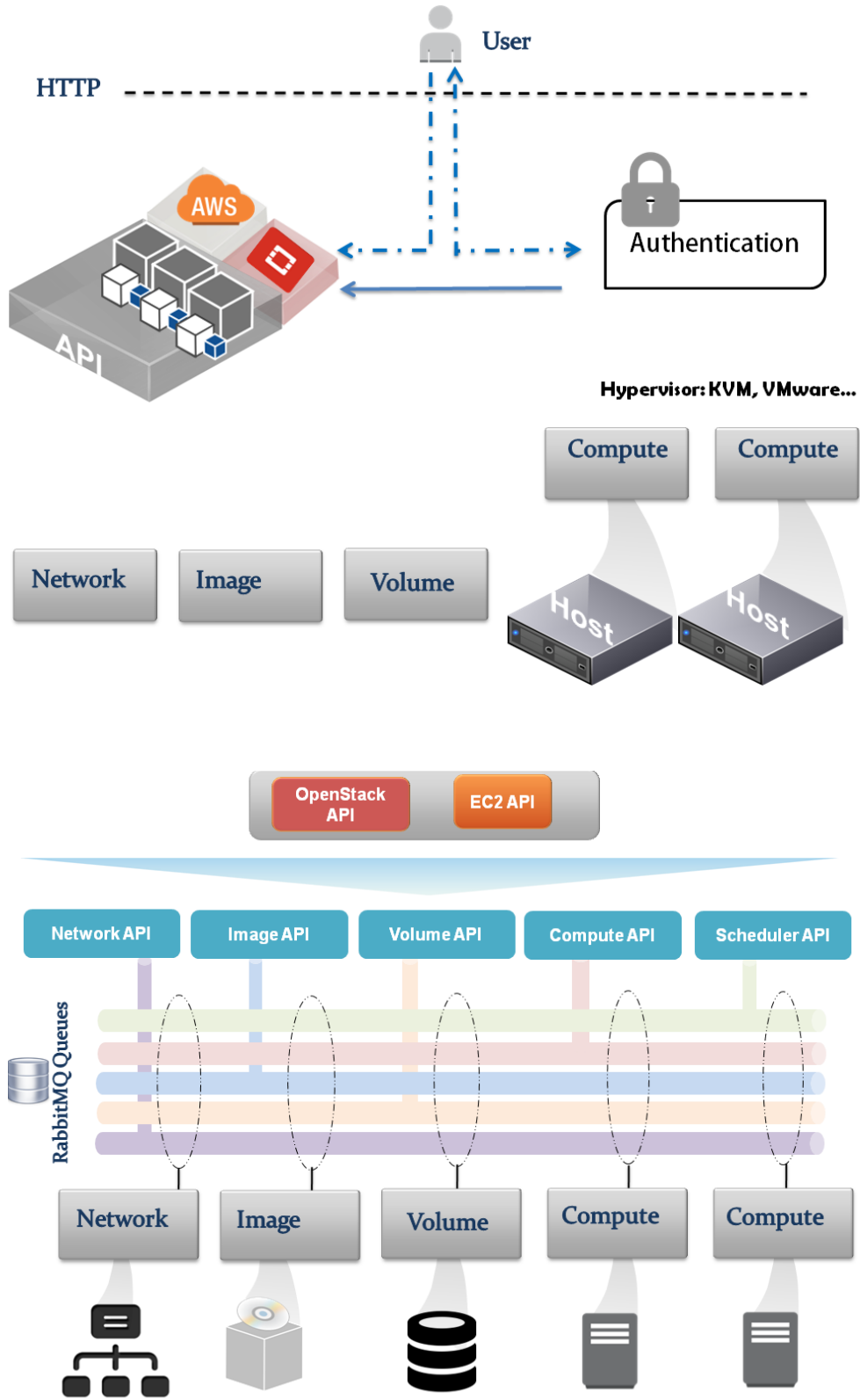
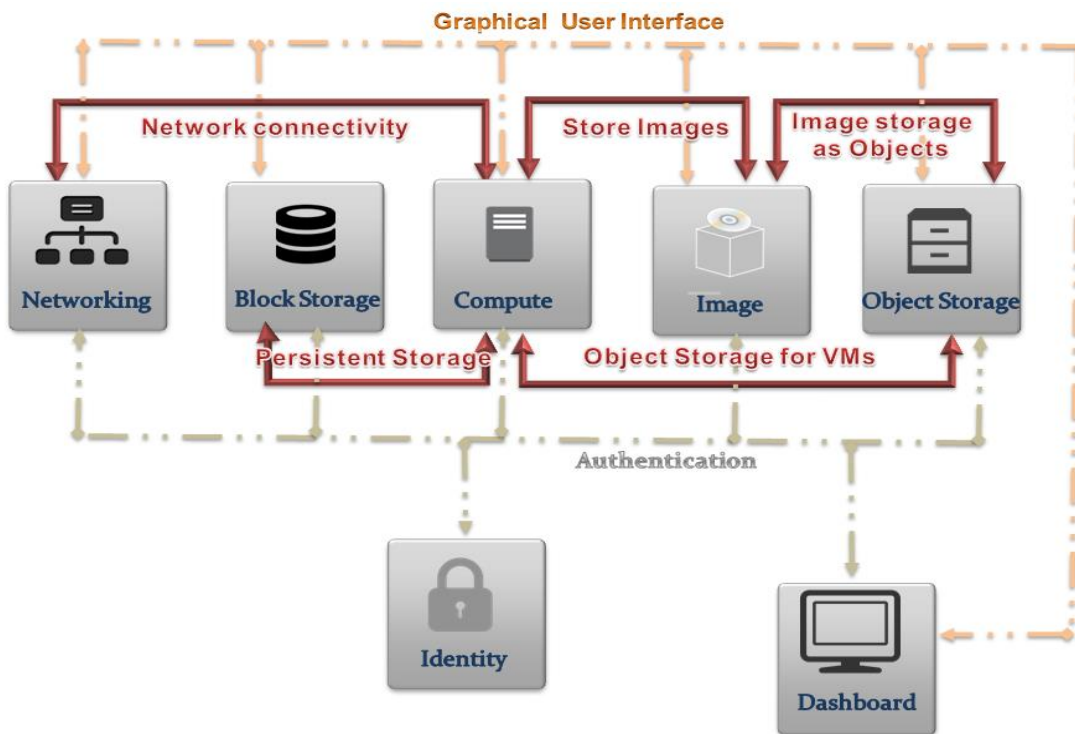
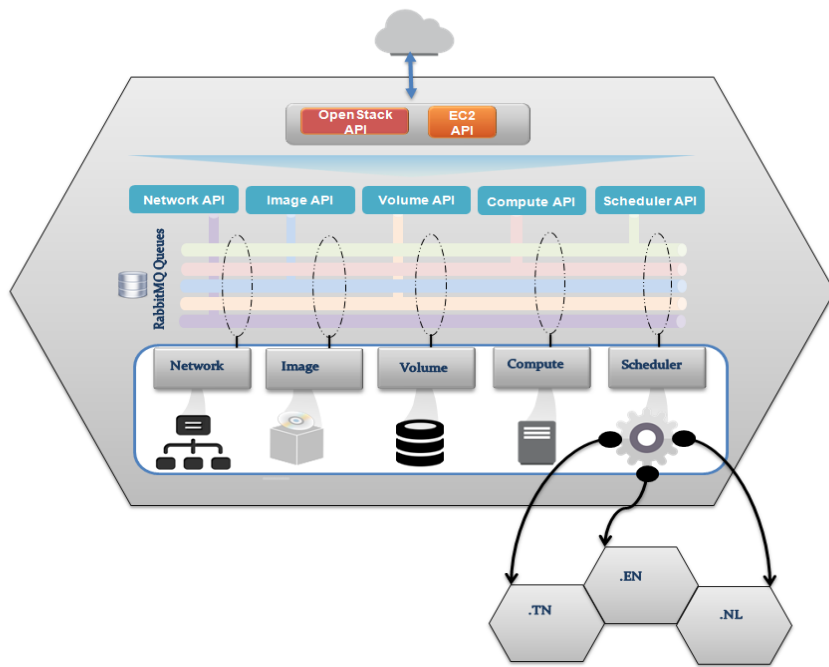
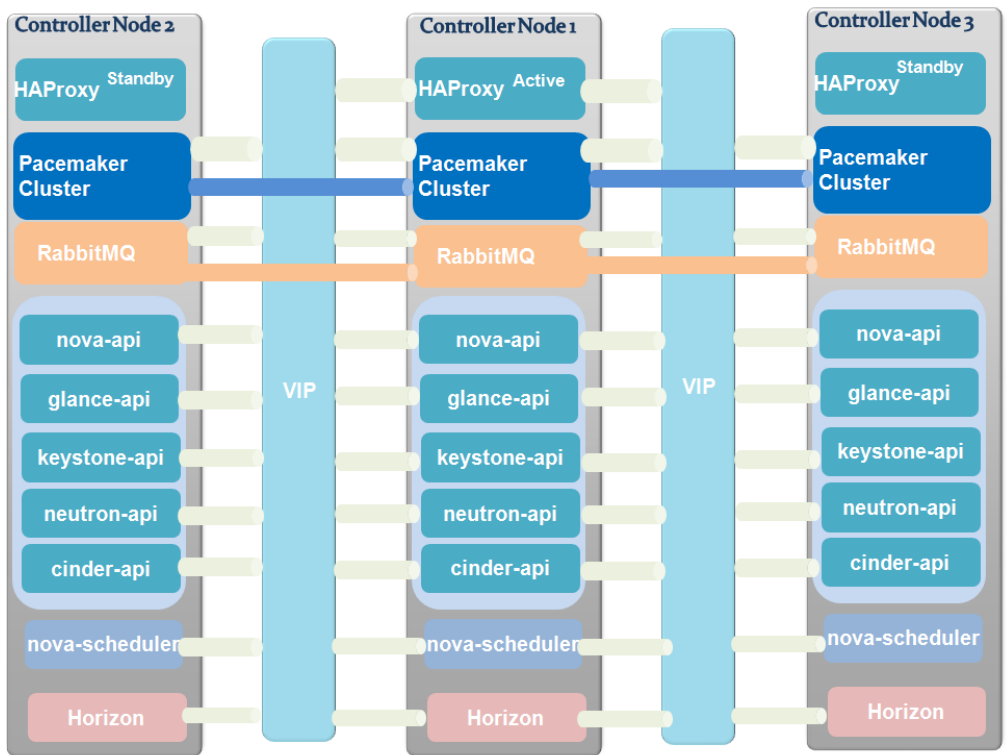
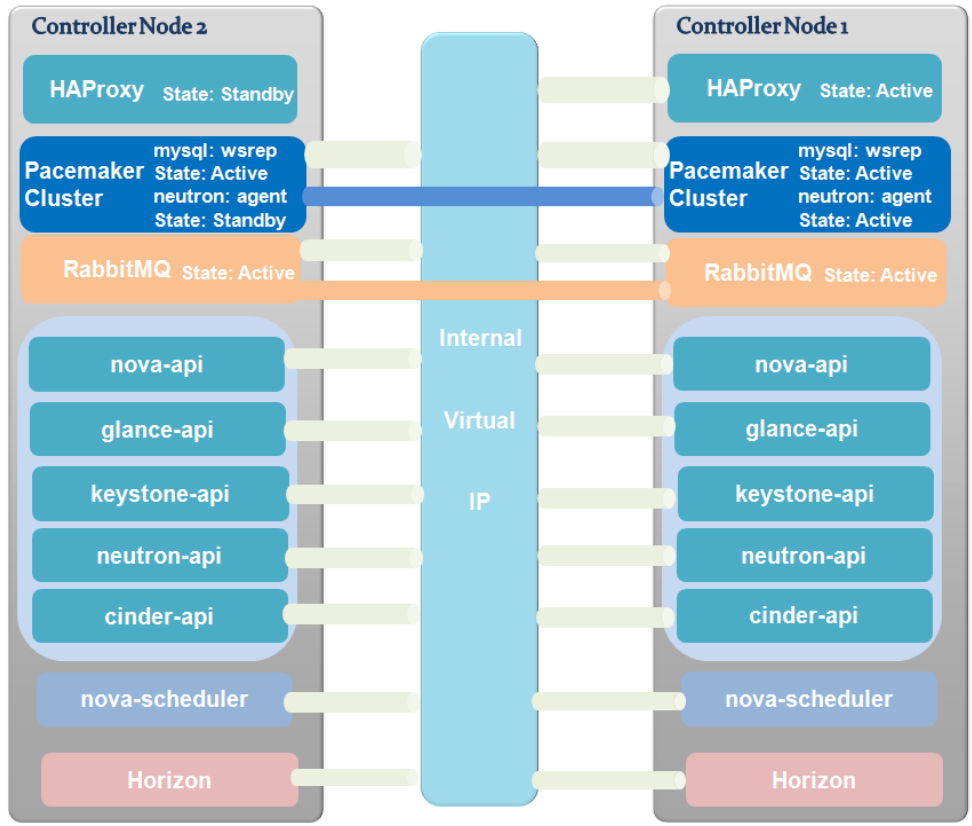
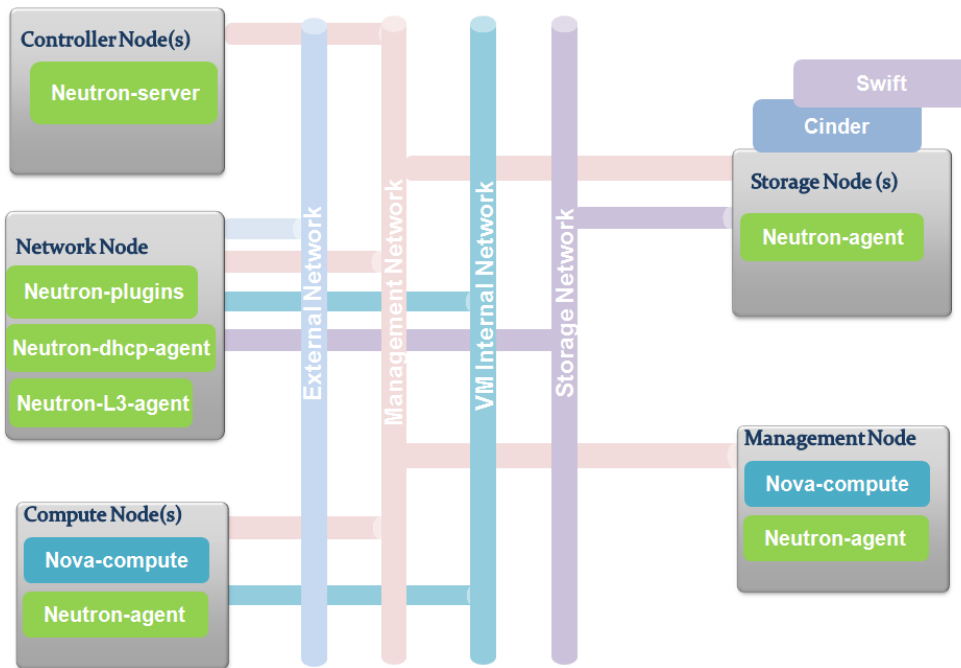
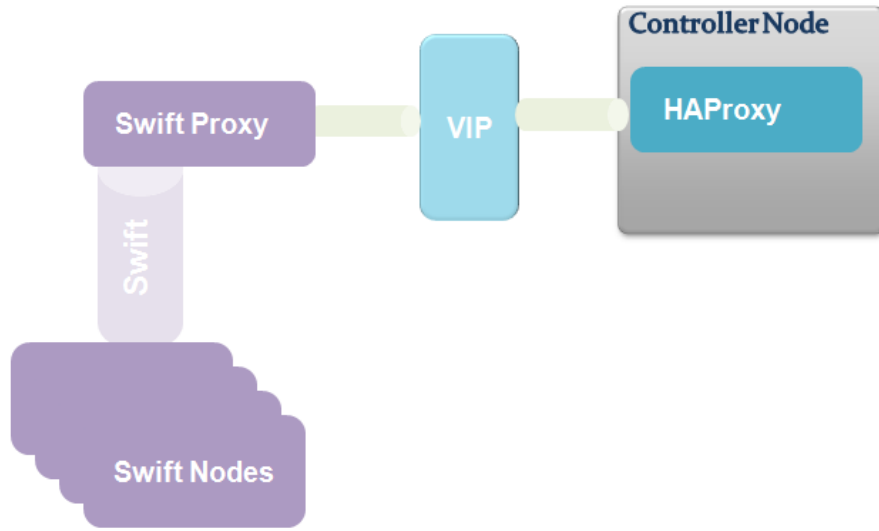


Chapter 1: Designing OpenStack Cloud Architecture

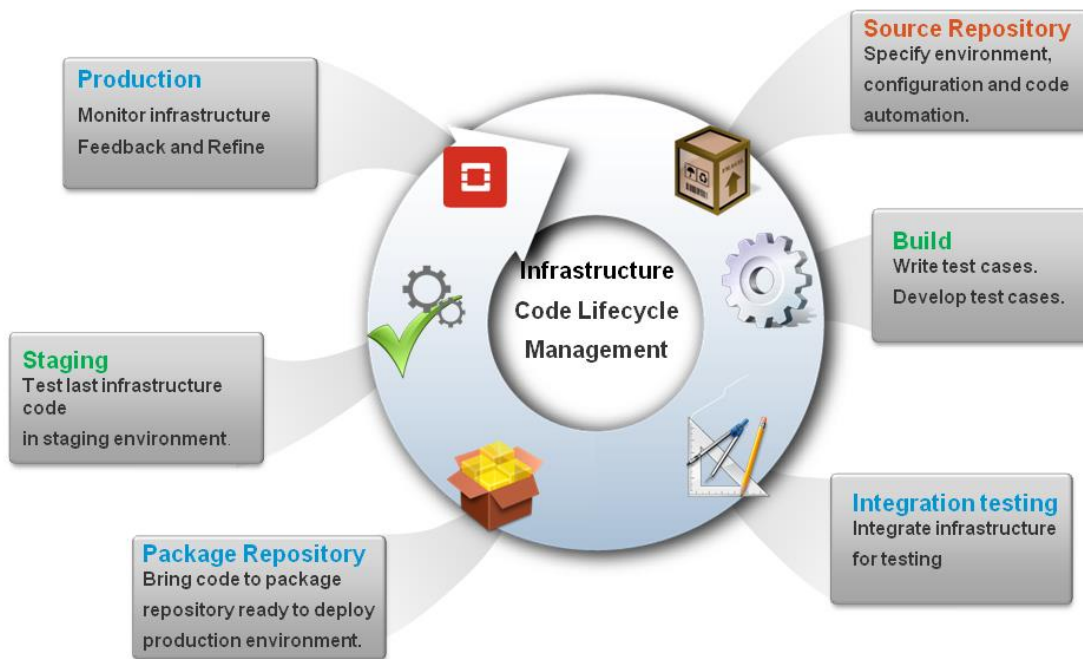
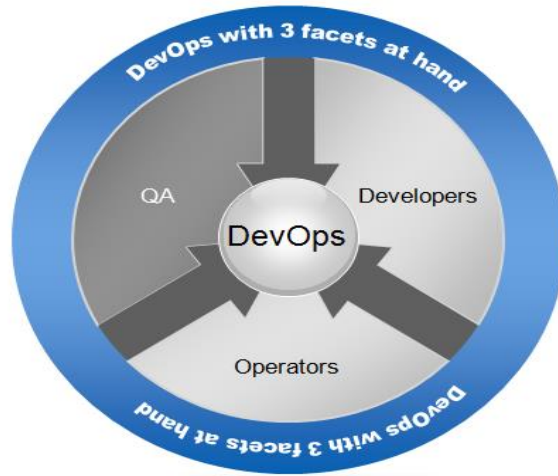


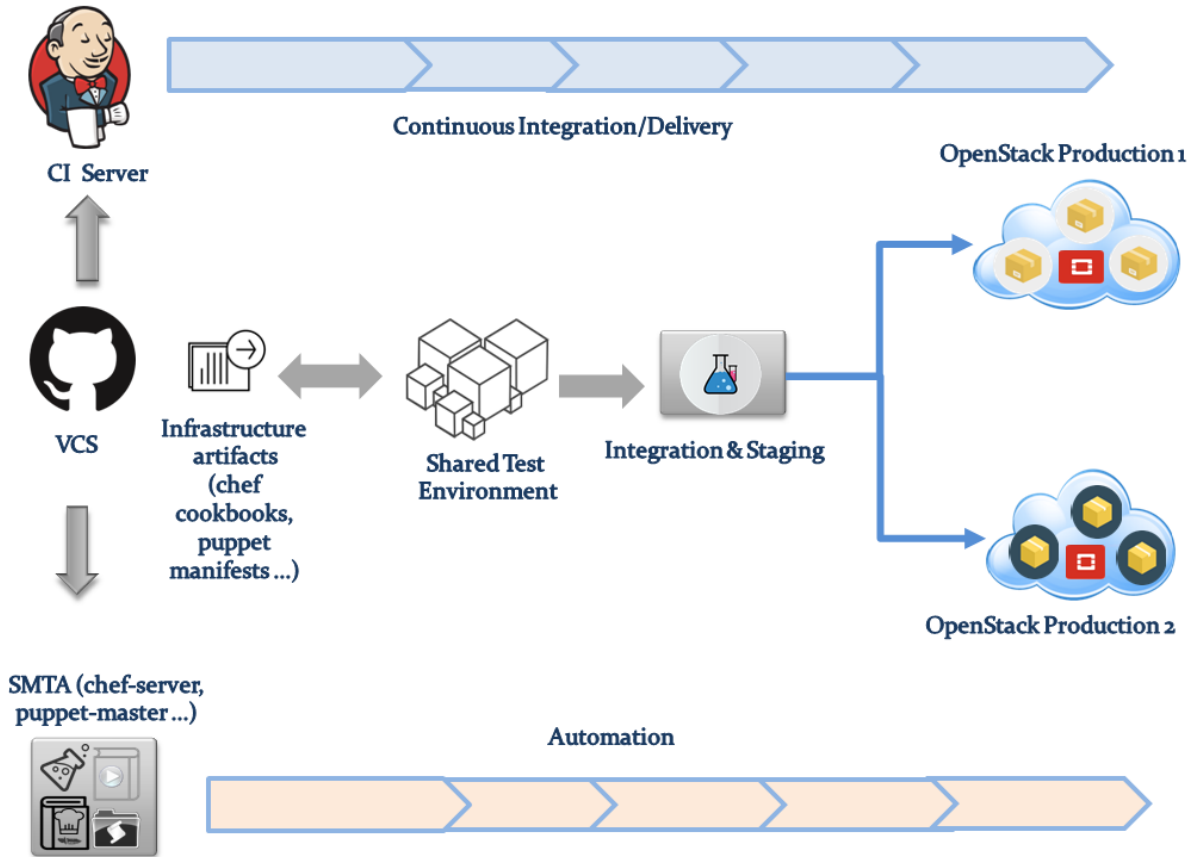






Chapter 2: Deploying OpenStack – DevOps and OpenStack Dual Deal





Available Software
Check the items that you wish to install.

Work with: Juno - <http://download.eclipse.org/releases/luna> Add...

Find more software by working with the "Available Software Sites" preferences.

type filter text

Name	Version
<input type="checkbox"/> Code Recommenders for Java Developers	2.1.9.v20140917-1240
<input type="checkbox"/> Code Recommenders Mylyn Integration	2.1.9.v20140917-1240
<input type="checkbox"/> Code Recommenders Snipmatch	2.1.9.v20140917-1240
<input type="checkbox"/> Dynamic Languages Toolkit - iTcl Development Tools	5.0.0.201306060709
<input checked="" type="checkbox"/> Dynamic Languages Toolkit - Ruby Development Tools	5.0.0.201306060709
<input type="checkbox"/> Dynamic Languages Toolkit - TCL Development Tools	5.0.0.201306060709
<input type="checkbox"/> Dynamic Languages Toolkit - XOTcl Development Tools	5.0.0.201306060709
<input type="checkbox"/> Eclipse XWT	1.0.0.v20140612-1647

Select All Deselect All 1 item selected

Details
Tools for Ruby Developers More...

Show only the latest versions of available software Hide items that are already installed
 Group items by category What is [already installed?](#)
 Show only software applicable to target environment
 Contact all update sites during install to find required software

? < Back Next > Finish Cancel

Available Software

Check the items that you wish to install.



Work with:

Add...

Find more software by working with the "[Available Software Sites](#)" preferences.

type filter text

Name	Version
▶ <input type="checkbox"/> Eclipse Git Team Provider	
<input checked="" type="checkbox"/> Eclipse Git Team Provider	3.5.2.201411120430-r
<input type="checkbox"/> Eclipse Git Team Provider - Source Code	3.5.2.201411120430-r
<input type="checkbox"/> Task focused interface for Eclipse Git Team Provider	3.5.2.201411120430-r
▶ <input type="checkbox"/> JGit	

Chef Server

Messages

You don't have access to that, please login.

Login

Username

Password

login

Copyright © 2009-2014 Opscode

Where do I get a Login?

Any existing Admin level user can create new users.

To create the first user, please login with the default admin credential, which by default is (both may be different if you've set it in the application configuration):

username: admin

password: p@ssw0rd1

Please change the default password immediately after logging in!

Environments

List

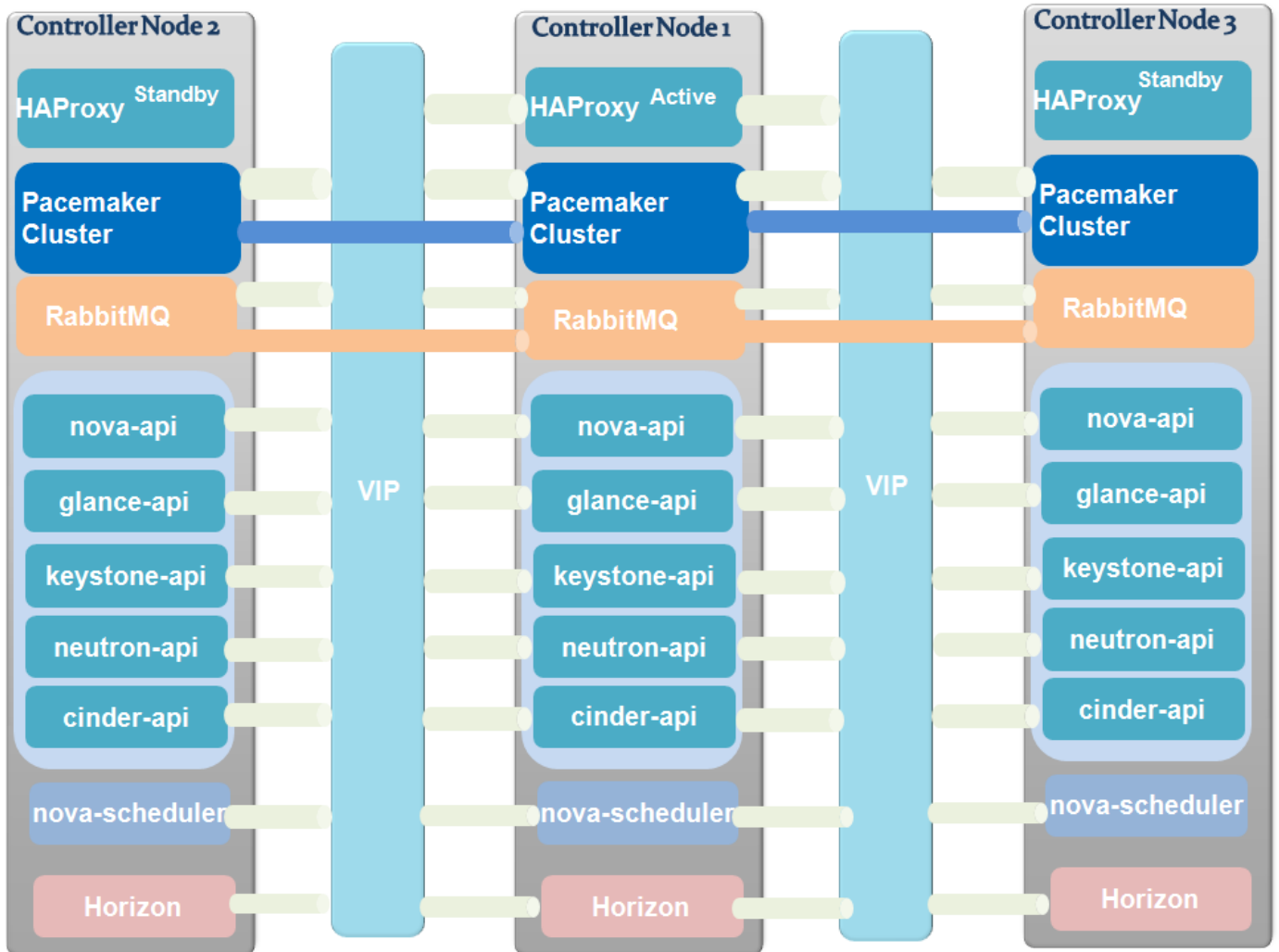
Create

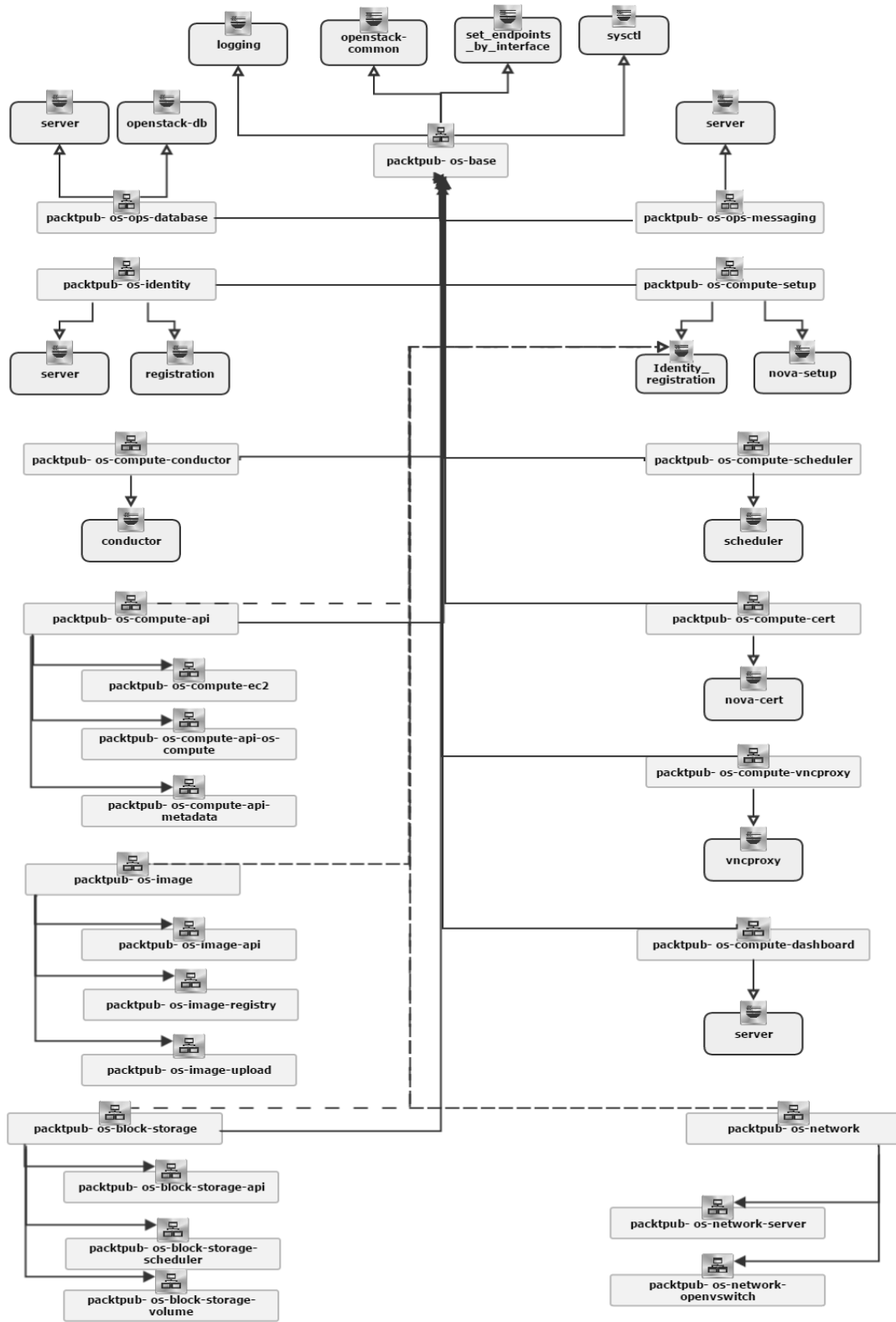
Name

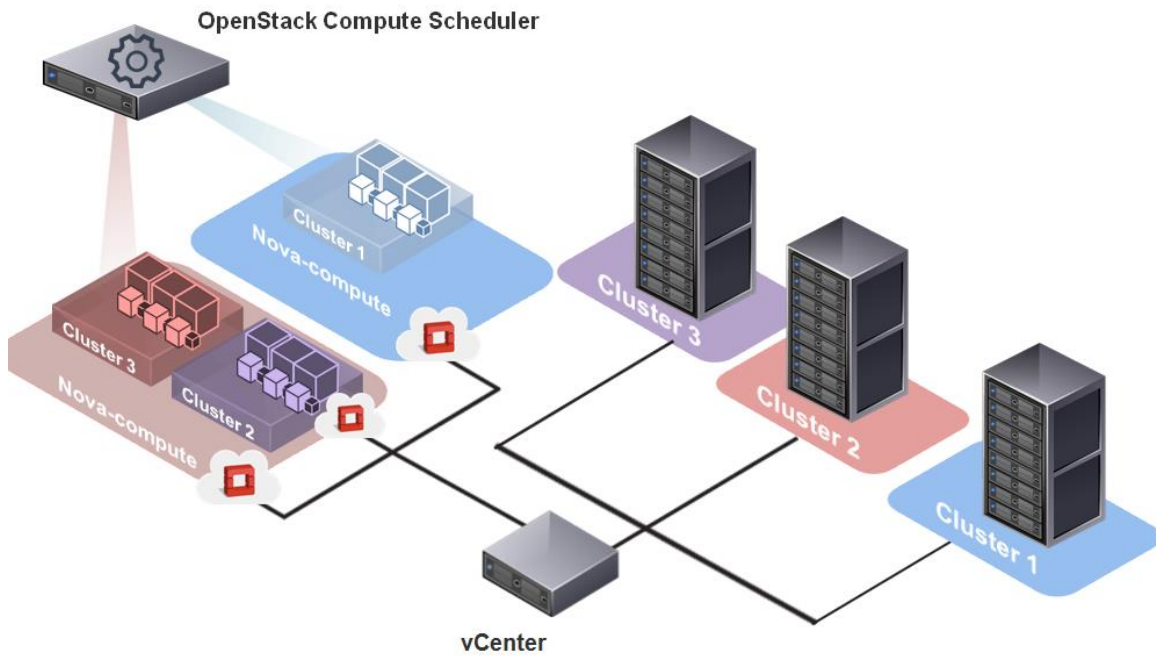
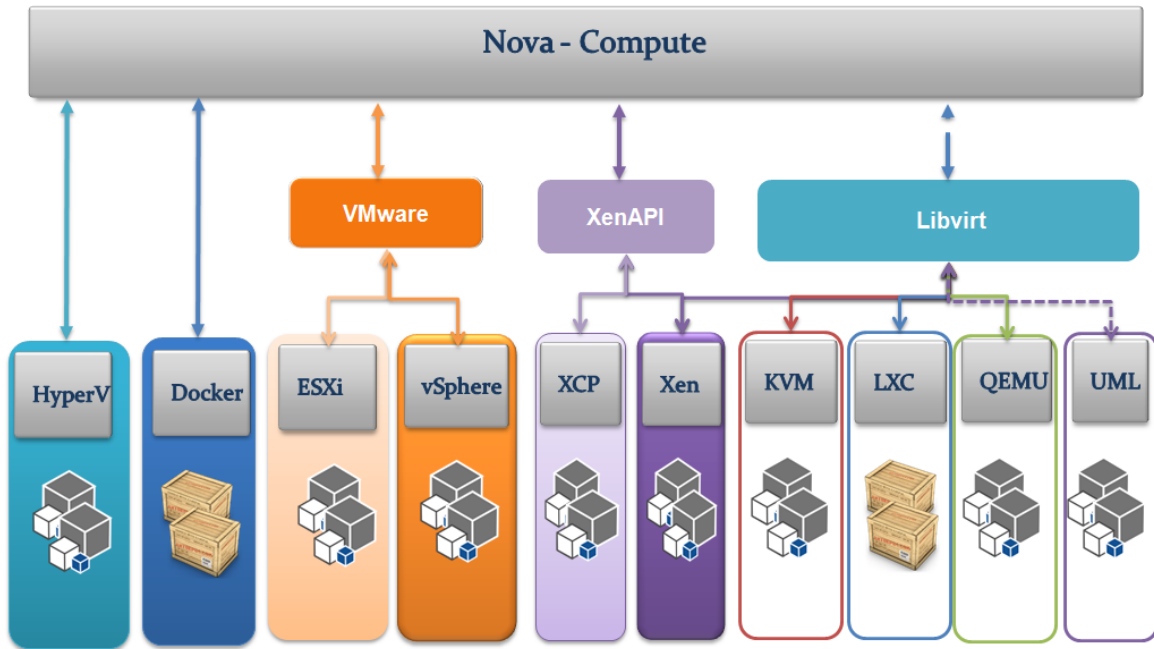
[_default](#)

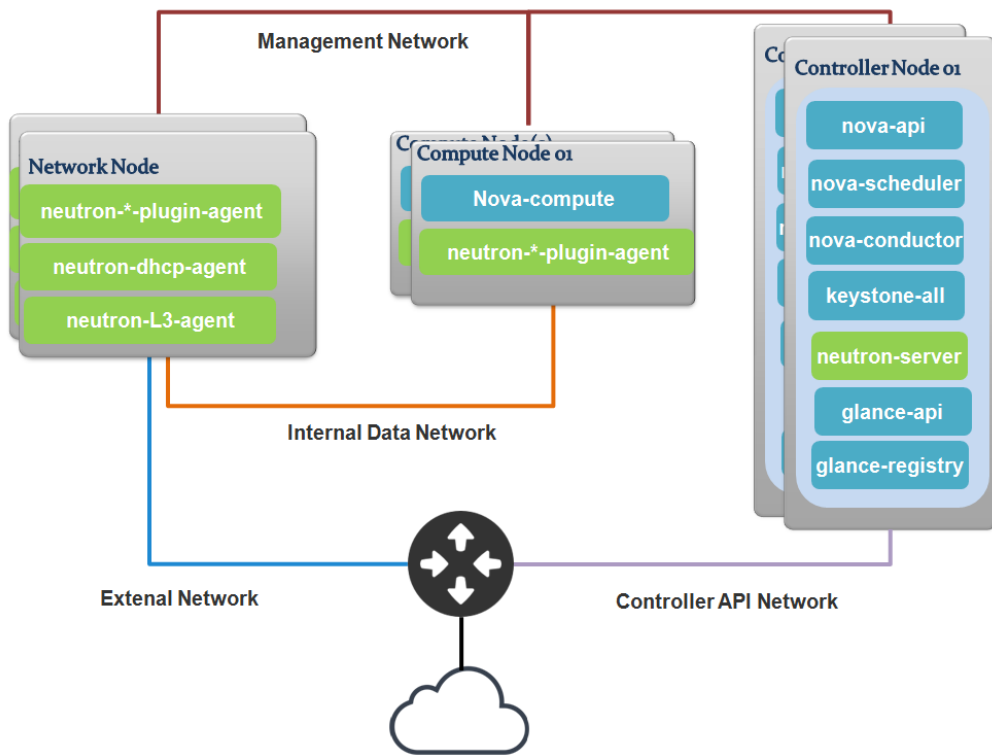
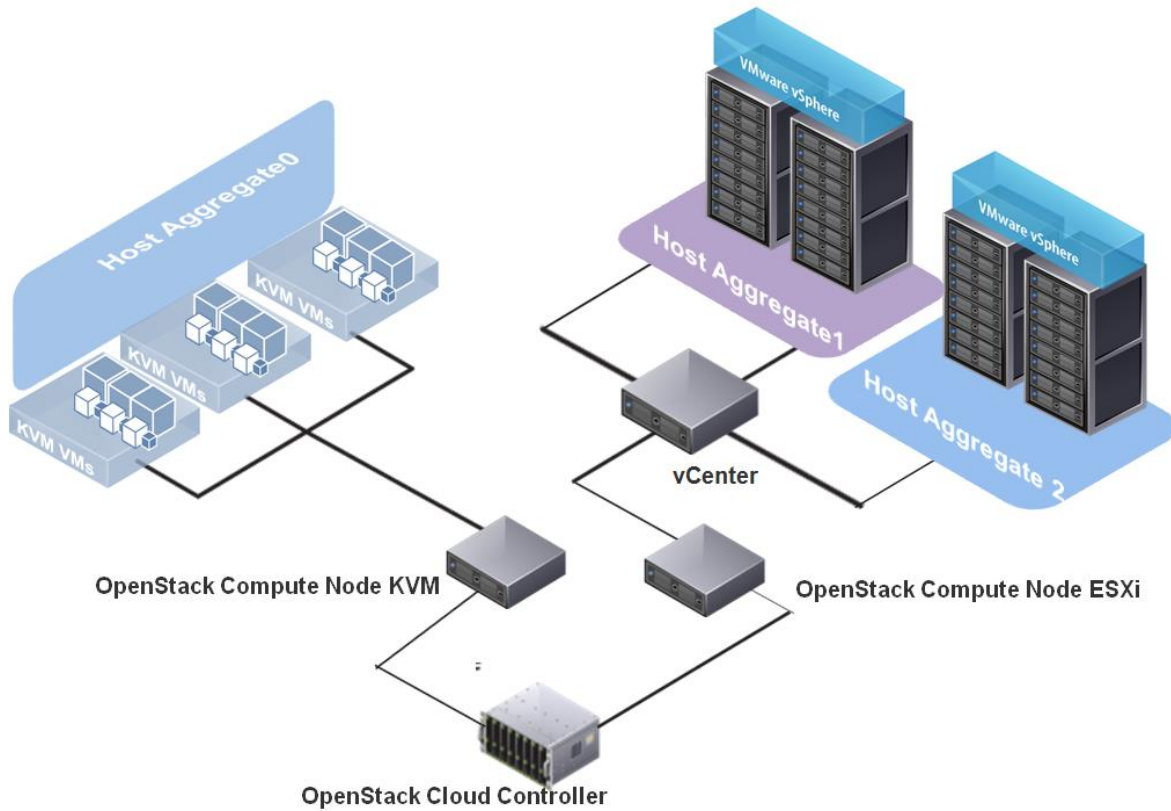
[Select](#) | [Edit](#) | [Delete](#)

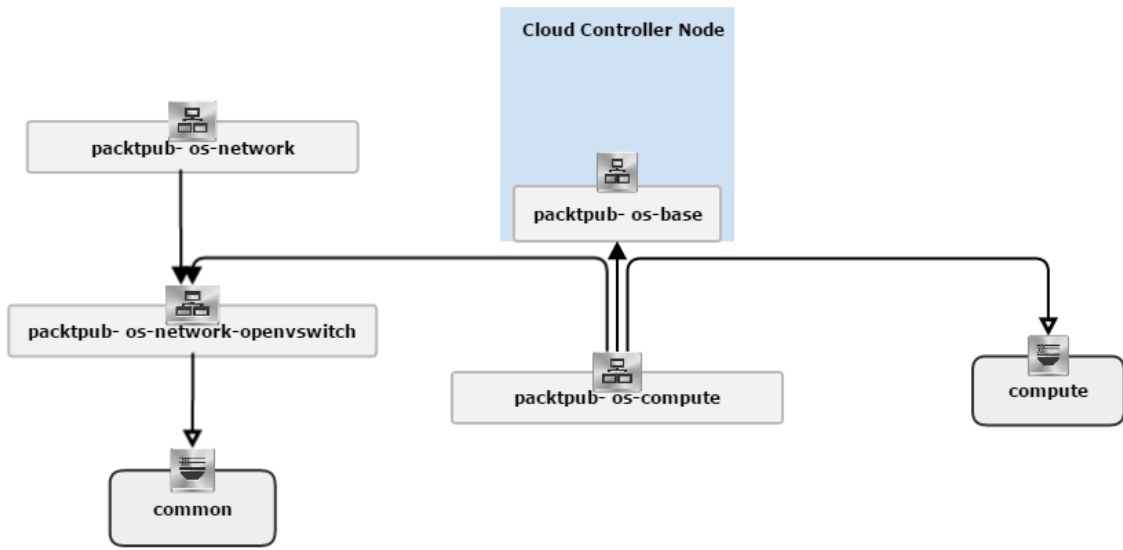
Chapter 3: Learning OpenStack Clustering – Cloud Controllers and Compute Nodes



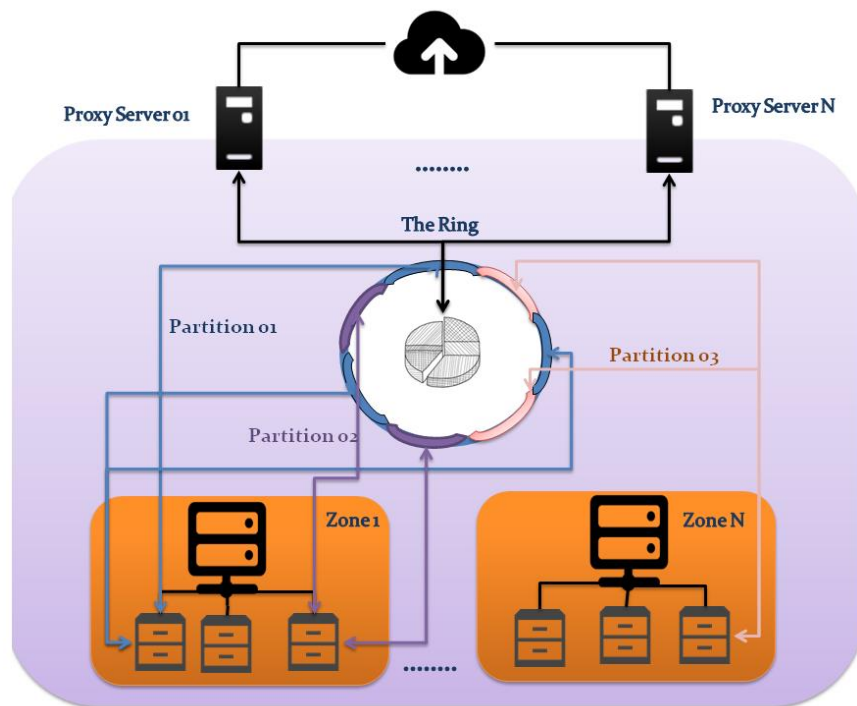
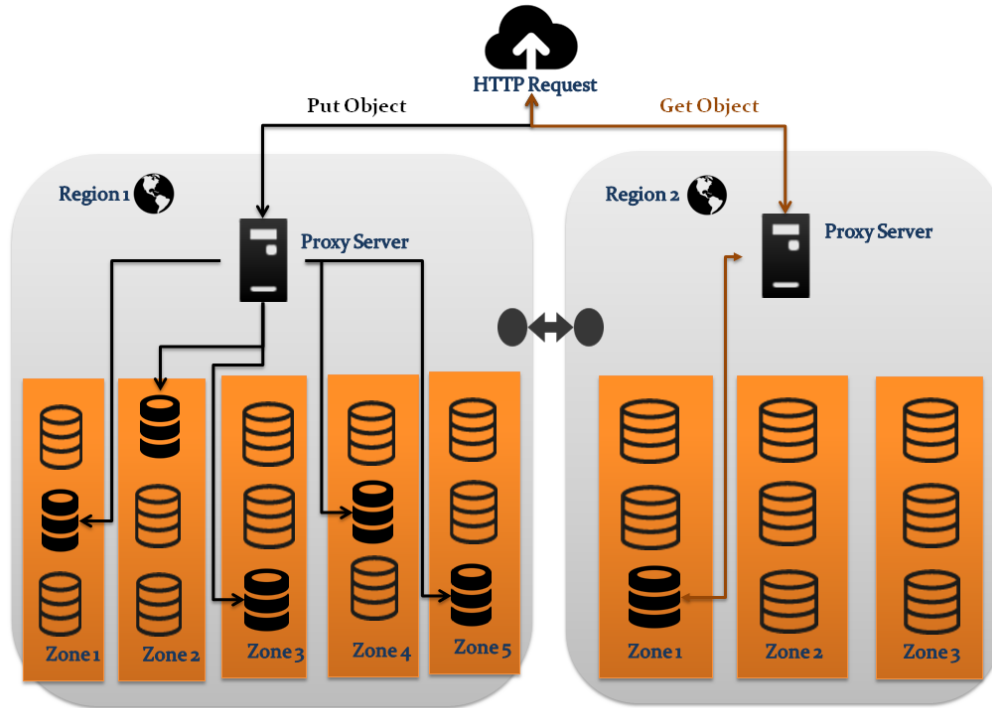


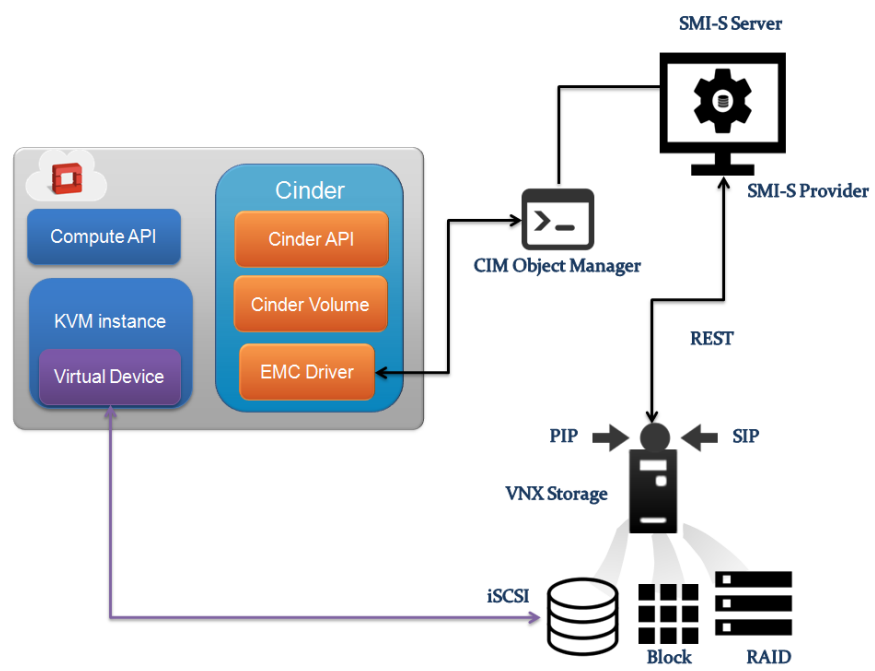
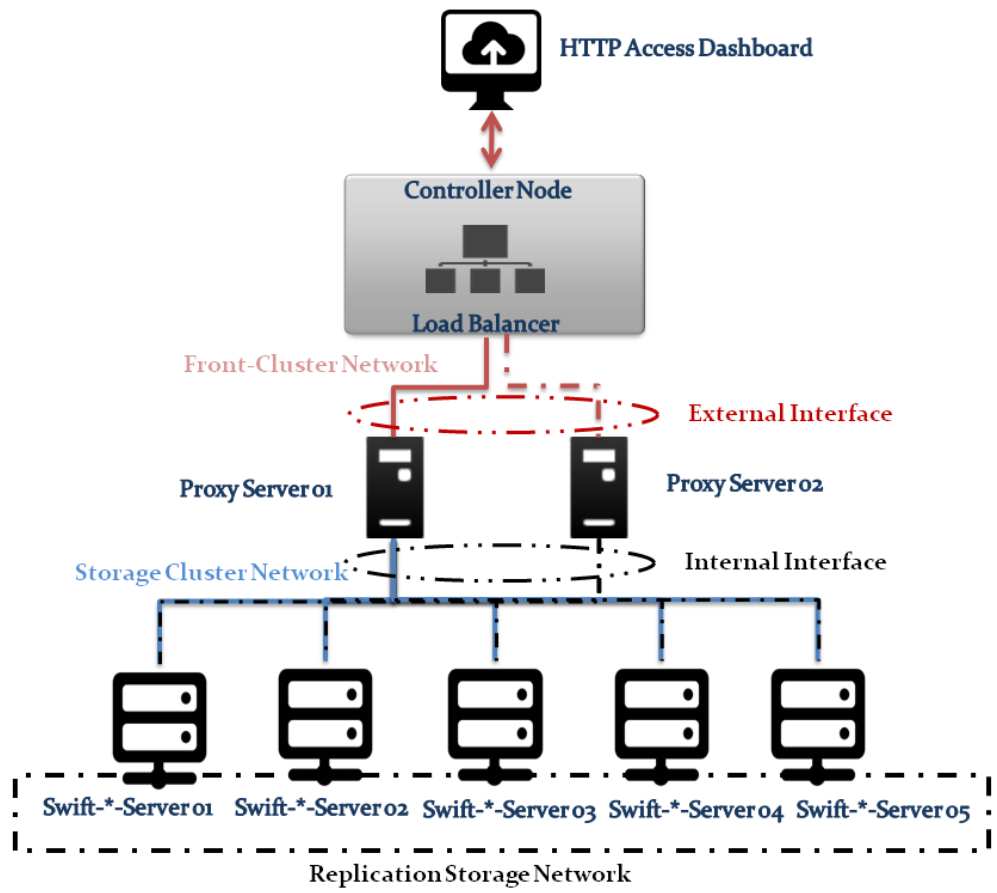






Chapter 4: Learning OpenStack Storage – Deploying the Hybrid Storage Model





ID	Status	Display Name	Size	Volume Type	Bootable	Attached to
e0d836be-3ac1-4893-b2a4-34469eac9973	available	packtpub01	5	None	false	

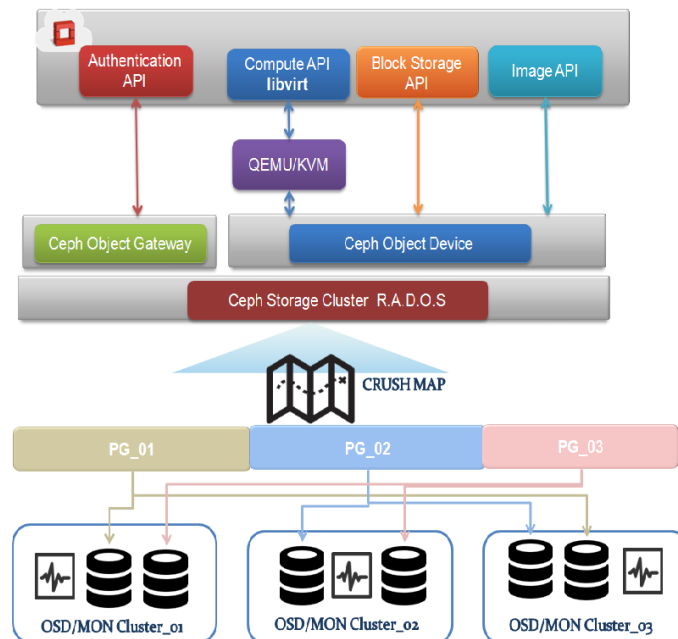
Volumes

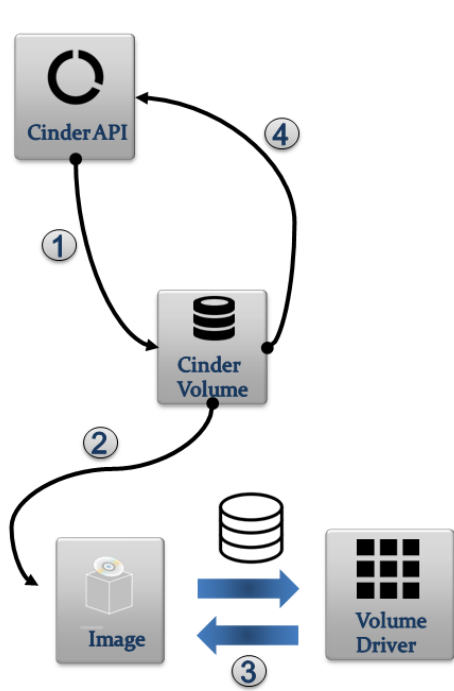
Project	Host	Name	Size	Status	Type	Attached To	Actions
-	packtpub.ccc	packtpub01_Thick	5GB	Deleting	ThickVolume		
admin	packtpub.ccc	packtpub01_Thin	5GB	Available	ThinVolume		Delete Volume

Displaying 2 items

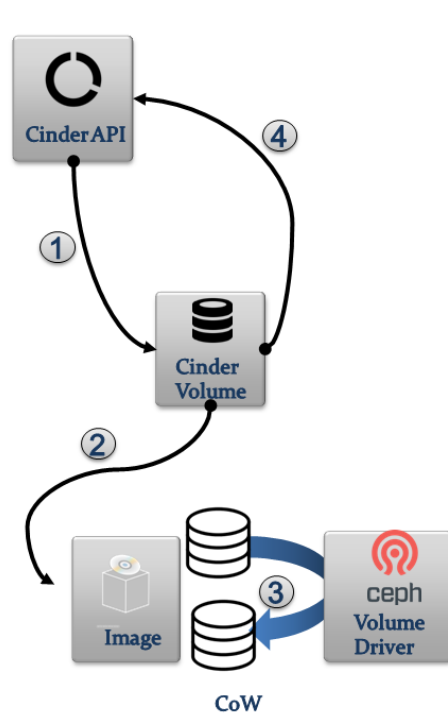
Volume Types

Name	Actions
PacktPub_Vol01	Delete Volume Type
ThinVolume	Delete Volume Type
ThickVolume	Delete Volume Type

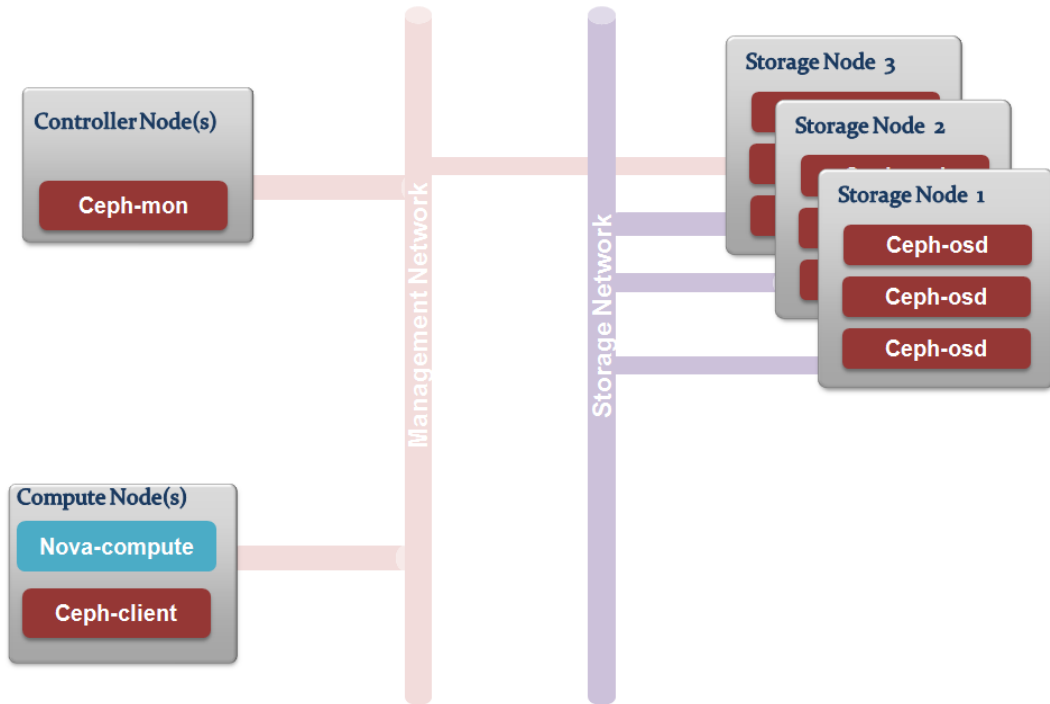




Standard Cinder Volume Creation



Fast Copy on Write Clone Volume



```

=> default: Running provisioner: chef_client...
=> default: Detected Chef (latest) is already installed
=> default: Creating folder to hold client key...
=> default: Uploading chef client validation key...
Generating chef JSON and uploading...
=> default: Running chef-client...
=> default: stdin: is not a tty
=> default: [2015-05-12T11:19:51+00:00] INFO: Forking chef instance to converge...
=> default: [2015-05-12T11:19:51+00:00] INFO: *** Chef 12.3.0 ***
=> default: [2015-05-12T11:19:51+00:00] INFO: Chef-client pid: 1319
=> default: [2015-05-12T11:20:00+00:00] INFO: Setting the run_list to ["role[ceph-osd]", "role[ceph-mon]"] from CLI options
=> default: [2015-05-12T11:20:00+00:00] INFO: Run List is [role[ceph-osd], role[ceph-mon]]
=> default: [2015-05-12T11:20:00+00:00] INFO: Run List expands to [ceph::repo, ceph::osd, ceph::mon]
=> default: [2015-05-12T11:20:00+00:00] INFO: Starting Chef Run for ceph01
=> default: [2015-05-12T11:20:00+00:00] INFO: Running start handlers
=> default: [2015-05-12T11:20:00+00:00] INFO: Start handlers complete.

```

```

cluster eae38b90-9c9f-411d-b2ce-f4447a510aed
health HEALTH_ERR 192 pgs stuck inactive; 192 pgs stuck unclean; no osds
monmap e1: 1 mons at{ceph01=192.168.47.100:6789/0},election epoch 2, quorum 0 ceph01
osdmap e1: 0 osds: 0 up, 0 in
pgmap v2: 192 pgs, 3 pools, 0 bytes data, 0 objects
        0 KB used, 0 KB / 0 KB avail
        192 creating

```

Property	Value
checksum	4f26676bcbb6bd4ac97ba295e0c53285
container_format	ovf
created_at	2015-05-12T19:35:58
deleted	False
deleted_at	None
disk format	qcow2
id	5c15e35b-c4a9-4fff-9197-a09e77d4f90a
is_public	True
min_disk	0
min_ram	0
name	CentOS-7-image
owner	c4ea3292ca234ddea5d50260e7e58193
protected	False
size	286675084
status	active
updated_at	2015-05-12T19:36:06
virtual_size	None

rbd_id.5c15e35b-c4a9-4fff-9197-a09e77d4f90a

```
Bringing machine 'storage_node1' up with 'virtualbox' provider...
Bringing machine 'storage_node2' up with 'virtualbox' provider...
Bringing machine 'storage_node3' up with 'virtualbox' provider...
Bringing machine 'storage_node4' up with 'virtualbox' provider...
Bringing machine 'storage_node5' up with 'virtualbox' provider...
```

```
==> storage_node1: Running provisioner: chef_client...
==> storage_node1: Detected Chef (latest) is already installed
==> storage_node1: Creating folder to hold client key...
==> storage_node1: Uploading chef client validation key...
Generating chef JSON and uploading...
==> storage_node1: Running chef-client...
```

Chapter 5: Implementing OpenStack Networking and Security

Manage Security Group Rules: PacktPub_SG

Security Group Rules

<input type="checkbox"/>	Direction	Ether Type	IP Protocol	Port Range	Remote
<input type="checkbox"/>	Egress	IPv6	Any	-	::0 (CIDR)
<input type="checkbox"/>	Egress	IPv4	Any	-	0.0.0.0 (CIDR)
<input type="checkbox"/>	Ingress	IPv4	ICMP	-	0.0.0.0 (CIDR)
<input type="checkbox"/>	Ingress	IPv4	TCP	22 (SSH)	0.0.0.0 (CIDR)

Displaying 4 items

```
+-----+-----+-----+
| id                | name      | description                |
+-----+-----+-----+
| 6973081d-2f21-4268-abc-3e5beddc12e6 | default  | default                    |
| 8d472279-d071-4610-a99d-6b19e1de0109 | default  | default                    |
| f3c3dbc1-93b7-471e-a5fc-e78b4e053be5 | PacktPub_SG | default Security Group PacktPub |
+-----+-----+-----+
```

Created a new security_group_rule:

```
+-----+-----+
| Field            | Value                |
+-----+-----+
| direction        | ingress              |
| ethertype        | IPv4                 |
| id               | 84297cf5-cd2f-469b-ad5b-7f8961fe5737 |
| port_range_max   |                      |
| port_range_min   |                      |
| protocol         | icmp                 |
| remote_group_id  |                      |
| remote_ip_prefix |                      |
| security_group_id | f3c3dbc1-93b7-471e-a5fc-e78b4e053be5 |
| tenant_id       | c4ea3292ca234ddea5d50260e7e58193 |
+-----+-----+
```

Created a new security_group_rule:

Field	Value
direction	ingress
ethertype	IPv4
id	6b9550f4-b27b-446f-b582-9c895c56abc5
port_range_max	22
port_range_min	22
protocol	tcp
remote_group_id	
remote_ip_prefix	
security_group_id	f3c3dbc1-93b7-471e-a5fc-e78b4e053be5
tenant_id	c4ea3292ca234ddea5d50260e7e58193

progress	0
security_groups	default, PacktPub_SG
status	ACTIVE
tenant_id	c4ea3292ca234ddea5d50260e7e58193
updated	2015-04-27T11:22:08Z
user_id	c6167606b452492a8bf396c4ab2584b0

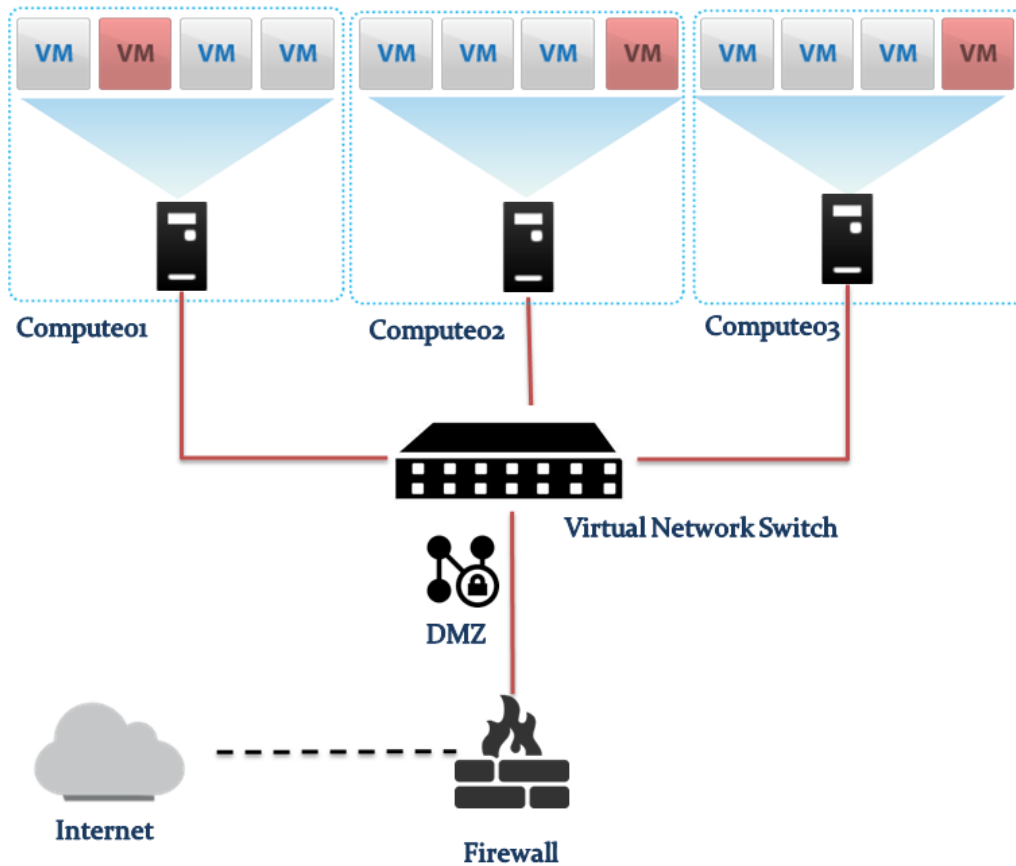
```
-A neutron-openvswi-if7fabcce-f -m state --state RELATED,ESTABLISHED -j RETURN  
-A neutron-openvswi-if7fabcce-f -p tcp -m tcp --dport 22 -j RETURN  
-A neutron-openvswi-if7fabcce-f -p icmp -j RETURN  
-A neutron-openvswi-if7fabcce-f -s 10.10.10.3/32 -p udp -m udp --sport 67 --dport 68 -j RETURN
```

```
-A neutron-openvswi-of7fabcce-f -m state --state RELATED,ESTABLISHED -j RETURN  
-A neutron-openvswi-of7fabcce-f -j RETURN  
-A neutron-openvswi-of7fabcce-f -j neutron-openvswi-sg-fallback  
-A neutron-openvswi-sf7fabcce-f -s 10.10.10.2/32 -m mac --mac-source FA:16:3E:7E:79:64 -j RETURN
```

```
PING 10.10.10.2 (10.10.10.2) 56(84) bytes of data.  
64 bytes from 10.10.10.2: icmp_seq=1 ttl=64 time=340 ms  
64 bytes from 10.10.10.2: icmp_seq=2 ttl=64 time=0.593 ms  
64 bytes from 10.10.10.2: icmp_seq=3 ttl=64 time=0.583 ms
```

```
The authenticity of host '10.10.10.2 (10.10.10.2)' can't be established.  
RSA key fingerprint is 0c:91:40:1e:f4:1e:53:67:4c:60:c3:d4:90:25:02:93.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added '10.10.10.2' (RSA) to the list of known hosts.
```

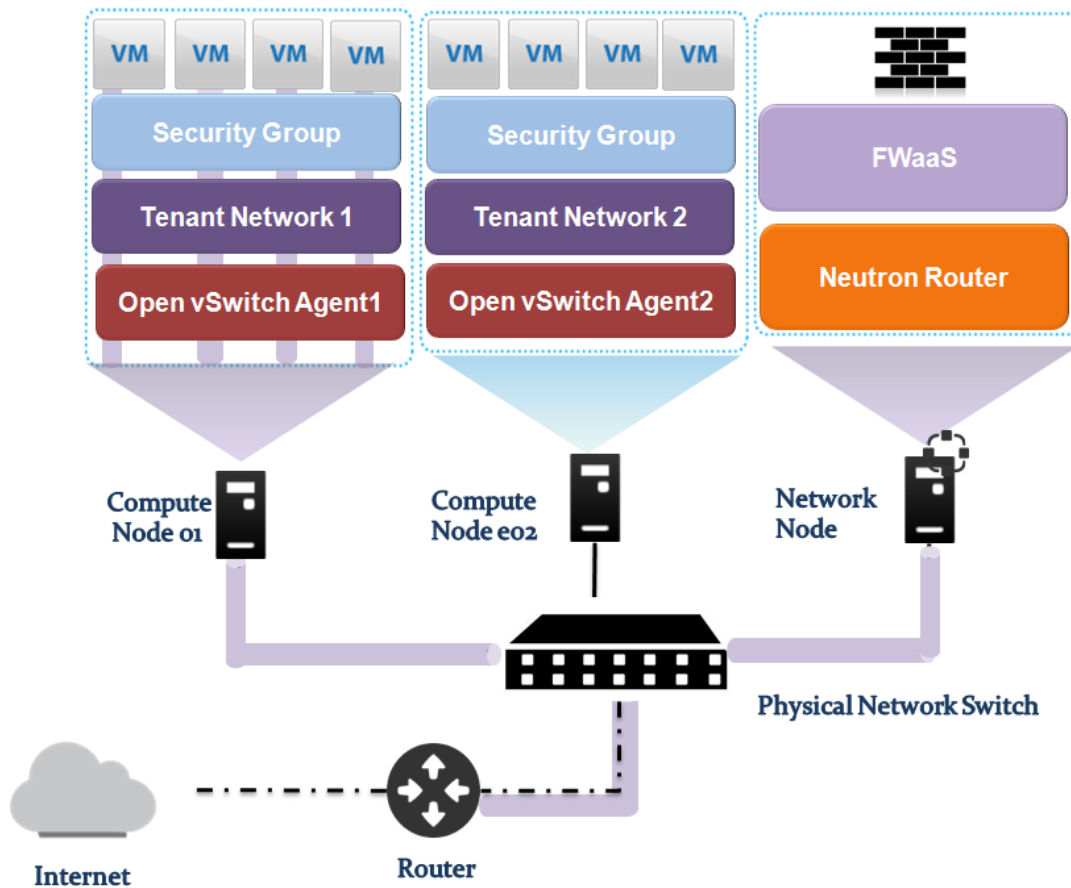
\$




Manage Security Group Rules: DMZ_Zone

Security Group Rules

<input type="checkbox"/>	Direction	Ether Type	IP Protocol	Port Range	Remote
<input type="checkbox"/>	Egress	IPv6	Any	-	:::0 (CIDR)
<input type="checkbox"/>	Egress	IPv4	Any	-	0.0.0.0/0 (CIDR)
<input type="checkbox"/>	Ingress	IPv4	TCP	80 (HTTP)	0.0.0.0/0 (CIDR)
<input type="checkbox"/>	Ingress	IPv4	TCP	443 (HTTPS)	0.0.0.0/0 (CIDR)
<input type="checkbox"/>	Ingress	IPv4	TCP	3306 (MYSQL)	0.0.0.0/0 (CIDR)




PacktPub

Project

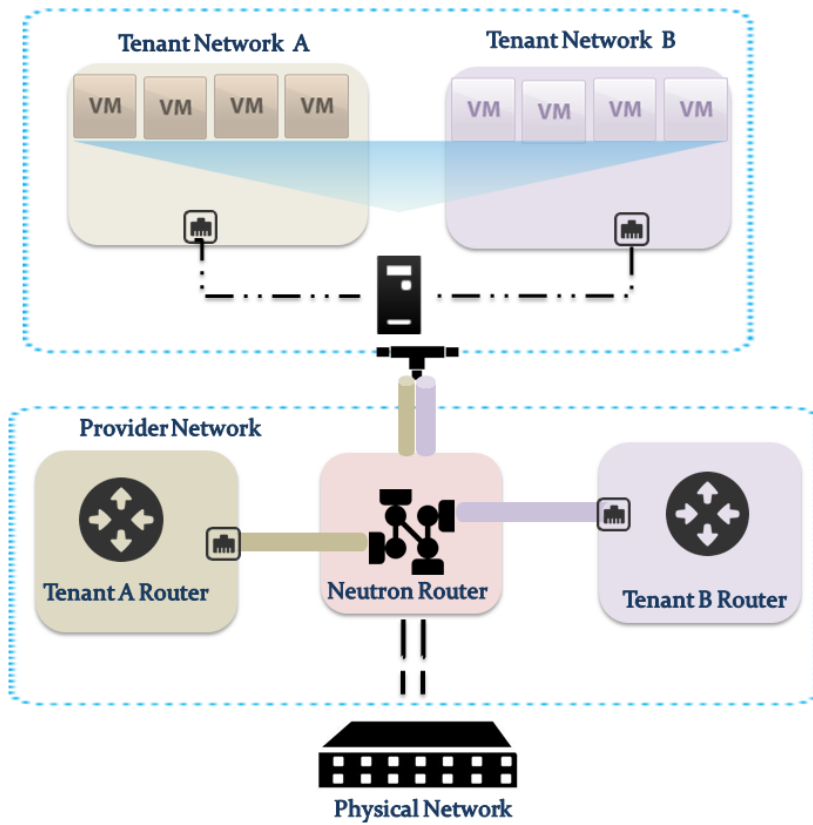
- Compute
- Network**
- Network Topology
- Networks
- Routers
- Firewalls**
- Object Store

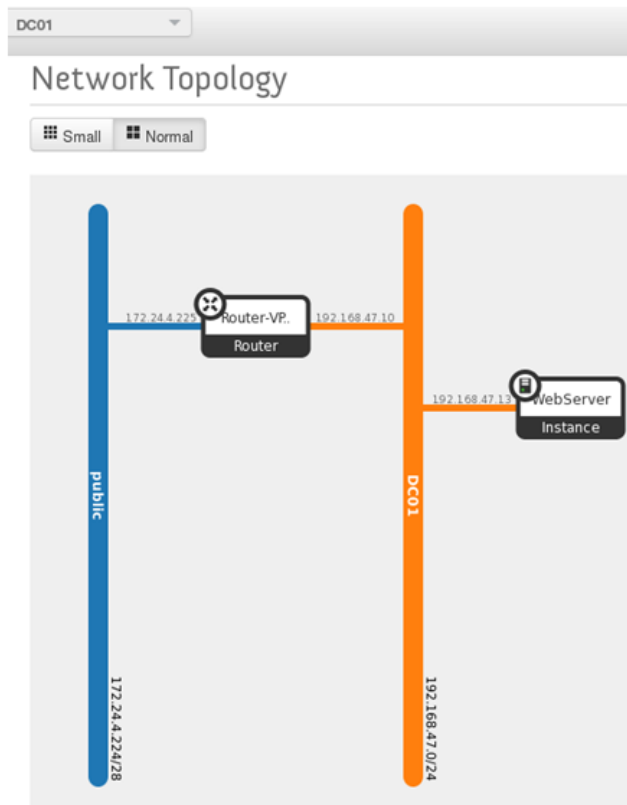
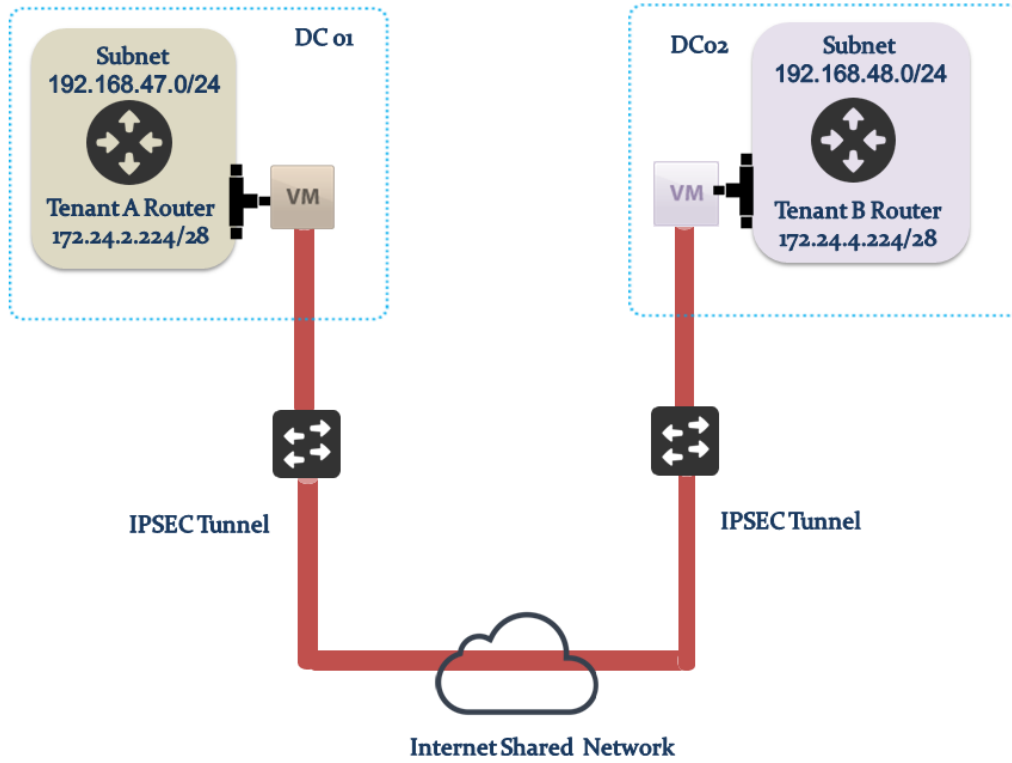
Firewalls

[Firewalls](#)
[Firewall Policies](#)
[Firewall Rules](#)

Firewalls

Name	Policy
Displaying 0 items	

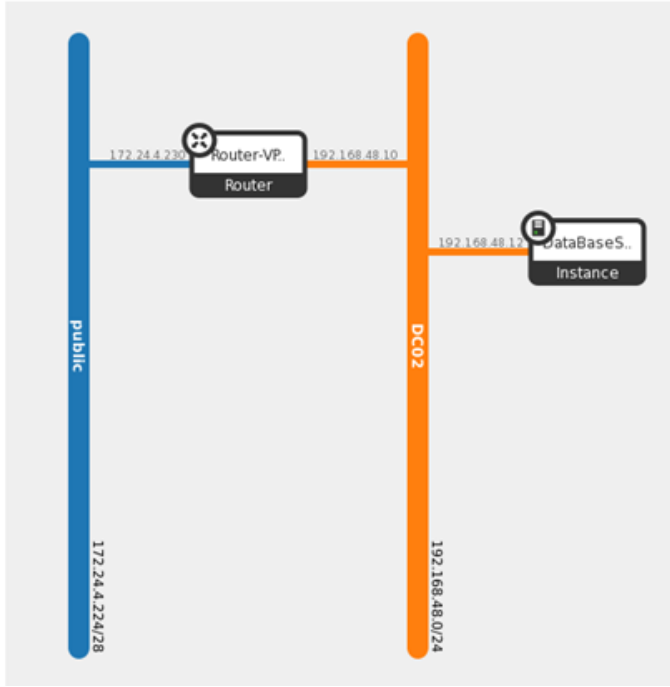




DC02

Network Topology

Small Normal



Add IKE Policy

Add New IKE Policy *

Name *

PP-IKE-Policy

Crea
Assi

Description

Authorization algorithm *

sha1

Encryption algorithm *

aes-256

IKE version *

v2

Lifetime units for IKE keys *

seconds

Lifetime value for IKE keys *

3600

Perfect Forward Secrecy *

group5

IKE Phase1 negotiation mode *

main

Add IPSec Policy

Add New IPSec Policy *

Name *

PP_IPSEC_Policy

Description

Authorization algorithm *

sha1

Encapsulation mode *

tunnel

Encryption algorithm *

aes-256

Lifetime units *

seconds

Lifetime value for IKE keys *

3600

Perfect Forward Secrecy *

group5

Transform Protocol *

esp

Create IPSec Pol

Assign a name ai

Add VPN Service

Add New VPN Service *

Name *

PP_VPN_Serice

Description

Router *

Router-VPN01

Subnet *

192.168.47.0/24

Admin State

Add IPSec Site Connection

Add New IPSec Site Connection * Optional Para

Name *

Description

VPN Service associated with this connection *

IKE Policy associated with this connection *

IPSec Policy associated with this connection *

Peer gateway public IPv4/IPv6 Address or FQDN *

Peer router identity for authentication (Peer ID) *

Remote peer subnet(s) *

Pre-Shared Key (PSK) string *

Interfaces

<input type="checkbox"/>	Name	Fixed IPs	Status	Type	Admin
<input type="checkbox"/>	(045c2737)	172.24.4.232	DOWN	External Gateway	UP
<input type="checkbox"/>	(e4657d5b)	192.168.47.10	DOWN	Internal Interface	UP

```
# ping 192.168.48.12
PING 192.168.48.12 (192.168.48.12): 56 data bytes
64 bytes from 192.168.48.12: seq=0 ttl=64 time=1.295 ms
64 bytes from 192.168.48.12: seq=1 ttl=64 time=0.308 ms
64 bytes from 192.168.48.12: seq=2 ttl=64 time=0.284 ms
64 bytes from 192.168.48.12: seq=3 ttl=64 time=0.245 ms
64 bytes from 192.168.48.12: seq=4 ttl=64 time=0.245 ms
```

```
# ping 192.168.47.13
PING 192.168.47.13 (192.168.47.13): 56 data bytes
64 bytes from 192.168.47.13: seq=0 ttl=64 time=0.737 ms
64 bytes from 192.168.47.13: seq=1 ttl=64 time=0.452 ms
64 bytes from 192.168.47.13: seq=2 ttl=64 time=0.263 ms
64 bytes from 192.168.47.13: seq=3 ttl=64 time=0.241 ms
64 bytes from 192.168.47.13: seq=4 ttl=64 time=0.264 ms
```

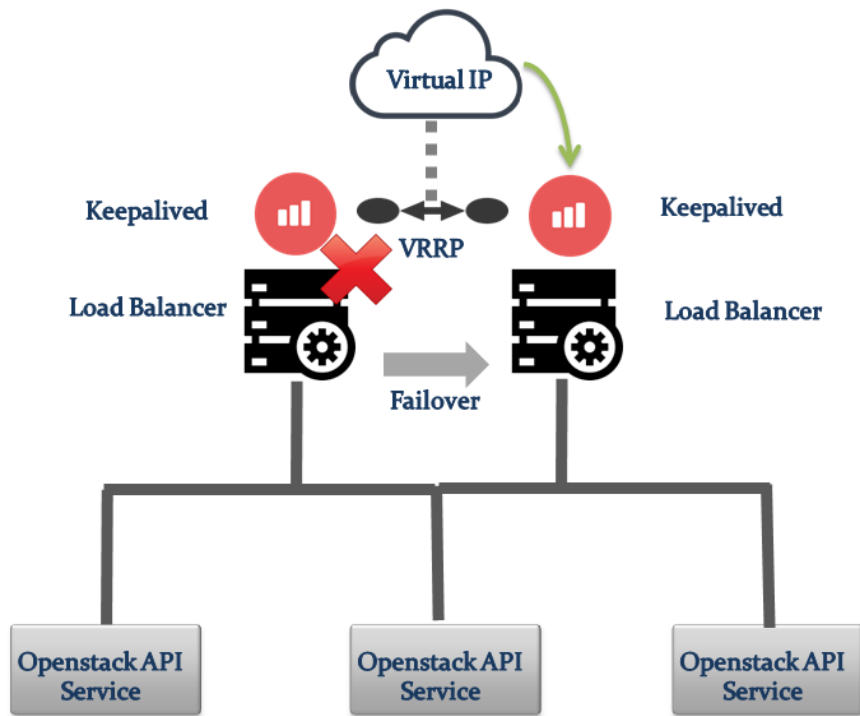
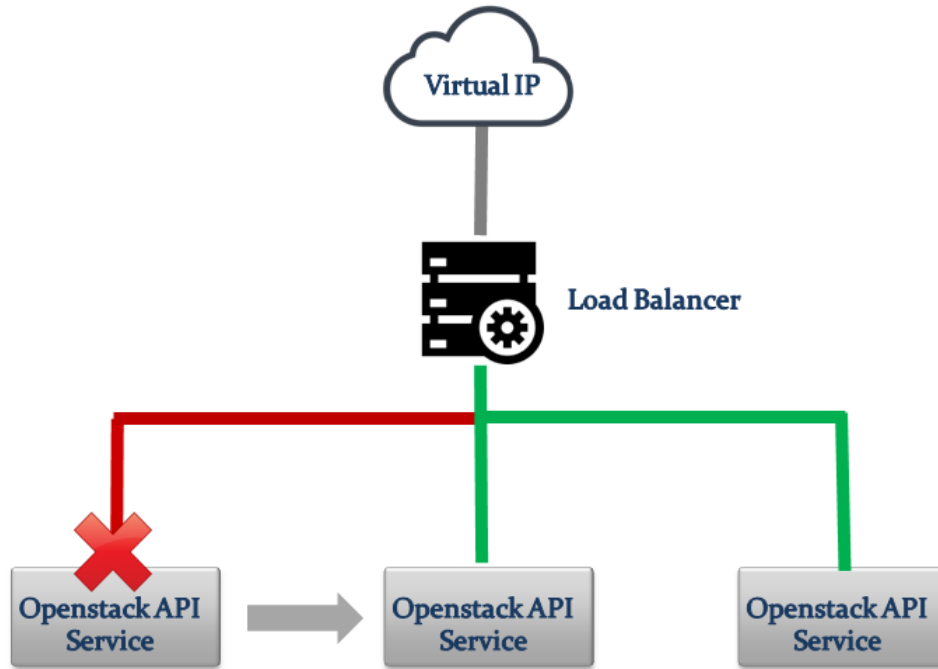
```
-A FORWARD -j neutron-filter-top
-A FORWARD -j neutron-openvswi-FORWARD
-A FORWARD -j nova-filter-top
-A FORWARD -j nova-network-FORWARD
-A FORWARD -j nova-api-FORWARD
```

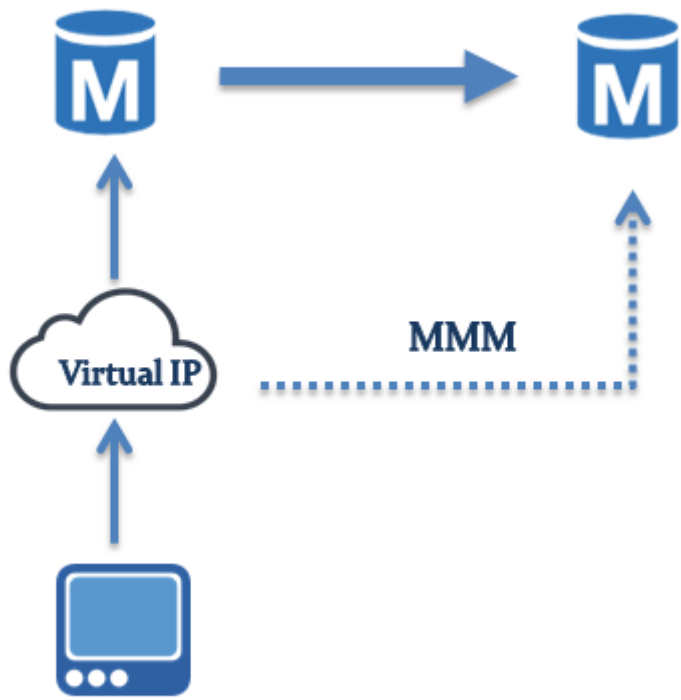
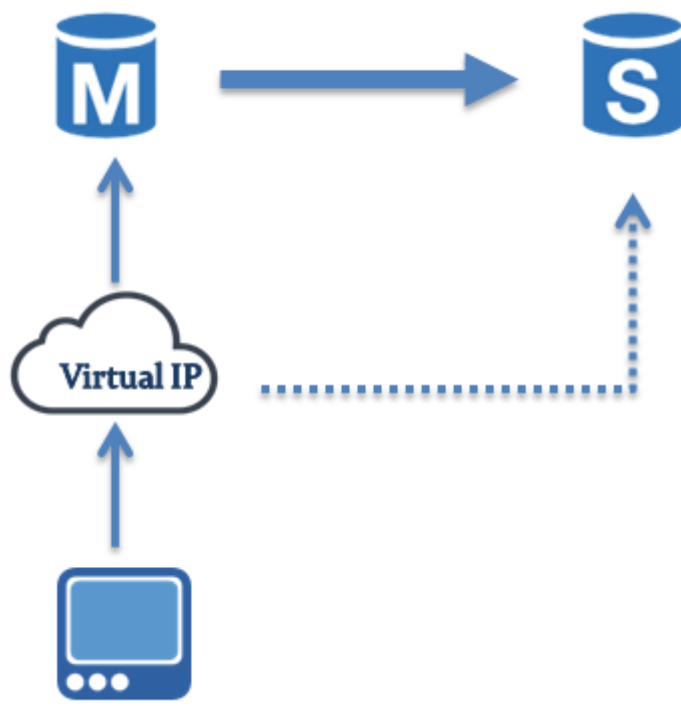
```
-A FORWARD -j neutron-openvswi-FORWARD
```

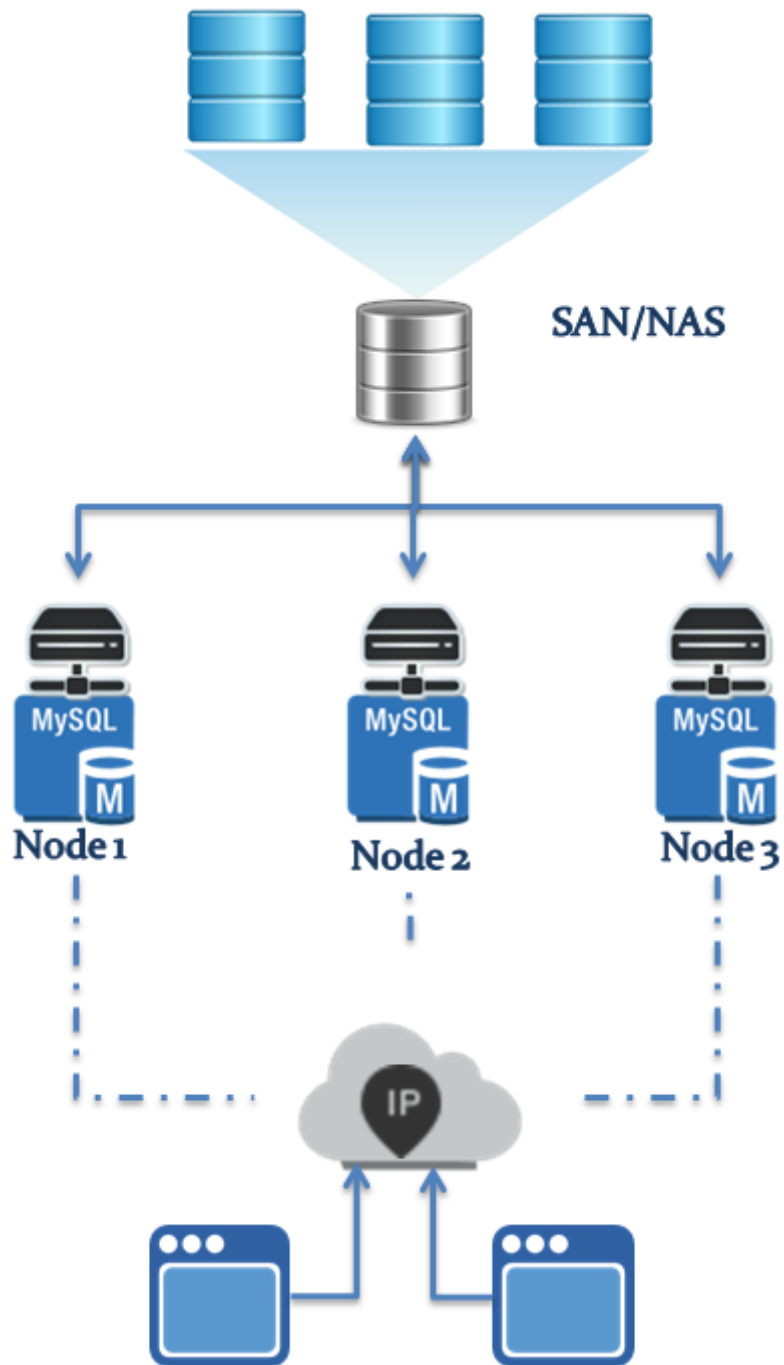
```
-A neutron-openvswi-sg-chain -m physdev --physdev-out tap6919f23b-34 --physdev-is-bridged -j neutron-openvswi-i6919f23b-3
-A neutron-openvswi-sg-chain -m physdev --physdev-in tap6919f23b-34 --physdev-is-bridged -j neutron-openvswi-o6919f23b-3
-A neutron-openvswi-sg-chain -j ACCEPT
```

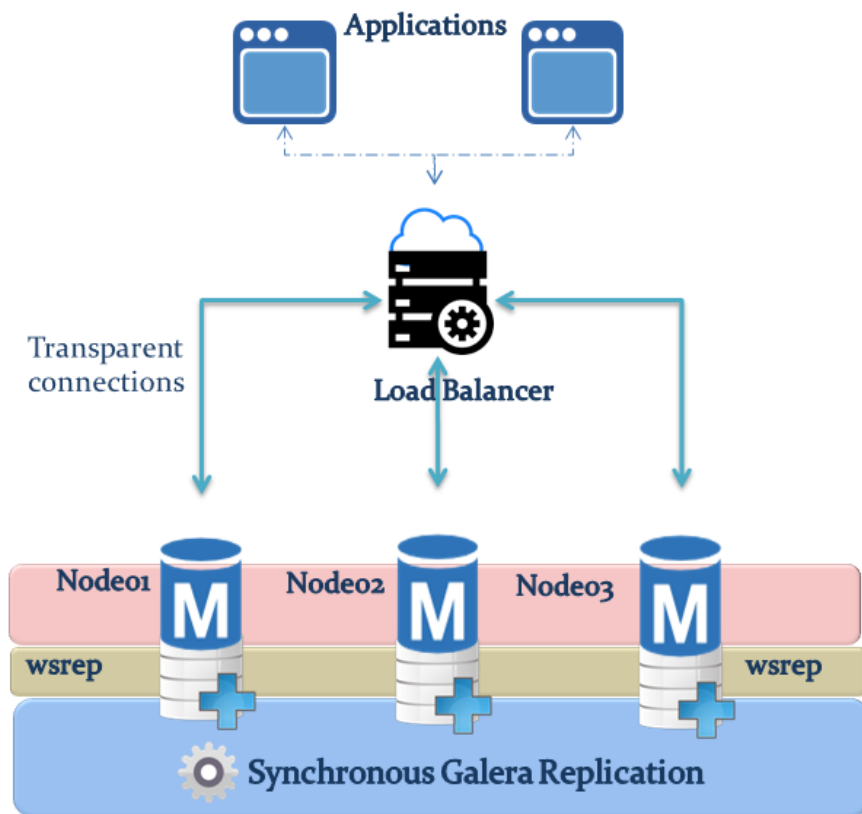
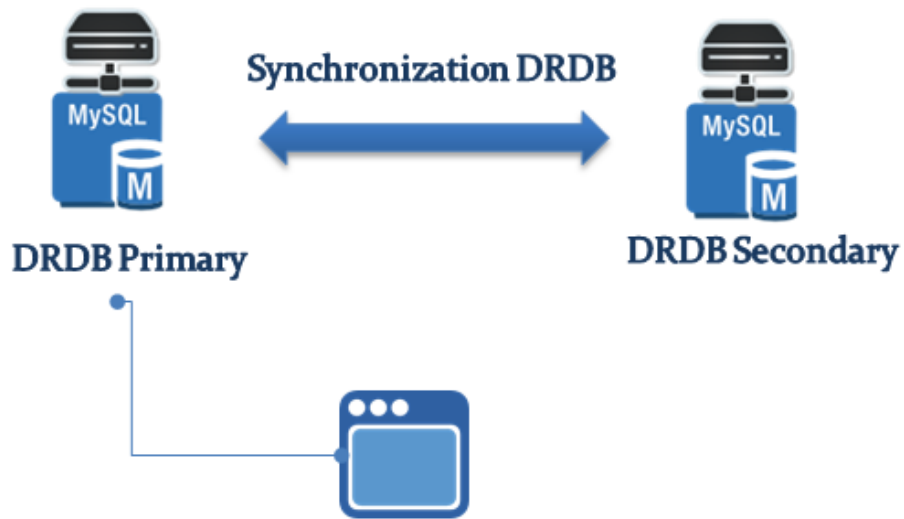
```
-A neutron-openvswi-i6919f23b-3 -p tcp -m tcp --dport 80 -j RETURN
-A neutron-openvswi-i6919f23b-3 -p tcp -m tcp --dport 443 -j RETURN
-A neutron-openvswi-i6919f23b-3 -p tcp -m tcp --dport 3306 -j RETURN
```

Chapter 6: OpenStack HA and Failover

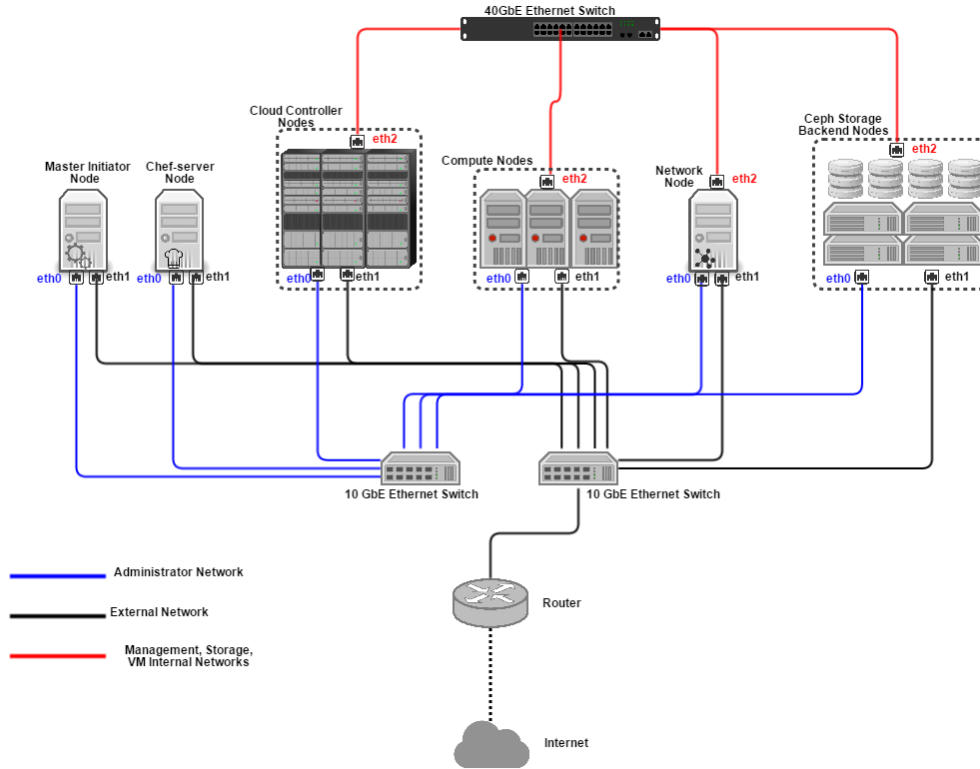








Chapter 7: OpenStack Multinode Deployment – Bringing in Production



Property	Value
checksum	None
container_format	bare
created_at	2015-03-06T17:54:49
deleted	False
deleted_at	None
disk_format	qcow2
id	a717e479-f783-4d99-b7da-3533c5c81c93
is_public	True
min_disk	0
min_ram	0
name	pack_cirros_img
owner	d81ea6cc044741fe949796d1748778ac
protected	False
size	13147648
status	queued
updated_at	2015-03-06T17:54:49
virtual_size	None

Created a new network:

Field	Value
admin_state_up	True
id	203f453e-3012-49cd-b383-09f4bbbed5de8
name	external01
provider:network_type	vxlan
provider:physical_network	
provider:segmentation_id	15
router:external	True
shared	False
status	ACTIVE
subnets	
tenant_id	d81ea6cc044741fe949796d1748778ac

Created a new subnet:

Field	Value
allocation_pools	{ "start": "94.49.0.99", "end": "94.49.0.200" }
cidr	192.168.120.0/24
dns_nameservers	
enable_dhcp	False
gateway_ip	94.49.0.1
host_routes	
id	8ba96538-553c-4da6-a338-2c662feface8
ip_version	4
name	external01-subnet01
network_id	203f453e-3012-49cd-b383-09f4bbbed5de8
tenant_id	d81ea6cc044741fe949796d1748778ac

Created a new subnet:

Field	Value
allocation_pools	{"start": "192.168.47.2", "end": "192.168.47.254"}
cidr	192.168.47.0/24
dns_nameservers	8.8.8.8
enable_dhcp	True
gateway_ip	192.168.47.1
host_routes	
id	d7255778-0c98-4afd-bd99-5e96dc5b2377
ip_version	4
name	private01-subnet01
network_id	99255c3d-b48b-4ad9-a057-8511bded8af4
tenant_id	9d06805835cd49118e951be62b3323c3

id	name	subnets
203f453e-3012-49cd-b383-09f4bbed5de8	external01	8ba96538-553c-4da6-a338-2c662feface8
99255c3d-b48b-4ad9-a057-8511bded8af4	private01	d7255778-0c98-4afd-bd99-5e96dc5b2377 192.168.47.0/24

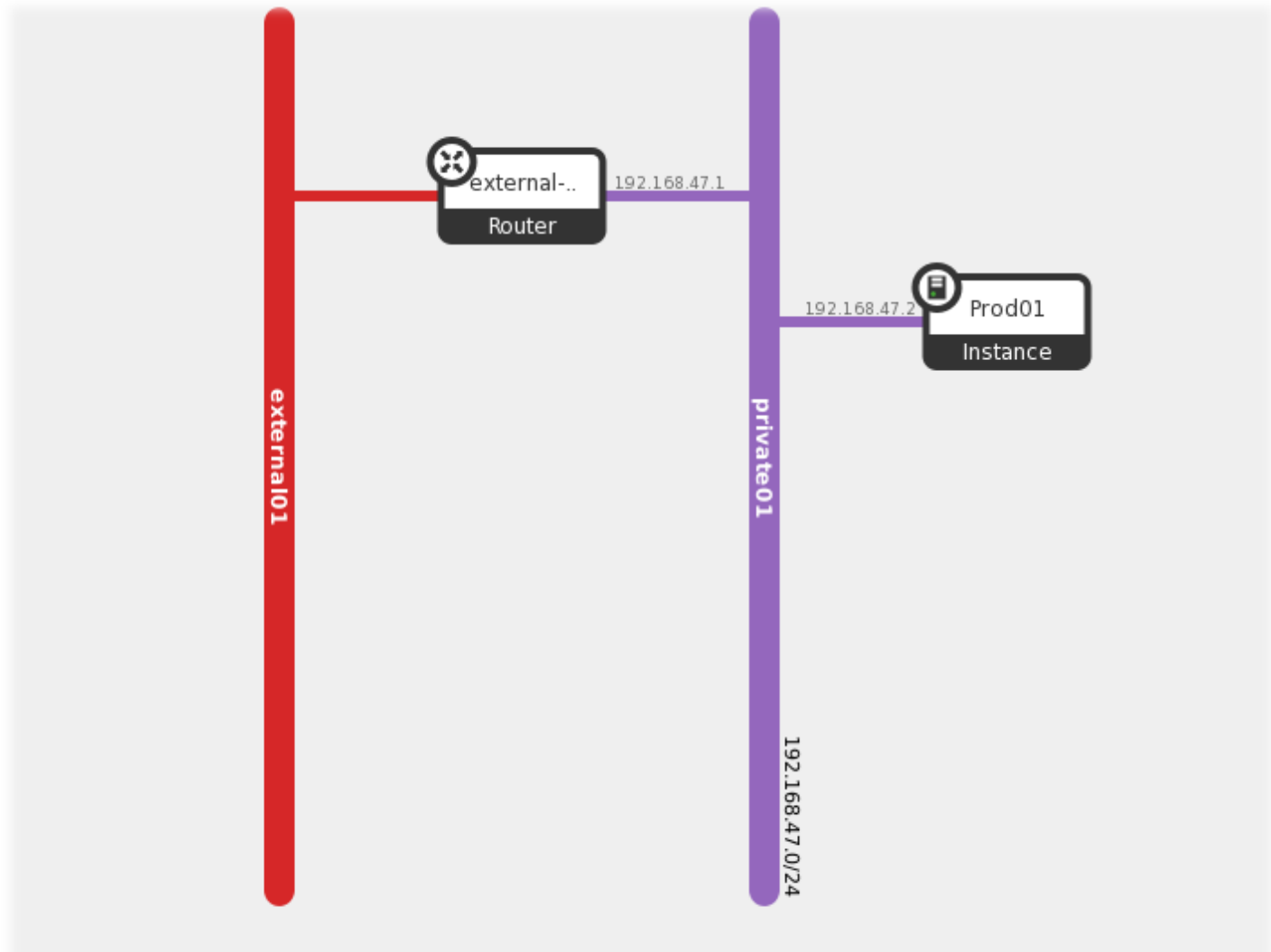
Property	Value
OS-DCF:diskConfig	MANUAL
OS-EXT-AZ:availability_zone	nova
OS-EXT-STS:power_state	0
OS-EXT-STS:task_state	scheduling
OS-EXT-STS:vm_state	building
OS-SRV-USG:launched_at	-
OS-SRV-USG:terminated_at	-
accessIPv4	
accessIPv6	
adminPass	xSBDCcbXN6f2
config_drive	
created	2015-03-06T18:37:53Z
flavor	ml.tiny (1)
hostId	
id	928c2f10-9974-40f0-94e1-deb52bbd00dd
image	pack_cirros_img (a717e479-f783-4d99-b7da-353)
key_name	pack_key
metadata	{}
name	Prod01
os-extended-volumes:volumes_attached	[]
progress	0
security_groups	default
status	BUILD
tenant_id	9d06805835cd49118e951be62b3323c3
updated	2015-03-06T18:37:54Z
user_id	7ac4488d61ca498cb0b485d1acb58e7d

Server building... 0% complete
 Server building... 100% complete
 Finished

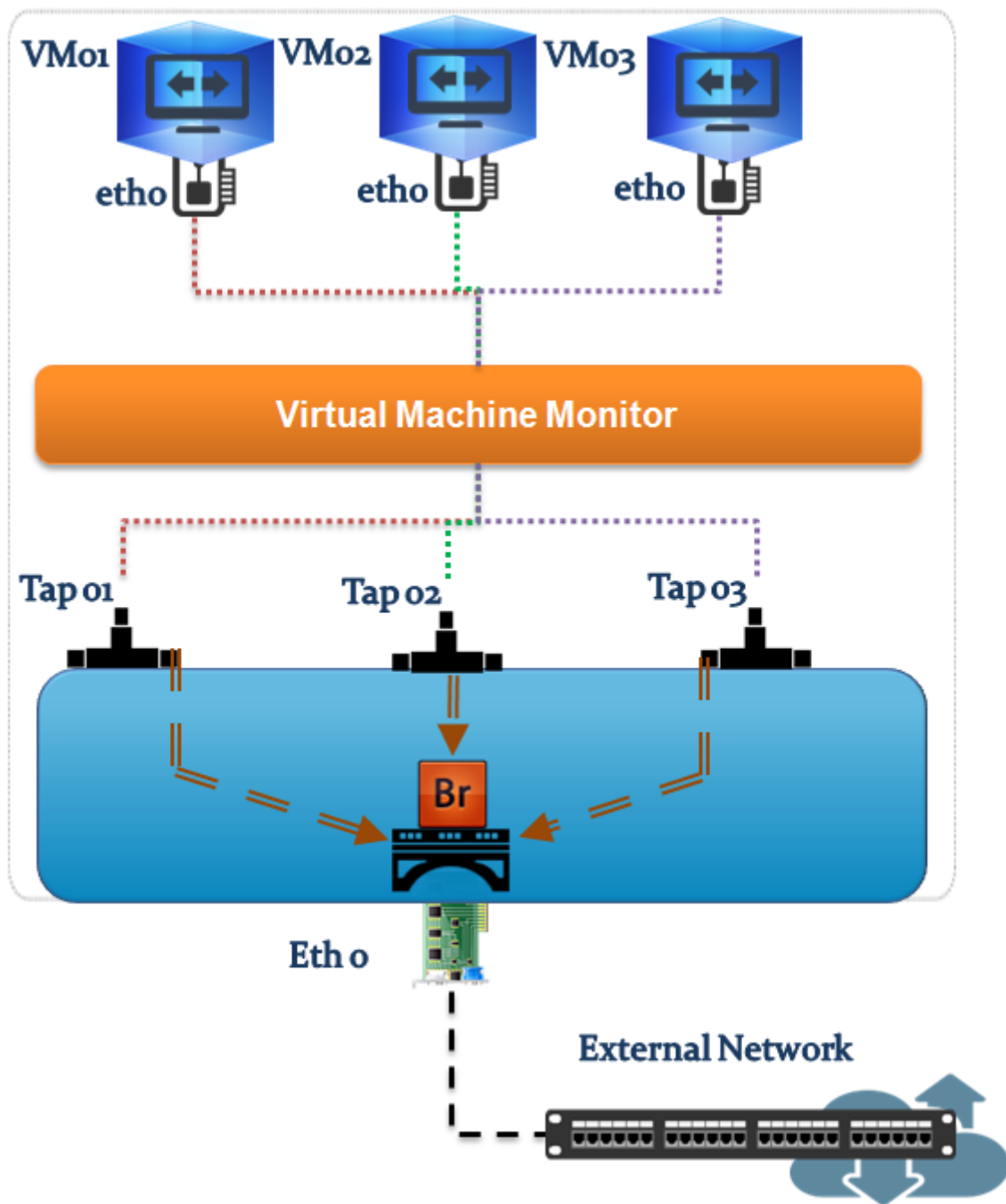
id	fixed_ip_address	floating_ip_address	port_id
76384bbf-f58c-42a8-9d96-8cd6a72ff256		94.49.0.100	

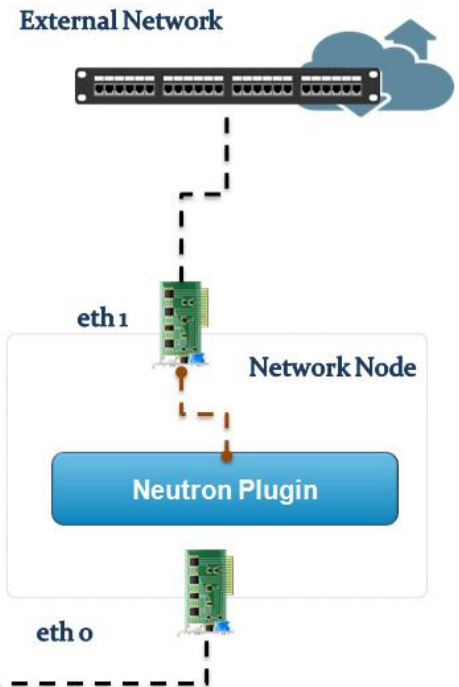
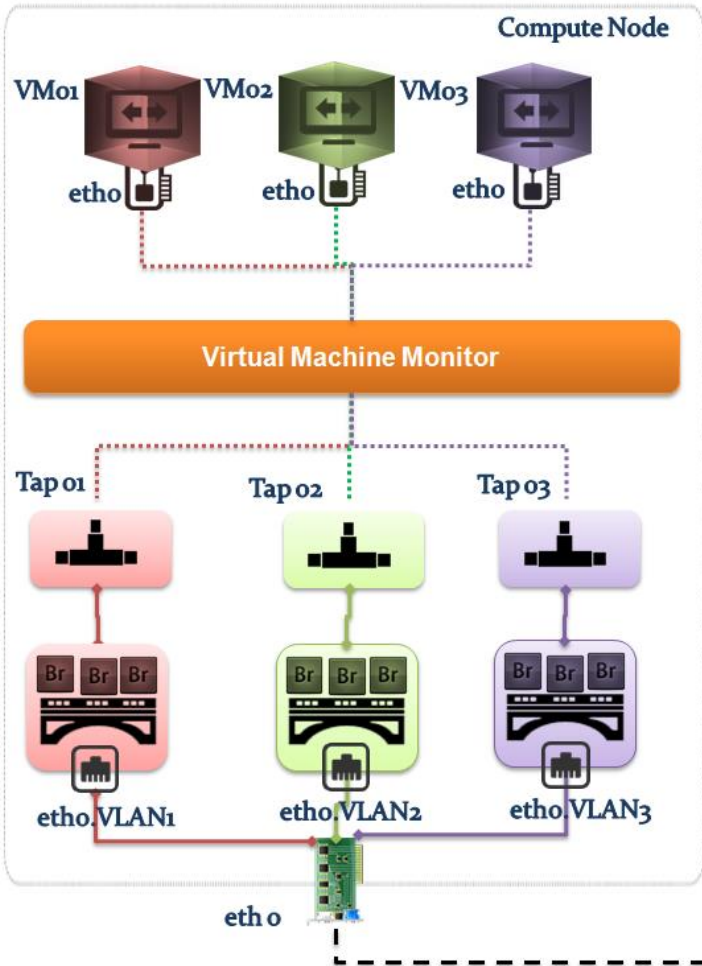
id	name	mac_address	fixed_ips
9bbe9442-1864-4b97-a31b-aade48936ffd		fa:16:3e:1b:b7:3c	{"subnet_id": "d7255778-0c98-4afd-bd99-5e96dc5b2377", "ip_address": "192.168.47.2"}

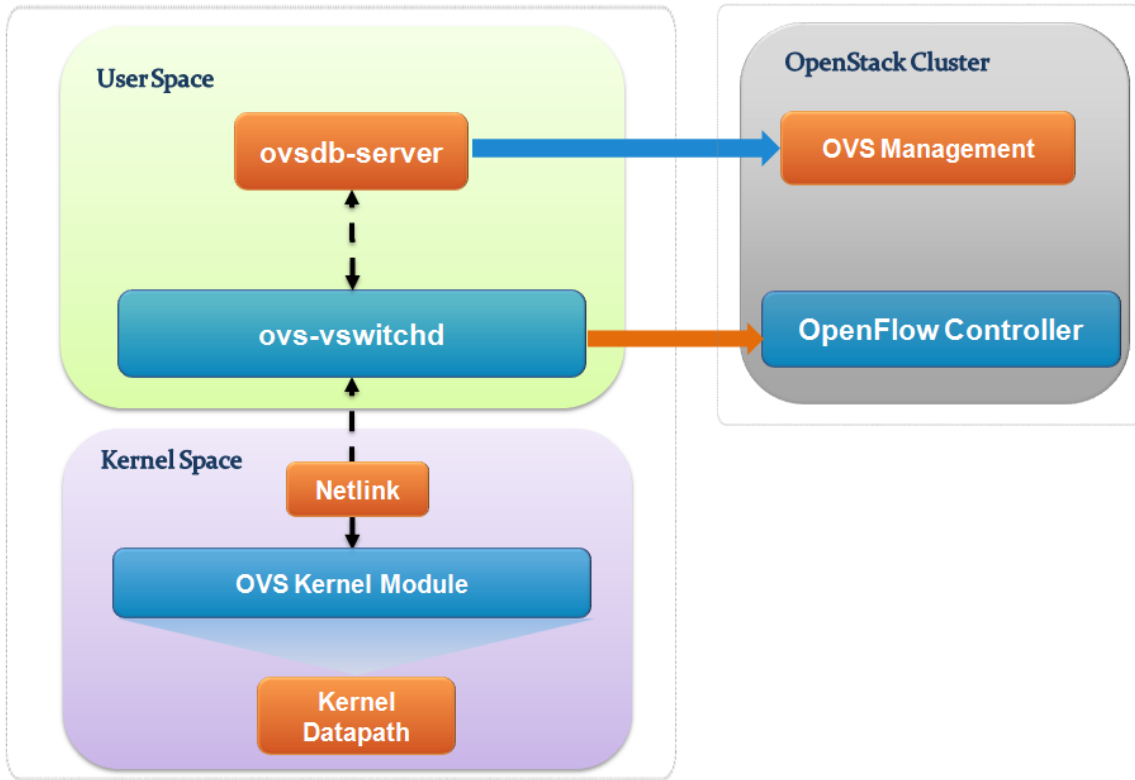
ID	Name	Status	Task State	Power State	Networks
928c2f10-9974-40f0-94e1-deb52bbd00dd	Prod01	ACTIVE	-	Running	private01=192.168.47.2, 94.49.0.100

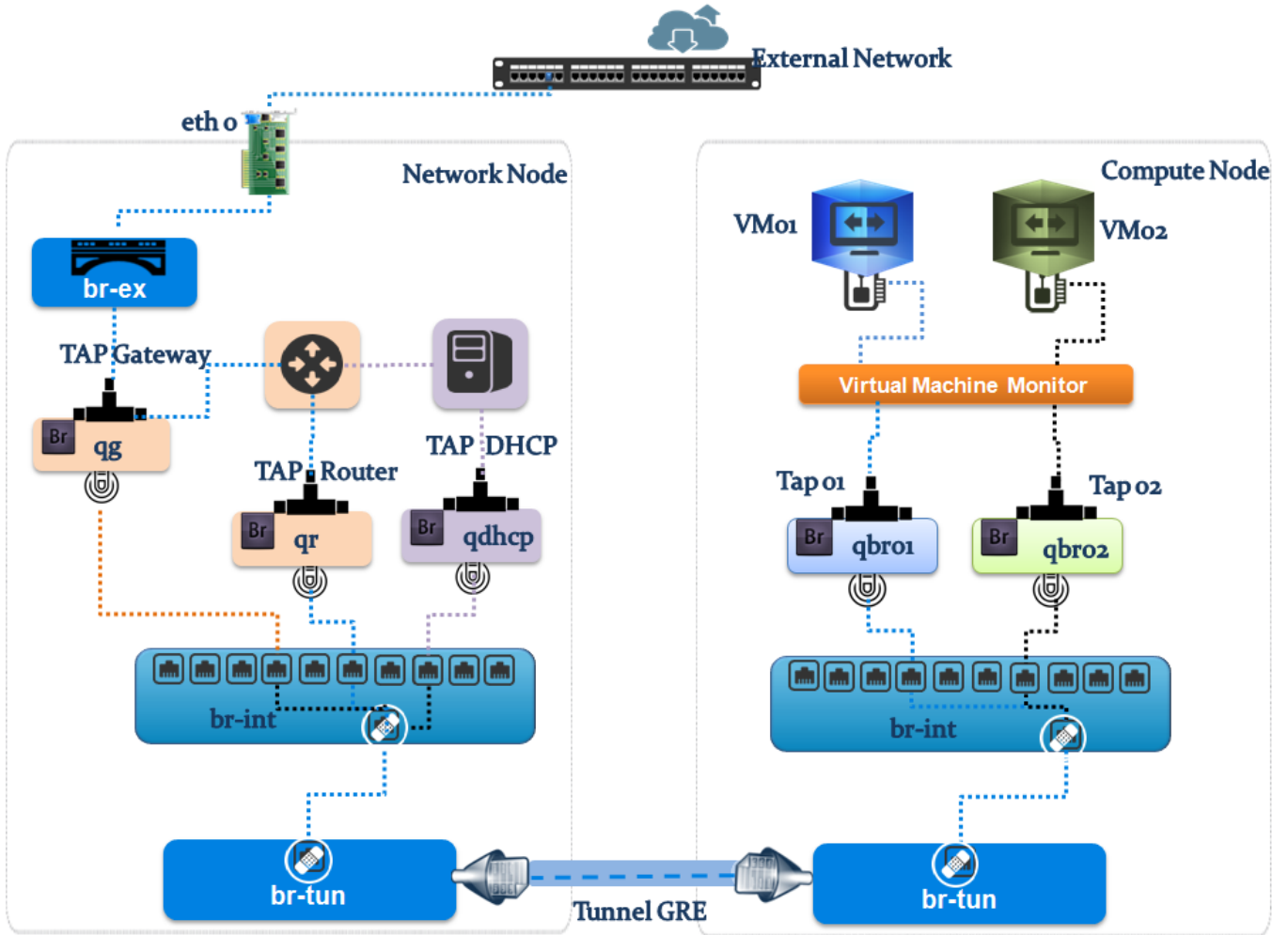


Chapter 8: Extending OpenStack – Advanced Networking Features and Deploying Multi-tier Applications









Project

- Compute
- Network
- Network Topology
- Networks
- Routers
- Load Balancers

Load Balancer

Pools Members Monitors

Pools

Name	Description	Provider
Displaying 0 items		

id	stack_name	stack_status	creation_time
1e4930ee-50d8-4873-bba3-12aecdlc9234	lb_stack	CREATE_IN_PROGRESS	2015-05-25T04:36:10Z

id	name	address	protocol	admin_state_up	status
6c69c288-66f0-4ef8-b75c-35b3a999c189	pool.vip	10.0.0.8	HTTP	True	ACTIVE

- Compute ▶
- Network ▼
- Network Topology
- Networks
- Routers
- Load Balancers

Pools Members Monitors

Members

<input type="checkbox"/>	IP Address	Protocol Port	Pool
<input type="checkbox"/>	10.0.0.7	80	http-pool

Displaying 1 item

Instance Details: lb_stack-er-tiny_cluster-d6scaqg

Overview Log Console

Instance Console Log

```
[[32m OK [0m] Mounted Configuration File System.  
[[32m OK [0m] Reached target Sound Card.  
[ 1957.593421] cloud-init[601]: systemctl start httpd.service  
Starting The Apache HTTP Server...  
[[32m OK [0m] Started The Apache HTTP Server.  
[ 2028.796614] cloud-init[601]: setsebool -P httpd_can_network_connect_db=1  
[ 2556.085136] [sched_delayed] sched: RT throttling activated  
[ 2580.470311] cloud-init[601]: systemctl restart httpd.service  
Stopping The Apache HTTP Server...  
[[32m OK [0m] Stopped The Apache HTTP Server.  
Starting The Apache HTTP Server...  
[[32m OK [0m] Started The Apache HTTP Server.
```

| port_id | d4e94b15-dae6-4ccd-bd0d-ca45a6322295 |

id	fixed_ip_address	floating_ip_address	port_id
15e329aa-2821-457a-8622-1c85df5e1b59		192.168.59.248	
c84b4dd7-4d75-4caa-9179-c4c56ea7c404	10.0.0.14	192.168.59.249	ee51f346-7844-4a0c-ad55-be625c81b883
d7105201-6d1d-41d0-9998-812b31653fa8	10.0.0.15	192.168.59.246	f66771ab-56a1-4afb-be6c-879bc9af1b73

id	fixed_ip_address	floating_ip_address	port_id
15e329aa-2821-457a-8622-1c85df5e1b59	10.0.0.8	192.168.59.246	d4e94b15-dae6-4ccd-bd0d-ca45a6322295

Fedora Test Page

This page is used to test the proper operation of the Apache HTTP server after it has been installed. If you can read this page, it means that the web server installed at this site is working p

If you are a member of the general public:

The fact that you are seeing this page indicates that the website you just visited is either experiencing problems, or is undergoing routine maintenance.

If you would like to let the administrators of this website know that you've seen this page instead of the page you expected, you should send them e-mail. In general, mail sent to the name "webmaster" and directed to the website's domain should reach the appropriate person.

For example, if you experienced problems while visiting www.example.com, you should send e-mail to "webmaster@example.com".

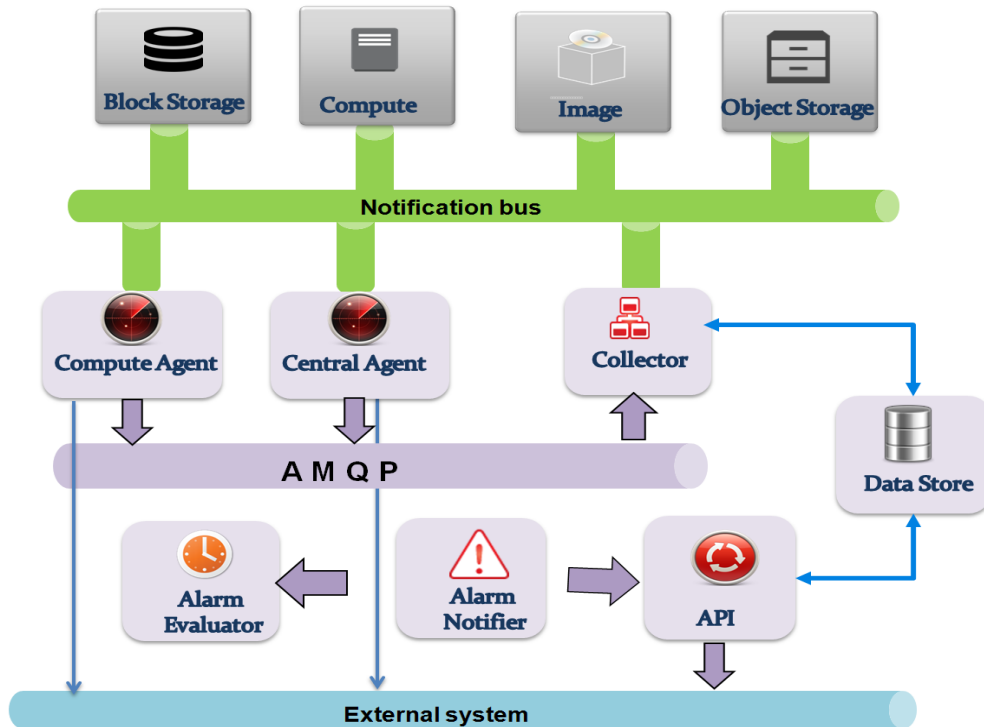
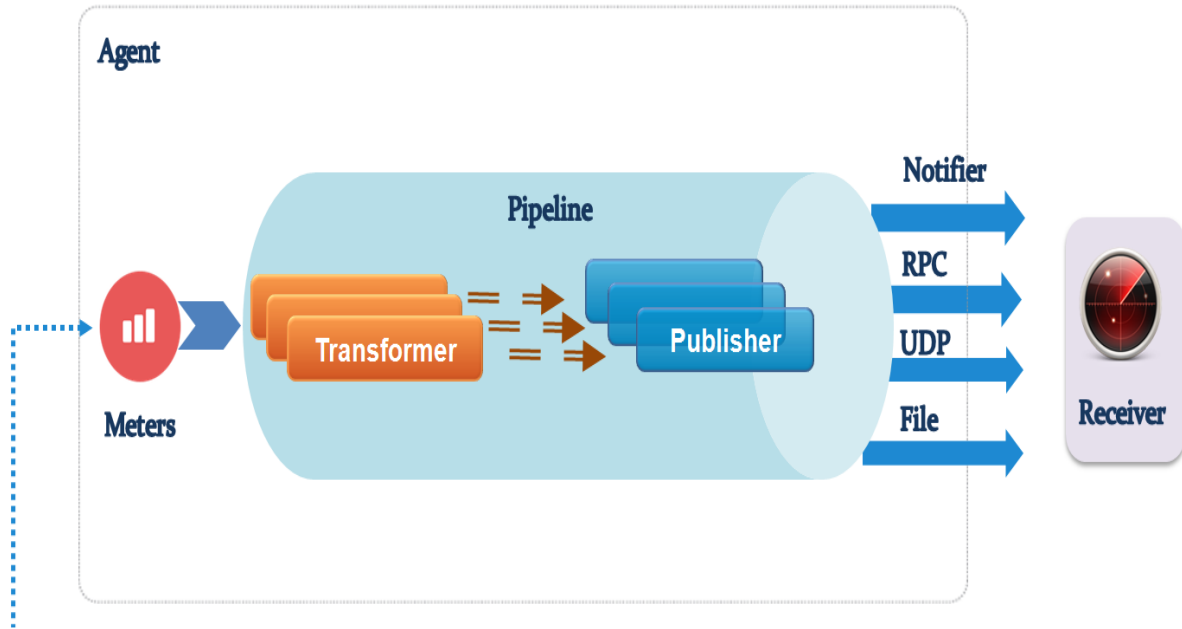
If you are the website administrator:

You may now add content to the directory `/var/www/html/`. Do not see this page, and not your content. To prevent this page from being seen, create a file `/etc/httpd/conf.d/welcome.conf`.

You are free to use the images below on Apache and Fedora!



Chapter 9: Monitoring OpenStack – Ceilometer and Zabbix



System Info

Services

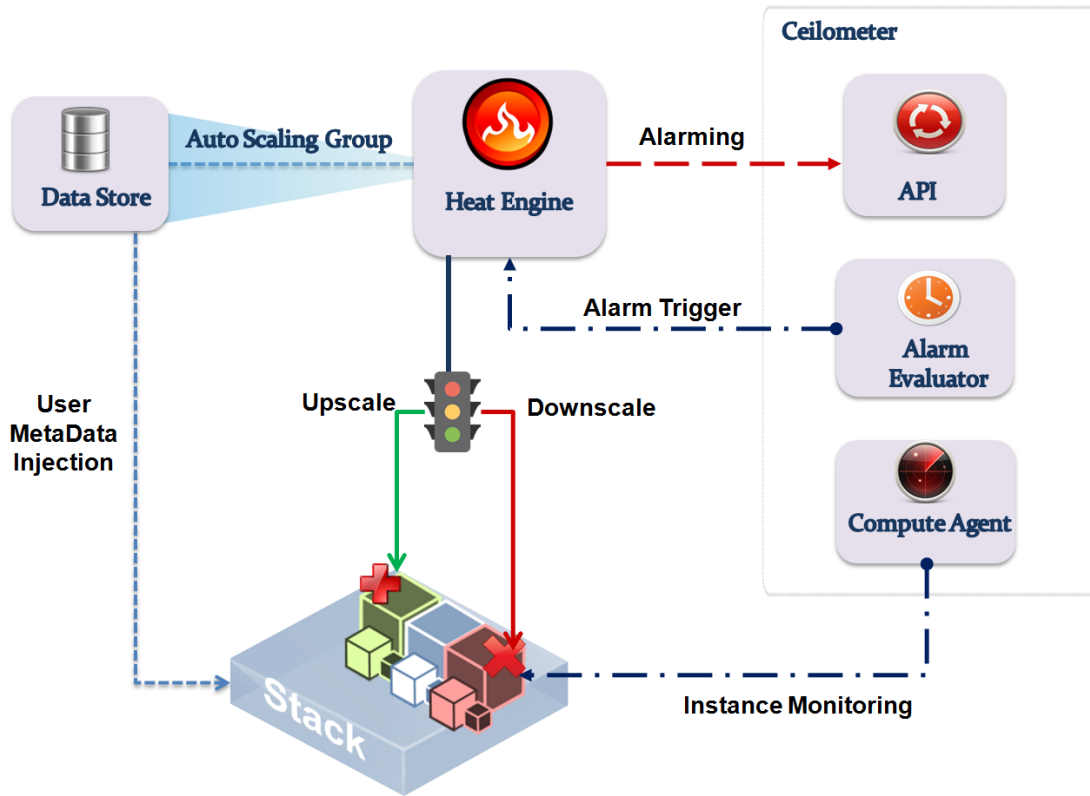
Compute Services

Network Agents

Default Quotas

Services

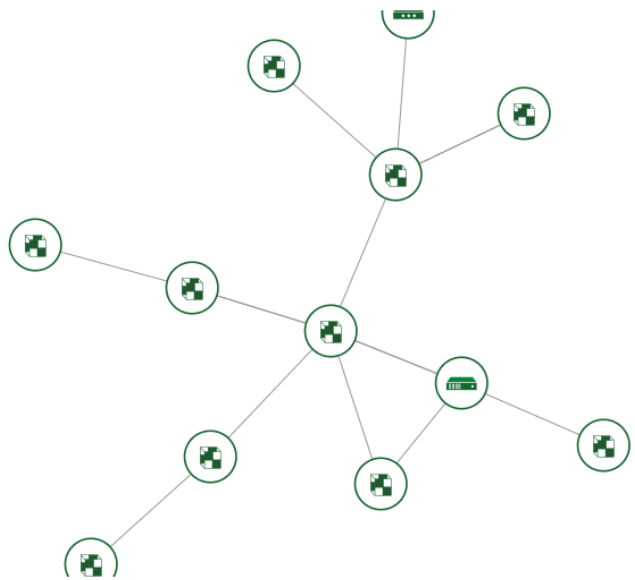
Name	Service
nova	compute
neutron	network
cinderv2	volumev2
novav3	computev3
swift_s3	s3
glance	image
ceilometer	metering
cinder	volume
nova_ec2	ec2
heat	orchestration
swift	object-store
keystone	identity (native backend)



Stack Detail: lb_stacker

Topology Overview Resources Events

lb_stacker
Create Complete
Create Complete



Alarm ID	Name	State	Enabled	Continuous	Alarm condition	Time constraints
847f5259-0bd6-4b31-9af2-0da4c7671c8f	lb_stacker-cpu_alarm_high-bjppy2a64onj	insufficient data	True	False	cpu_util > 50.0 during 1 x 60s	None
8ad30ac0-4712-45b8-84ef-44f263890095	lb_stacker-cpu_alarm_low-5ljn4s6dp7on	insufficient data	True	False	cpu_util < 15.0 during 1 x 600s	None

Period	Period Start	Period End	Max	Min	Avg	Sum	Count	Duration	Duration Start	Duration End
0	2015-03-12T14:36:02	2015-03-12T14:36:02	38.22909699	7.15833333333	24.8135914798	4962.71829597	200	493465.0	2015-03-12T14:36:02	2015-03-18T07:40:27

Template OS Linux: Available memory	Triggers (1)	vm.memory.size[available]	60	7	365
Template OS Linux: Checksum of /etc/passwd	Triggers (1)	vs.file.cksum[etc/passwd]	3600	7	365
Template OS Linux: Context switches per second		system.cpu.switches	60	7	365
Template OS Linux: CPU softirq time		system.cpu.util[,softirq]	60	7	365
Template OS Linux: CPU steal time		system.cpu.util[,steal]	60	7	365
Template OS Linux: CPU system time		system.cpu.util[,system]	60	7	365
Template OS Linux: CPU user time		system.cpu.util[,user]	60	7	365

Host name

Visible name

Groups In groups

New group

Agent interfaces

IP address



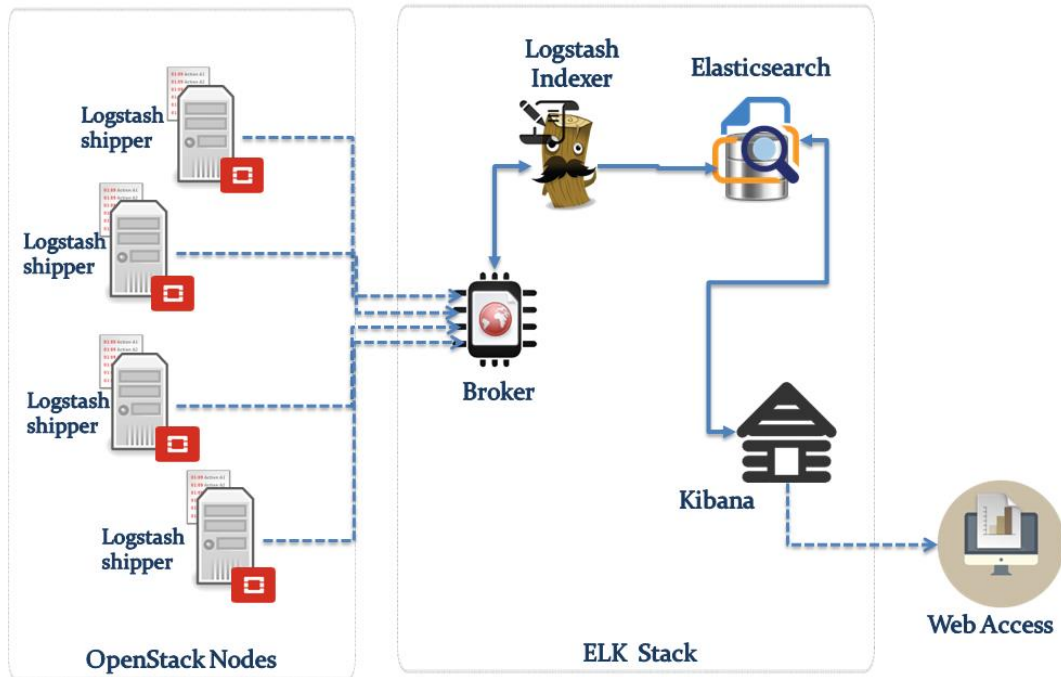
[Add](#)

Template OS Linux: Available memory	Triggers (1)	vm.memory.size[available]	60	7	365	Zabbix agent (active)	Memory
Template OS Linux: Checksum of /etc/passwd	Triggers (1)	vfs.file.cksum[etc/passwd]	3600	7	365	Zabbix agent	Security
Template OS Linux: Context switches per second		system.cpu.switches	60	7	365	Zabbix agent	CPU, Performance
Template OS Linux: CPU softirq time		system.cpu.util[,softirq]	60	7	365	Zabbix agent (active)	CPU, Performance
Template OS Linux: CPU steal time		system.cpu.util[,steal]	60	7	365	Zabbix agent (active)	CPU, Performance
Template OS Linux: CPU system time		system.cpu.util[,system]	60	7	365	Zabbix agent (active)	CPU, Performance
Template OS Linux: CPU user time		system.cpu.util[,user]	60	7	365	Zabbix agent (active)	CPU, Performance

State	Enabled	Continuous	Alarm condition
alarm	True	False	cpu_util > 50.0 during 1 x 60s
ok	True	False	cpu_util < 15.0 during 1 x 600s

Severity	Status	Info	Last change 	Age	Acknowledged	Host	Name
High			30 Mar 2015 19:53:06	56s	Acknowledge (1)	cc01	CPU Load High on cc01
Information			30 Mar 2015 19:43:23	10m 39s	Acknowledged	cc01	cc01 has just been restarted

Chapter 10: Keeping Track for Logs – Centralizing Logs with Logstash



kibana Discover Visualize Dashboard Settings

Indices Advanced Objects About

Index Patterns

Warning No default index pattern. You must select or create one to continue.

Configure an index pattern

In order to use Kibana you must configure at least one index pattern. Index patterns are used to identify the Elasticsearch index to run search and analytics against. configure fields.

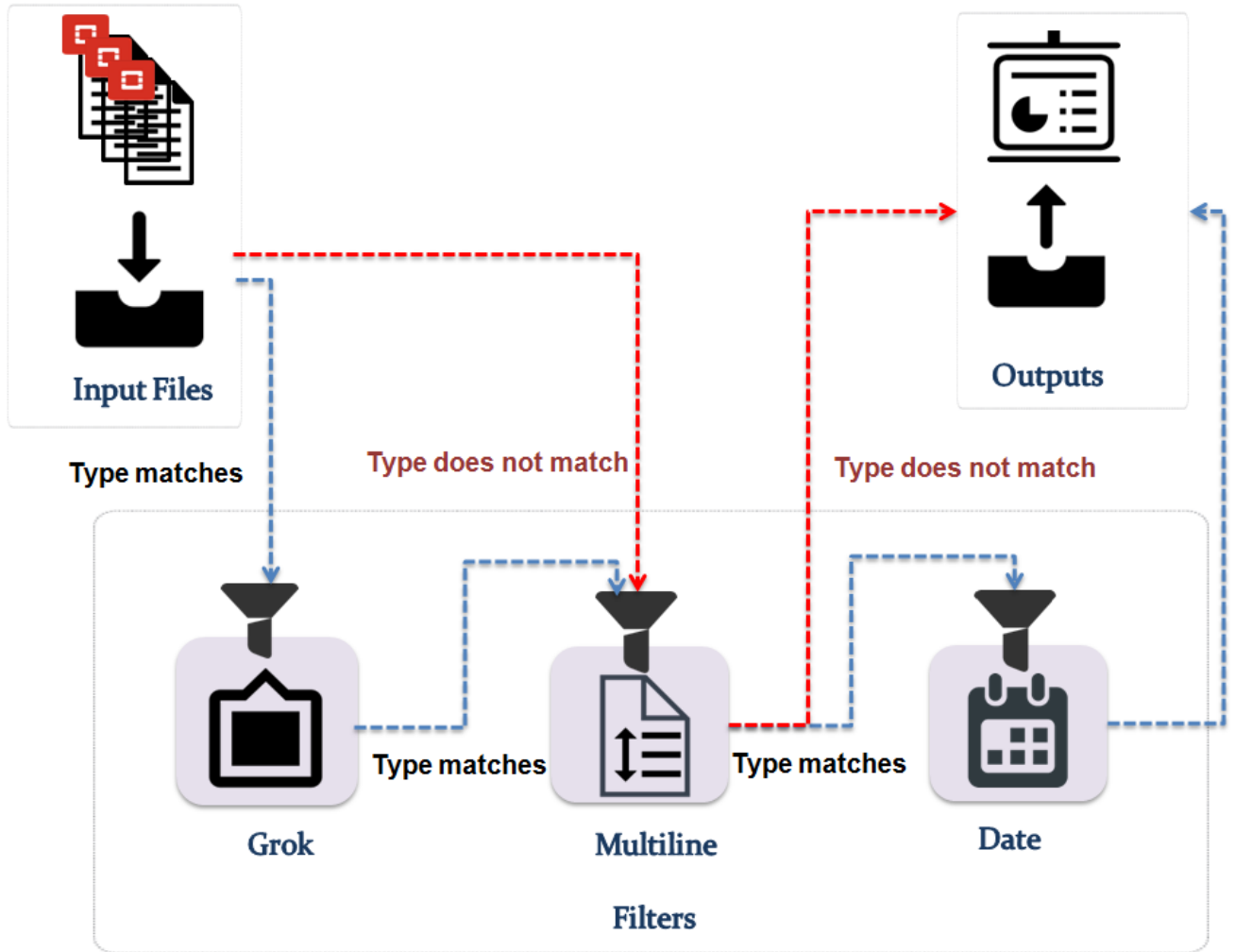
Index contains time-based events
 Use event times to create index names

Index name or pattern

Patterns allow you to define dynamic index names using * as a wildcard. Example: logstash-*

logstash-*

Unable to fetch mapping. Do you have indices matching the pattern?



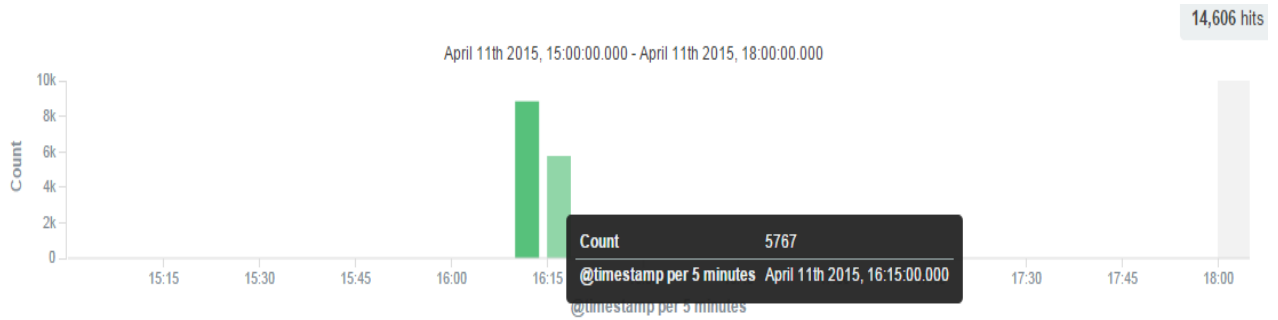
Index name or pattern

Patterns allow you to define dynamic index names using * as a wildcard. Example: logstash-*

logstash-*

Time-field name ⓘ refresh fields

@timestamp



```

t message  QQ 2015-04-12 20:51:42.833 2691 CRITICAL ceilometer [-] ConnectionFailure: could not connect to 192.168.120.250:27017: [Errno 101] ENETU
NREACH
2015-04-12 20:51:42.833 2691 TRACE ceilometer Traceback (most recent call last):
2015-03-27 20:11:57.889 8919 TRACE ceilometer File "/usr/lib/python2.6/site-packages/ceilometer/api/app.py", line 126, in build_ser
ver
2015-04-12 20:51:42.833 2691 TRACE ceilometer File "/usr/bin/ceilometer-api", line 10, in <module>
2015-04-12 20:51:42.833 2691 TRACE ceilometer sys.exit(api())
2015-03-27 20:11:57.889 8919 TRACE ceilometer root = VersionSelectorApplication()
2015-04-12 20:51:42.833 2691 TRACE ceilometer File "/usr/lib/python2.6/site-packages/ceilometer/cli.py", line 96, in api
2015-03-27 20:11:57.889 8919 TRACE ceilometer File "/usr/lib/python2.6/site-packages/ceilometer/api/app.py", line 102, in __init__
2015-04-12 20:51:42.833 2691 TRACE ceilometer srv = app.build_server()
2015-04-12 20:51:42.833 2691 TRACE ceilometer File "/usr/lib/python2.6/site-packages/ceilometer/api/app.py", line 126, in build_ser

```

type: "openstack" AND component: "glance" Q 📄 📄 📄

type: "openstack" Actions ▶

logstash.*

Selected Fields

- ⌵ component
- ⌵ file
- ⌵ type

Fields ⚙️

Popular fields

- 🕒 @timestamp
- ⌵ @version
- ⌵ _id
- ⌵ index

April 12th 2015, 00:00:00.000 - April 13th 2015, 16:17:55.000

Time Interval	Count
2015-04-12 22:00	35
2015-04-13 04:00	8

@timestamp per hour

Time	file	type	component
▶ April 12th 2015, 21:04:06.627	/var/log/glance/openstack-glance-registry-startup.log	openstack	glance

logstash-*

metrics

▼ Slice Size

Aggregation

Count ▼

◀ Advanced

buckets

▼ Split Slices ✖

Aggregation

Significant Terms ▼

Field

component.raw ▼

Size

4 ▼

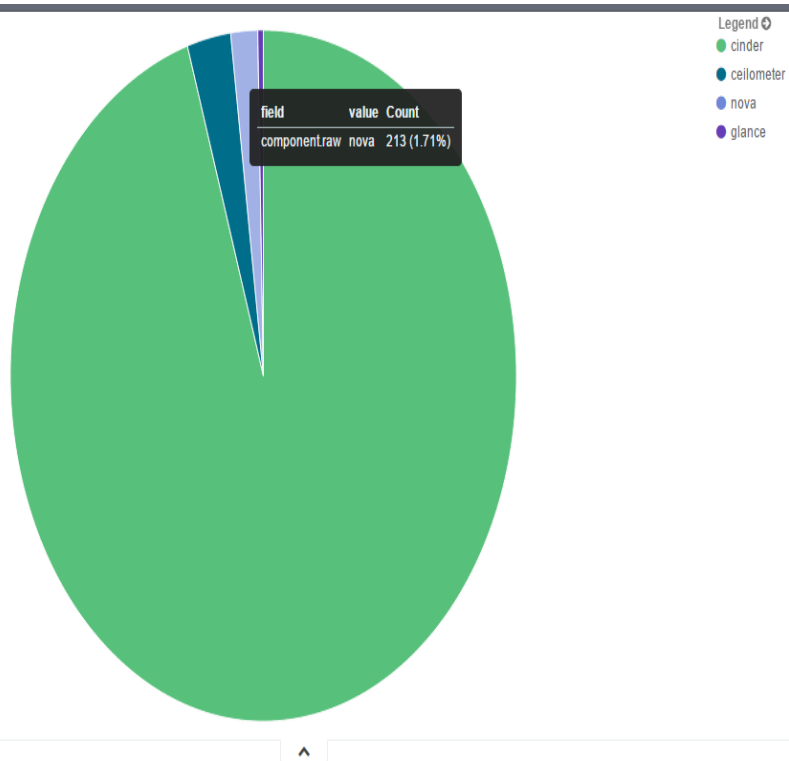
◀ Advanced

⚡ Add Sub Aggregation

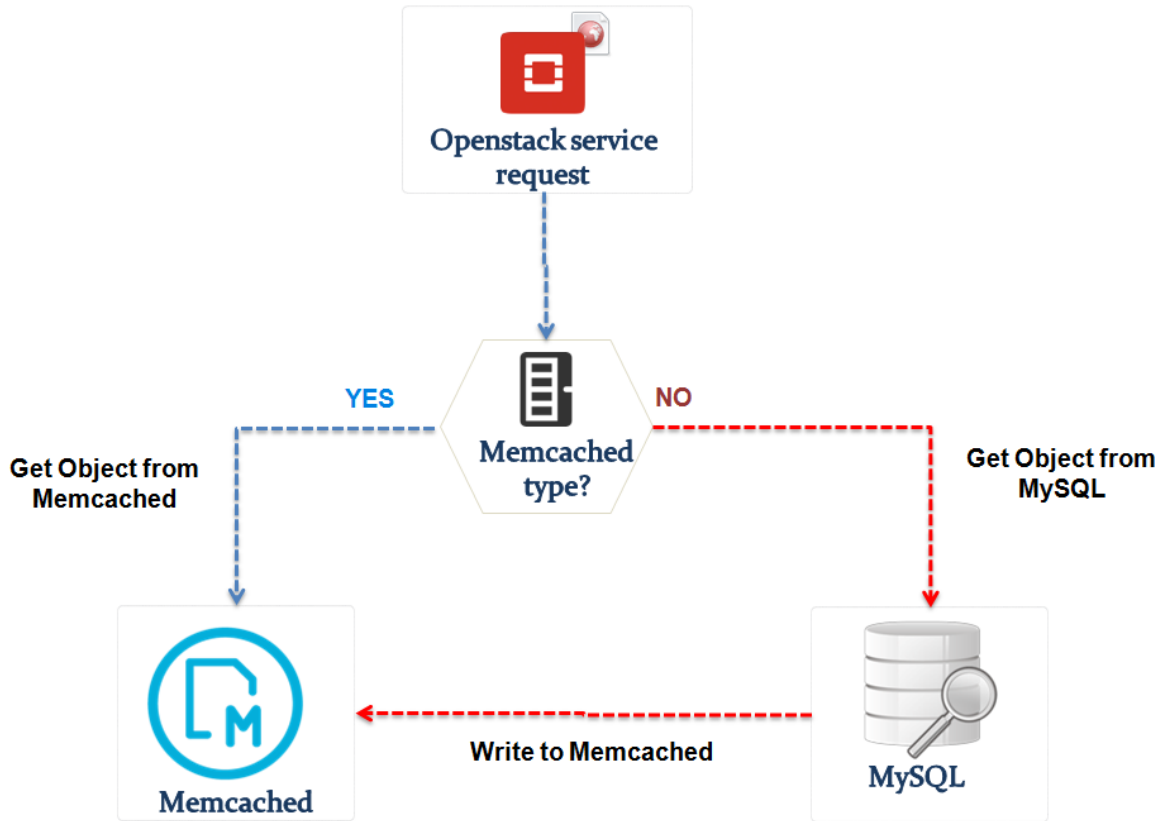
view options ▶

Apply

Discard



Chapter 11: Tuning OpenStack Performance – Advanced Configuration



COMMAND	PID	USER	FD	TYPE	DEVICE	SIZE/OFF	NODE	NAME
memcached	30172	memcached	26u	IPv4	25088862	0t0	TCP	*:memcache (LISTEN)
memcached	30172	memcached	27u	IPv4	25088864	0t0	UDP	*:memcache
memcached	30172	memcached	28u	IPv4	53276131	0t0	TCP	localhost:memcache->localhost:35610 (ESTABLISHED)
memcached	30172	memcached	126u	IPv4	53266723	0t0	TCP	localhost:memcache->localhost:35333 (ESTABLISHED)
keystone-	31509	keystone	12u	IPv4	53276128	0t0	TCP	localhost:35610->localhost:memcache (ESTABLISHED)
keystone-	31509	keystone	16 <u>8</u> u	IPv4	53266720	0t0	TCP	localhost:35333->localhost:memcache (ESTABLISHED)

Every 1.0s: memcached-tool 127.0.0.1:1

#127.0.0.1:11211	Field	Value
	accepting_conns	1
	auth_cmds	0
	auth_errors	0
	bytes	695422
	bytes_read	785559
	bytes_written	1454943
	cas_badval	0
	cas_hits	0
	cas_misses	0
	cmd_flush	0
	cmd_get	282
	cmd_set	239
	conn_yields	0
	connection_structures	29
	curr_connections	7
	curr_items	80
	decr_hits	0
	decr_misses	0
	delete_hits	88
	delete_misses	0
	evictions	0
	get_hits	165
	get_misses	117
	incr_hits	0
	incr_misses	0
	limit_maxbytes	4294967296
	listen_disabled_num	0
	pid	8349
	pointer_size	64
	rusage_system	0.341948
	rusage_user	0.015997
	threads	4
	time	1429872008
	total_connections	142
	total_items	209
	uptime	888
	version	1.4.4

uuid	created_at	name	status	active
dcd3bdef-06f9-4101-89ee-2db779f0c912	2015-04-21 19:39:35.311337	existing	deploy->finished	

Using deployment: dcd3bdef-06f9-4101-89ee-2db779f0c912

~/rally/openrc was updated

keystone endpoints are valid and following services are available:

services	type	status
ceilometer	metering	Available
cinder	volume	Available
cinderv2	volumev2	Available
glance	image	Available
heat	orchestration	Available
keystone	identity	Available
neutron	network	Available
nova	compute	Available
nova_ec2	ec2	Available
novav3	computev3	Available
swift	object-store	Available
swift_s3	s3	Available

Preparing input task

Input task is:

GlanceImages.create_image_and_boot_instances:

```
-
args:
  image_location: "http://download.cirros-cloud.net/0.3.1/cirros-0.3.1-x86_64-disk.img"
  container_format: "bare"
  disk_format: "qcow2"
  flavor:
    name: "m1.nano"
  number_instances: 2
runner:
  type: "constant"
  times: 10
  concurrency: 2
context:
  users:
    tenants: 3
    users_per_tenant: 5
```

Task 6909ee21-d6d7-4dbb-a299-0db9a916f2a1: started

Benchmarking... This can take a while...

Task 6909ee21-d6d7-4dbb-a299-0db9a916f2a1: running

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
3972	qemu	20	0	466m	23m	5812	R	50.2	0.8	0:07.22	qemu-kvm
3961	qemu	20	0	466m	25m	5812	R	49.9	0.9	0:06.85	qemu-kvm
3425	qemu	20	0	1016m	110m	2904	R	26.9	3.8	0:29.88	qemu-kvm
3431	qemu	20	0	954m	112m	2888	R	26.6	3.9	0:30.34	qemu-kvm
1413	qemu	20	0	1337m	30m	2332	S	22.3	1.1	1:15.08	qemu-kvm
1626	qemu	20	0	1086m	29m	2340	R	22.3	1.0	1:38.10	qemu-kvm
2663	qemu	20	0	760m	29m	2344	S	22.3	1.0	1:18.74	qemu-kvm
5566	qemu	20	0	1531m	16m	1900	R	22.3	0.6	3990:48	qemu-kvm
2313	qemu	20	0	1538m	27m	2356	S	21.6	0.9	1:11.18	qemu-kvm
2322	qemu	20	0	1600m	27m	2332	R	21.6	0.9	1:13.28	qemu-kvm
2669	qemu	20	0	1274m	32m	2356	S	21.6	1.1	1:17.17	qemu-kvm
1632	qemu	20	0	2535m	75m	2380	S	21.3	2.6	0:56.68	qemu-kvm
1416	qemu	20	0	1603m	26m	2280	R	20.9	0.9	1:57.59	qemu-kvm

Host	Name	Image Name	IP Address	Size	Status	Task	Power State	Up
os.packerpub	rally_novaserver_tswpivzwnokzrch	cirros-x86_64		m1.nano 128MB RAM 1 VCPU 1.0GB Disk	Error	None	No State	1 m
os.packerpub	rally_novaserver_dboogciwacolzpbj	cirros-x86_64		m1.nano 128MB RAM 1 VCPU 1.0GB Disk	Error	None	No State	1 minute

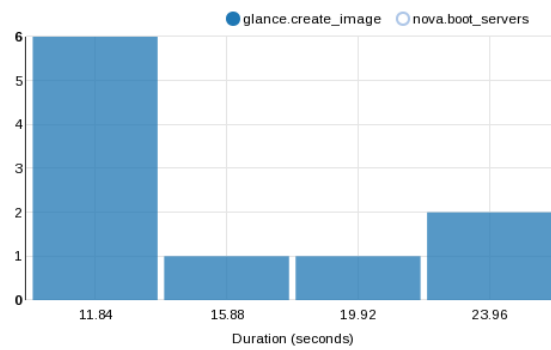
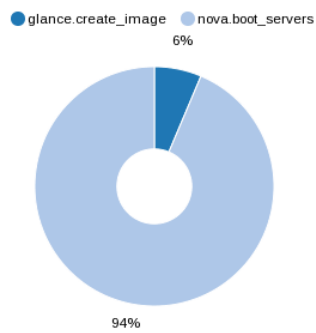
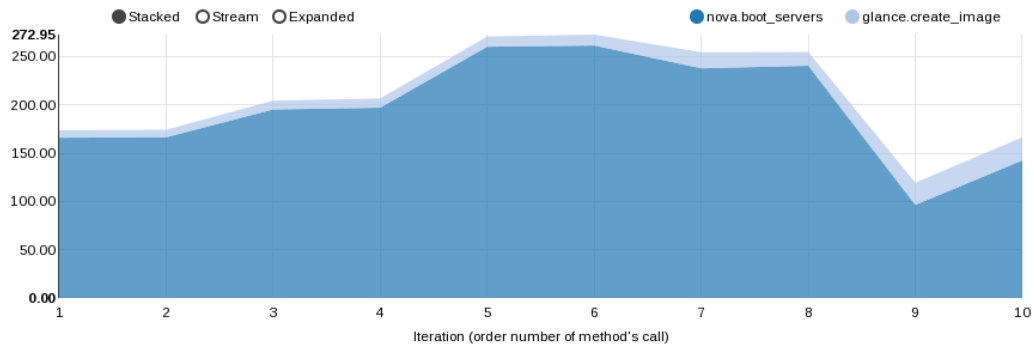
Error: Failed to launch instance "rally_novaserver_tswpivzwnokzrch". Please try again later [Error: No valid host was found.].

Edit Instance More ▾

action	min (sec)	avg (sec)	max (sec)	90 percentile	95 percentile	success	count
glance.create_image	7.799	13.369	23.956	23.024	23.49	100.0%	10
nova.boot_servers	96.466	196.482	261.603	260.501	261.052	100.0%	10
total	119.387	209.852	272.95	271.119	272.034	100.0%	10

Load duration: 1073.03213596
Full duration: 1138.09469104

Charts for each Atomic Action



```

+-----+-----+-----+-----+-----+-----+-----+-----+
| action | min (sec) | avg (sec) | max (sec) | 90 percentile | 95 percentile | success | count |
+-----+-----+-----+-----+-----+-----+-----+-----+
| total | 0.623    | 51.195    | 80.672    | 74.937        | 76.615        | 96.1%  | 560   |
+-----+-----+-----+-----+-----+-----+-----+-----+
Load duration: 84.9917628765
Full duration: 103.821238041

```

Authenticate.keystone (103.821s)

Overview Failures Input task

Load duration: 84.992 s Full duration: 103.821 s Iterations: 560 Failures: 22

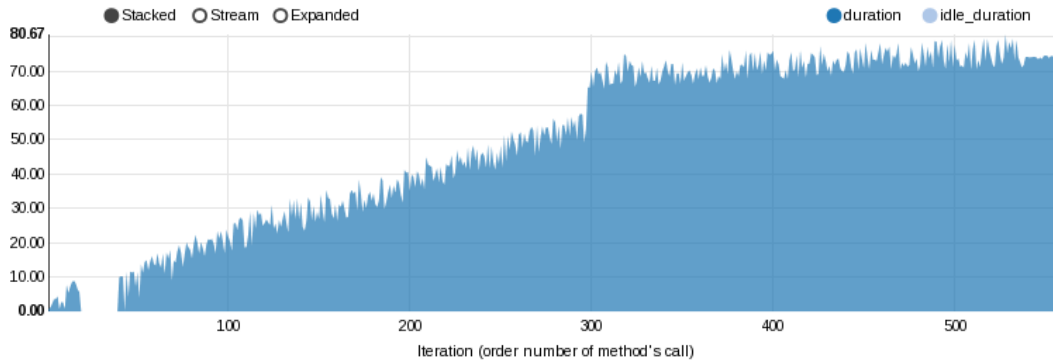
Service-level agreement

Criterion	Detail	Success
max_avg_duration	Maximum average duration of one iteration 51.19s <= 5.00s - Failed	False
aborted_on_sla	Task was aborted due to SLA failure(s).	False

Total durations

Action	Min (sec)	Avg (sec)	Max (sec)	90 percentile	95 percentile	Success	Count
total	0.623	51.195	80.672	74.937	76.615	96.1%	560

Charts for the Total durations



Authenticate.keystone (283.162s)

Overview Failures Input task

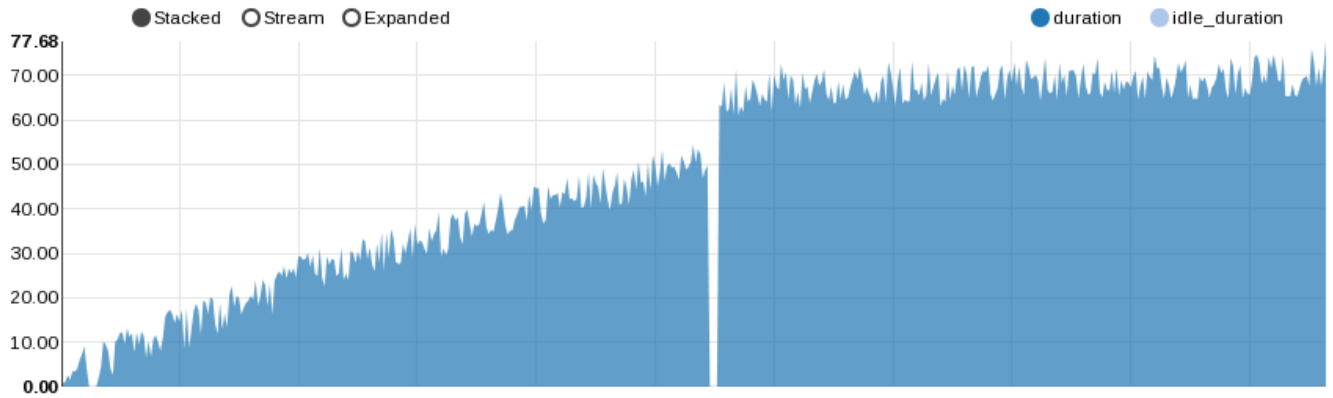
Benchmark failures (8 iterations failed)

Iteration	Exception type	Exception message
▶ 11	ConnectionRefused	Unable to establish connection to http:
▶ 12	ConnectionRefused	Unable to establish connection to http:
▶ 13	ConnectionRefused	Unable to establish connection to http:
▶ 14	ConnectionRefused	Unable to establish connection to http:

Total durations

Action	Min (sec)	Avg (sec)	Max (sec)	90 percentile	95 percentile	Success	Count
total	0.911	48.502	77.68	71.071	72.187	98.5%	532

Charts for the Total durations



▶ 272	AuthorizationFailure	Authorization Failed: An unexpected error prevented the server from fulfilling your request. (HTTP 500)
▶ 273	AuthorizationFailure	Authorization Failed: An unexpected error prevented the server from fulfilling your request. (HTTP 500)
▶ 274	AuthorizationFailure	Authorization Failed: An unexpected error prevented the server from fulfilling your request. (HTTP 500)
▶ 275	AuthorizationFailure	Authorization Failed: An unexpected error prevented the server from fulfilling your request. (HTTP 500)

OS error :TRACE keystone.common.wsgi OSError: [Errno 24] Too many open files

id	name	enabled
287df4ce5da548ca80398646eef51b7b	admin	True
c4569307e3974482a9bb254b844d2aa6	ctx_rally_31f8445d-2d17-4660-b22d-54d6060a9dd4_tenant_0	True
71b811883c0941149577ec6d218e4ac5	ctx_rally_31f8445d-2d17-4660-b22d-54d6060a9dd4_tenant_1	True
9a1ac9bc183f477aa9b5b8d6cf86c88c	ctx_rally_31f8445d-2d17-4660-b22d-54d6060a9dd4_tenant_2	True
df747866f73d4afb9e54dc579ff1e975	ctx_rally_31f8445d-2d17-4660-b22d-54d6060a9dd4_tenant_3	True
df3948c2380145cf890c414851207c3a	ctx_rally_31f8445d-2d17-4660-b22d-54d6060a9dd4_tenant_4	True
0fd4aa2c150d434d88f0ba8de9bc75b8	ctx_rally_39501331-e98b-451b-b152-f5b315fbd5e_tenant_0	True
9e2140be993c46ccb4ca47d08e8f2058	ctx_rally_39501331-e98b-451b-b152-f5b315fbd5e_tenant_1	True
d8a26bfbe79a4c72b0421825b757546d	ctx_rally_39501331-e98b-451b-b152-f5b315fbd5e_tenant_2	True
58989e9f1d464b3aa7be00a969958c9c	services	True

Service-level agreement

Criterion	Detail	Success
max_seconds_per_iteration	Maximum seconds per iteration 72.02s <= 10.00s - Failed	False
failure_rate	Failure rate criteria 0.00% <= 0.93% <= 1.00% - Passed	True
max_avg_duration	Maximum average duration of one iteration 47.55s <= 50.00s - Passed	True
aborted_on_sla	Task was aborted due to SLA failure(s).	False

Total durations

Action	Min (sec)	Avg (sec)	Max (sec)	90 percentile	95 percentile	Success	Count
total	1.117	47.547	72.019	68.69	69.87	99.1%	536

```
{file_descriptors,[{total_limit,924},  
                  {total_used,91},  
                  {sockets_limit,829},  
                  {sockets_used,89}]},
```

```
{file_descriptors,[{total_limit,3996},  
                  {total_used,57},  
                  {sockets_limit,3594},  
                  {sockets_used,55}]},
```