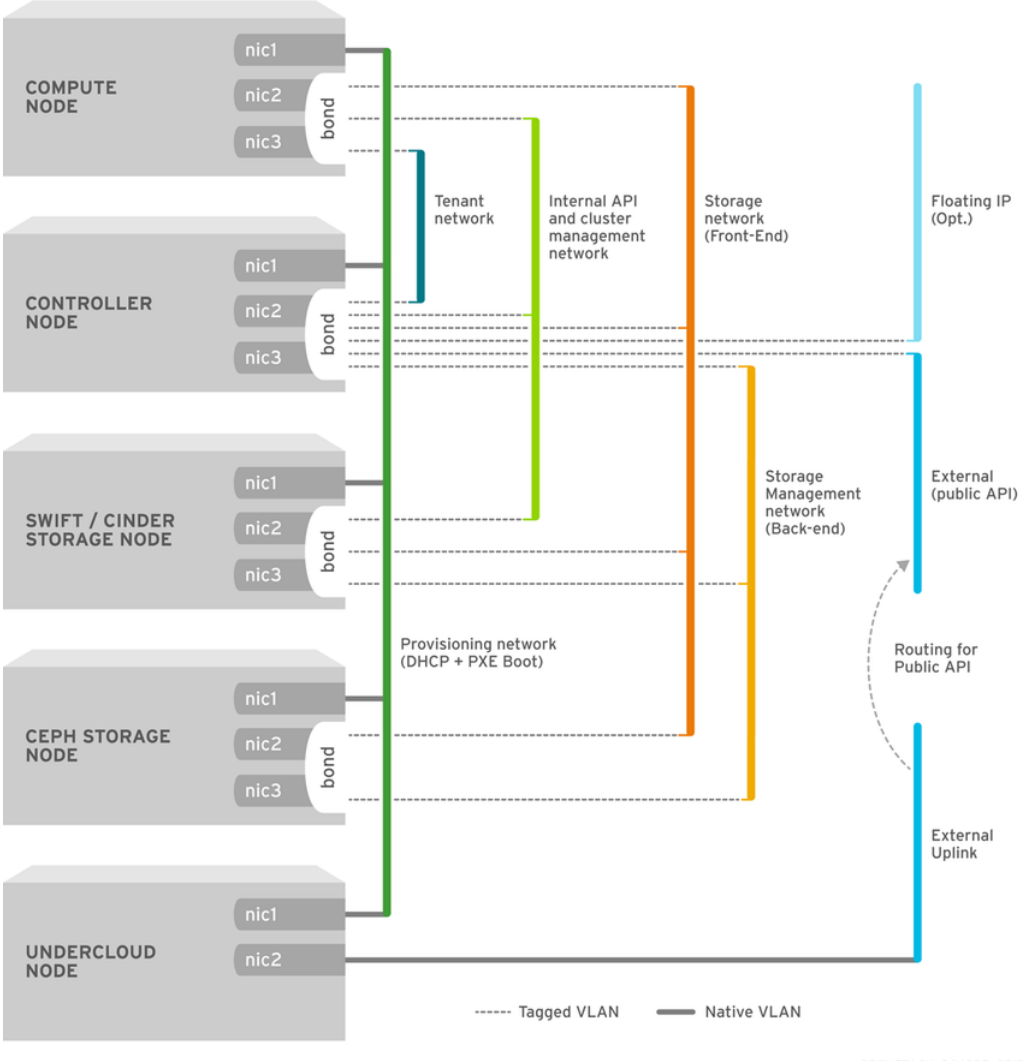


PLANNING YOUR OVERCLOUD

Overcloud	Controller	Compute	Ceph	Swift
Small	1	1	-	-
Medium	1	3	-	-
Medium with object storage	1	3	-	1
Medium(HA)	3	3	-	-
Medium(HA) with Ceph	3	3	3	-

Planning your Overcloud

PLANNING NETWORKS

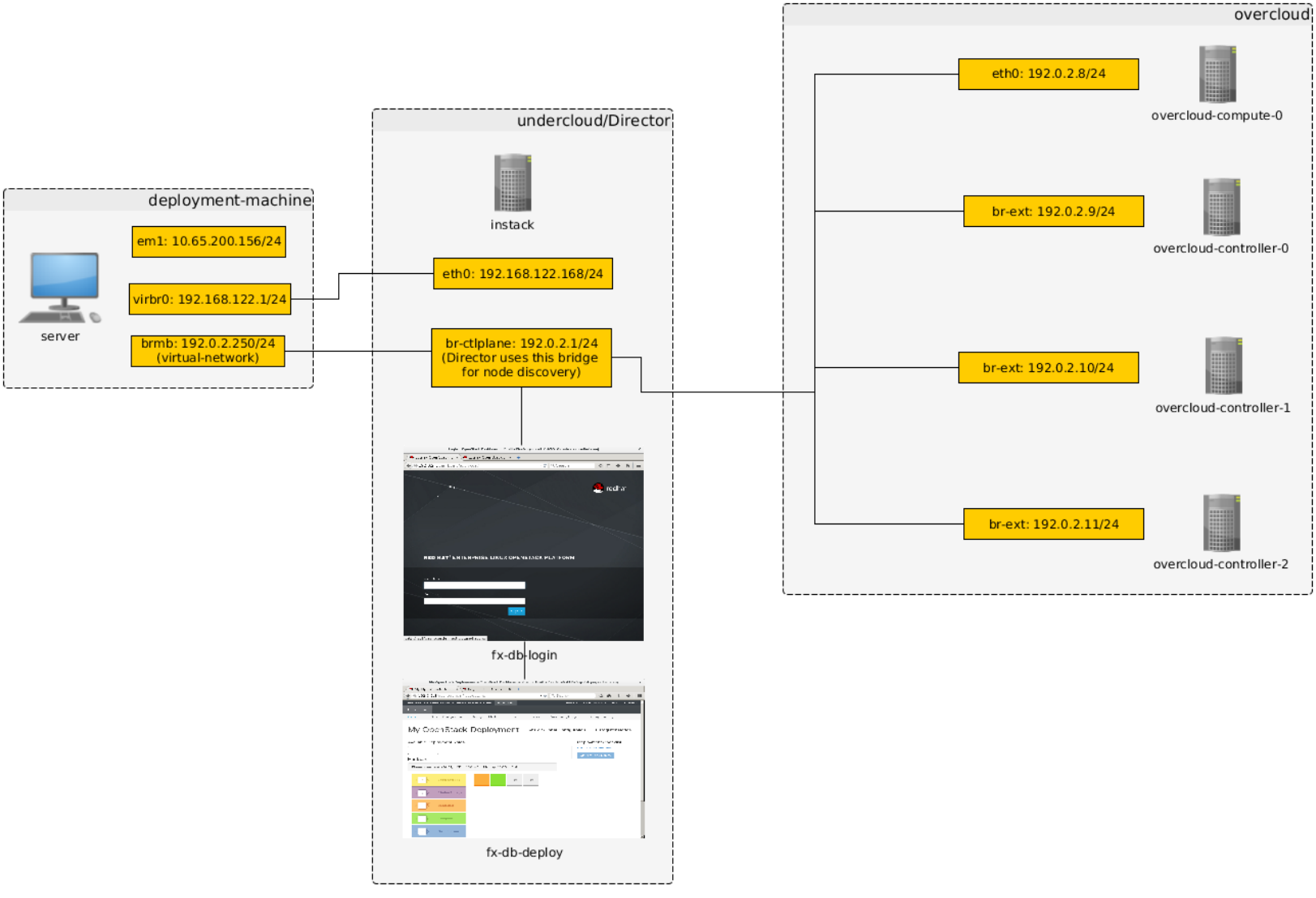


HEAT TEMPLATE

Understanding heat template

```
heat_template_version: 2013-05-23

description: > A very basic Heat template.

parameters:
  key_name:
    type: string
    default: lars
    description: Name of an existing key pair to use for the instance
  flavor:
    type: string
    description: Instance type for the instance to be created
    default: m1.small
  image:
    type: string
    default: cirros
    description: ID or name of the image to use for the instance

resources:
  my_instance:
    type: OS::Nova::Server
    properties:
      name: My Cirros Instance
      image: { get_param: image }
      flavor: { get_param: flavor }
      key_name: { get_param: key_name }

output:
  instance_name:
    description: Get the instance's name
    value: { get_attr: [ my_instance, name ] }
```

TOPOLOGY


deployment-machine
em1: 10.65.200.156/24
virbr0: 192.168.122.1/24
brmb: 192.0.2.250/24
(virtual-network)
server
undercloud/Director
instack
eth0: 192.168.122.168/24
br-ctlplane: 192.0.2.1/24
(Director uses this bridge
for node discovery)
fx-db-login
fx-db-deploy
overcloud
eth0: 192.0.2.8/24
overcloud-compute-0
br-ext: 192.0.2.9/24
overcloud-controller-0
br-ext: 192.0.2.10/24
overcloud-controller-1
br-ext: 192.0.2.11/24
overcloud-controller-2

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OPENSTACK
PLATFORM
https://access.redhat.com/documentation/en/red-hat-openstack-platform

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