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OpenStack HA 架構設計及實務

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Agenda

- JUJU + MAAS
- High Availability Design
- OpenStack Components with HA
- Live Maintenance and Upgrade
- ITRI's Cloud OS 2.1
- Q & A

JUJU + MAAS

- **JUJU:** Model, build and scale your environments on any cloud.
- **MAAS:** Metal as a Service (MAAS) brings the language of the cloud to physical servers. It makes it easy to set up the hardware on which to deploy any service that needs to scale up and down dynamically

Install MAAS 1.8.0

- Download Ubuntu 14.04 ISO and install on a server.
- Setup hostname, hosts entry, networking, ssh server.
- `add-apt-repository ppa:maas-maintainers/stable`
- `apt-get update`
- `apt-get dist-upgrade`
- `apt-get install maas`
- Use browser to access <http://server-ip/MAAS>
- Configure using browser and command line.

Browser address bar: <http://10.204.1.1/MAAS/#/nodes>

Navigation tabs: File, Edit, View, Favorites, Tools, Help

Search bar: Google openstack hacluster keystone juju

MAAS navigation menu: MAAS, Nodes, Clusters, Images, Zones, Networks, Settings

User: root

SM-1 MAAS

7 Nodes | 0 Devices

[Add Hardware](#)

Filter by

- Status
 - Deployed (5)
 - Ready (2)
- Owner
- Storage Tags
- Networks
- Zones

Search nodes

<input type="checkbox"/> <u>FQDN</u> MAC	Power	Status	Owner	Cores	RAM (GiB)	Disks	Storage (GB)
<input type="checkbox"/> agile-soup.maas		Deployed	root	24	16	1	1998.0
<input type="checkbox"/> crisp-experience.maas		Deployed	root	24	16	1	2000.0
<input type="checkbox"/> orange-wheel.maas		Ready		24	16	1	2000.0
<input type="checkbox"/> shimmering-cry.maas		Deployed	root	24	16	1	2000.0
<input type="checkbox"/> single-string.maas		Ready		24	16	1	1998.0
<input type="checkbox"/> strict-cars.maas		Deployed	root	24	16	1	1998.0
<input type="checkbox"/> whole-hate.maas		Deployed	root	24	16	1	2000.0

MAAS Version 1.8.0+bzr4001-0ubuntu2 (trusty1) [View release notes](#) | [View documentation](#)

ubuntu®

Browser window showing the MAAS (Machine Access and Management) interface. The URL is `http://10.204.1.1/MAAS/#/node/node-f1cf6dba-34e6`. The page title is "openstack hacluster keystone juju". The user is logged in as "root".

The interface displays the "Nodes" tab for the node "agile-soup.maas". The node status is "Deployed" and "Power on" (checked). A "Take action" button is visible.

A modal dialog is open for configuring the power settings. The "Power" section is active, showing a list of power types. The "Power type" dropdown is open, displaying the following options:

- Select your power type
- American Power Conversion (APC) PDU
- Cisco UCS Manager
- Digital Loggers, Inc. PDU
- HP Moonshot - iLO Chassis Manager
- HP Moonshot - iLO4 (IPMI)
- IPMI
- Intel AMT
- Microsoft OCS - Chassis Manager
- SeaMicro 15000
- Sentry Switch CDU
- VMWare
- Virsh (virtual systems)
- Wake-on-LAN

The "Power type" dropdown is currently set to "IPMI". The "Power driver" is set to "Microsoft OCS - Chassis Manager". The "Power user" is set to "Virsh (virtual systems)". The "Power password" is set to "4lAOvmtZg38". The "Power MAC" field is empty.

The "Network" section is partially visible at the bottom of the page.

Tips for MAAS

- Configuration for MAAS to work is quite involving and a lot of place could go wrong.
- If ubuntu image import failed, you can follow the guide to setup a local mirror and point your maas boot-source to your local mirror to speed up the process. <https://maas.ubuntu.com/docs/sstreams-mirror.html>
- MAAS could also control VMs using libvirt. Please follow the guide: <http://askubuntu.com/questions/292061/how-to-configure-maas-to-be-able-to-boot-virtual-machines>

Install JUJU 1.24.2

- `add-apt-repository ppa:juju/stable`
- `apt-get update`
- `apt-get install juju-quickstart`
- `juju-quickstart` (setup with MAAS type, URL, and credentials)
- `Juju-status juju-gui` (check out the IP of juju-gui)
- Point browser to <http://juju-gui-ip/> and use juju

Browser window showing the Juju MAAS UI interface. The address bar displays `https://10.204.1.4/inspector/percona`. The page title is "percona" with the URL `cs:trusty/percona-cluster-24`.

The interface includes a sidebar on the left with the Juju logo, a search bar, and a list of units. The main area displays a service graph with components: percona, hacluster, keystone, rabbit, and nova-clou... (partially visible).

The sidebar shows the following details:

- 3 units
- 3 running units
- Units list:
 - ☐ percona/13
 - ☐ percona/14
 - ☐ percona/15
- Remove button
- Expose this service? (toggle)
- Destroy service (trash icon) | Change version (refresh icon)
- 0 changes

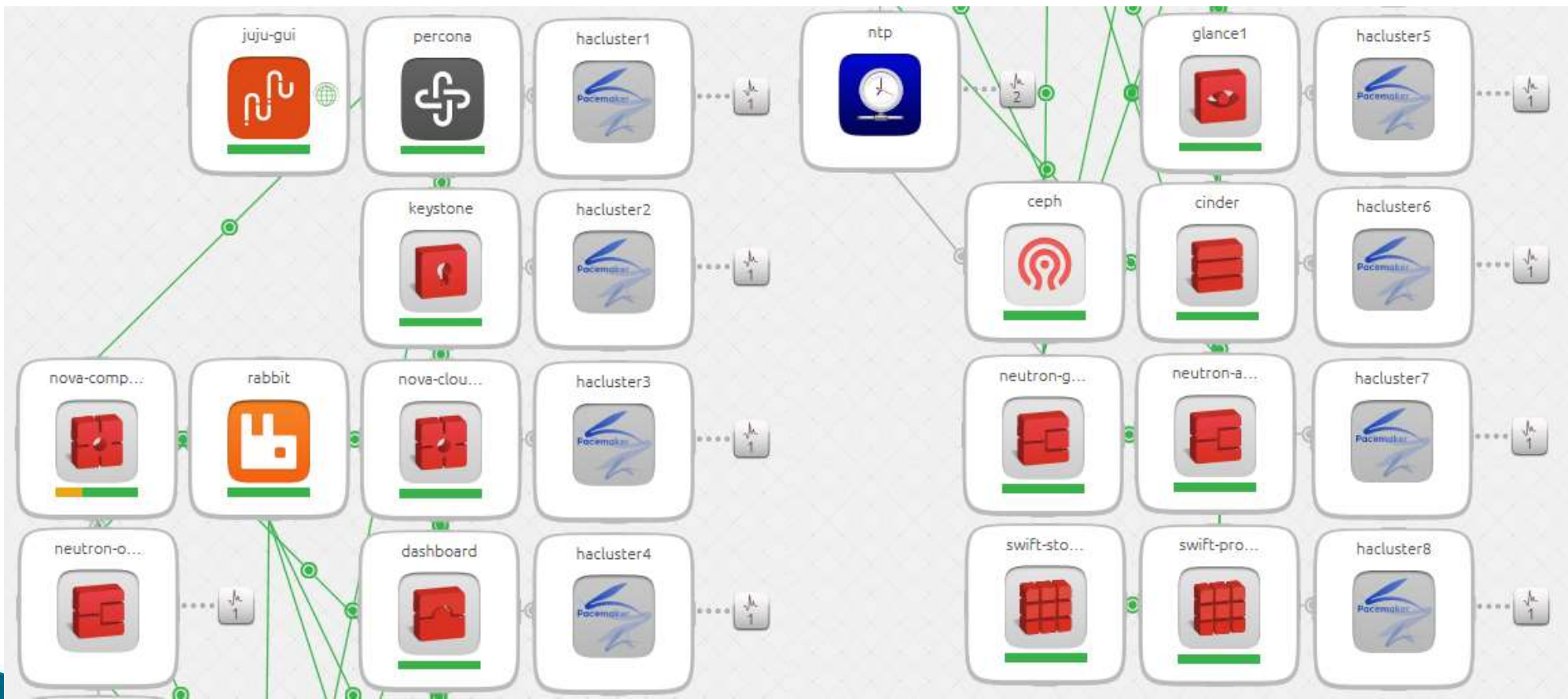
The main area shows a service graph with components: percona, hacluster, keystone, rabbit, and nova-clou... (partially visible). The graph shows connections between these services.

At the bottom right, there are buttons for Import, Export, and Commit.

Help! Juju Setup Failed

- Juju quickstart will create juju configuration under `~/.juju` directory. Sometime during juju bootstrap, deployment was taken longer than usual.
- You can modify `~/.juju/environments.yaml` and add “bootstrap-timeout: 3600” to make the juju bootstrap wait longer.
- What if install failed and you can remove your juju environment using “juju destroy-environment”?
- The last resort is to remove the `~/.juju` directory and do juju bootstrap again.

High Availability Design



OpenStack HA Components



hacluster



glance



quantum-gateway



percona-cluster



swift-proxy



quantum-api



keystone



swift-storage



quantum-openvswitch



nova-cloud-controller



cinder



ntp



rabbitmq-server



ceph



openstack-dashboard



ceph-osd

Percona + hacluster







- Percona XtraDB Cluster – Active/Active MySQL
- Hacluster: Corosync Cluster Engine – membership, messaging and quorum
- Prepare 3 machines in MAAS, use JUJU GUI to add 3 machines (for 3 controllers)
- Deploy 1 unit of percona charm into each machines' lxc container
- Deploy hacluster and connect percona

Install Percona



```
percona.cfg
percona:
  vip: '10.204.128.1'
  vip_cidr: 16
  root-password: ccma
  sst-password: cluster
  access-network: 10.204.0.0/16
hacluster:
  corosync_transport: multicast
  corosync_mcastaddr: 226.94.1.1

juju deploy --config percona.cfg percona-cluster
percona --to lxc:0
juju add-unit percona --to lxc:6
juju add-unit percona --to lxc:7
juju deploy --config percona.cfg hacluster
juju add-relation percona hacluster
```

maas (5)	1 container , 2 units
0 - State service Hardware details not available  	Root container  juju-gui/0
6 24xGHz, 16.0GB, 	0/lxc/19  percona/13
7 24xGHz, 16.0GB, 	
8 24xGHz, 16.0GB,	
9 24xGHz, 16.0GB,	

JUJU Status

```
juju status --format tabular percona
```

```
[Services]
```

NAME	STATUS	EXPOSED	CHARM
hacluster		false	cs:trusty/hacluster-20
percona	unknown	false	cs:trusty/percona-cluster-24

```
[Units]
```

ID	WORKLOAD-STATE	AGENT-STATE	VERSION	MACHINE	PORTS	PUBLIC-ADDRESS	MESSAGE
percona/16	unknown	idle	1.24.2	0/lxc/21		10.204.1.132	
hacluster/11	unknown	idle	1.24.2			10.204.1.132	
percona/17	unknown	idle	1.24.2	6/lxc/2		10.204.1.175	
hacluster/10	unknown	idle	1.24.2			10.204.1.175	
percona/18	unknown	idle	1.24.2	7/lxc/2		10.204.1.177	
hacluster/12	unknown	idle	1.24.2			10.204.1.177	

```
[Machines]
```

ID	STATE	VERSION	DNS	INS-ID
		SERIES	HARDWARE	
0	started	1.24.2	whole-hate.maas	/MAAS/api/1.0/nodes/node-e42fe4dc-34e6-11e5-b033-0cc47a447444/
3	trusted	trusty	arch=amd64 cpu-cores=24 mem=16384M	
6	started	1.24.2	agile-soup.maas	/MAAS/api/1.0/nodes/node-f1cf6dba-34e6-11e5-8057-0cc47a447444/
7	trusted	trusty	arch=amd64 cpu-cores=24 mem=16384M	
7	started	1.24.2	shimmering-cry.maas	/MAAS/api/1.0/nodes/node-e43904fe-34e6-11e5-aff6-0cc47a447444/
6	trusted	trusty	arch=amd64 cpu-cores=24 mem=16384M	

Test MySQL Cluster

```
mysql --host 10.204.128.1 --user root -p
```

```
Enter password:
```

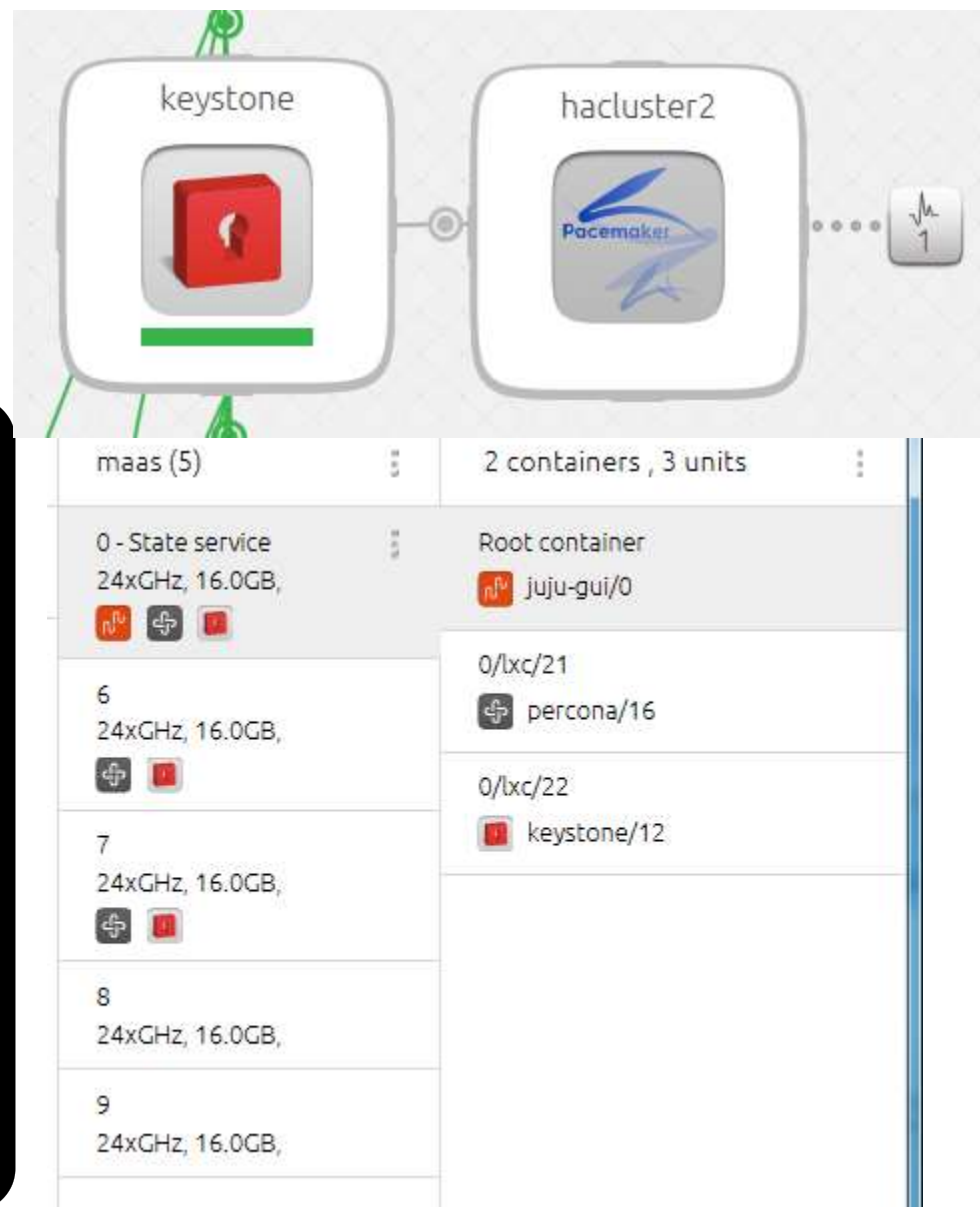
```
mysql> SHOW STATUS LIKE 'wsrep_%';
```

Variable_name	Value
wsrep_local_state_uuid	c328405f-3c9a-11e5-85a7-36fda724abfc
wsrep_protocol_version	4
wsrep_last_committed	157
wsrep_incoming_addresses	10.204.1.132:3306,10.204.1.177:3306,10.204.1.175:3306
wsrep_cluster_conf_id	3
wsrep_cluster_size	3
wsrep_cluster_state_uuid	c328405f-3c9a-11e5-85a7-36fda724abfc
wsrep_cluster_status	Primary
wsrep_connected	ON
wsrep_local_bf_aborts	0
wsrep_local_index	2
wsrep_provider_name	Galera
wsrep_provider_vendor	Codership Oy <info@codership.com>
wsrep_provider_version	2.8(r165)
wsrep_ready	ON

Install Keystone

```
keystone.cfg
keystone:
  openstack-origin: 'cloud:trusty-kilo'
  vip: '10.204.128.2'
  vip_cidr: 16
hacluster2:
  corosync_transport: multicast
  corosync_mcastaddr: 226.94.1.2

juju deploy keystone --to lxc:0
juju add-unit keystone --to lxc:6
juju add-unit keystone --to lxc:7
juju add-relation keystone percona
juju deploy --config keystone.cfg hacluster
hacluster2
juju add-relation keystone hacluster2
```



Test Keystone

```
export OS_NO_CACHE='true'
export OS_TENANT_NAME='admin'
export OS_USERNAME='admin'
export OS_PASSWORD='openstack'
export OS_TOKEN='ccma-token'
export OS_AUTH_URL='http://10.204.128.2:5000/v2.0/'
export OS_AUTH_STRATEGY='keystone'
export OS_REGION_NAME='RegionOne'
export CINDER_ENDPOINT_TYPE='publicURL'
export GLANCE_ENDPOINT_TYPE='publicURL'
export KEYSTONE_ENDPOINT_TYPE='publicURL'
export NOVA_ENDPOINT_TYPE='publicURL'
export NEUTRON_ENDPOINT_TYPE='publicURL'
keystone catalog
Service: identity
```

+-----+-----+-----+		
Property	value	
+-----+-----+-----+		
adminURL	http://10.204.128.2:35357/v2.0	
id	54fd9afaca3f48588d8b6fceaa5e94a2	
internalURL	http://10.204.128.2:5000/v2.0	
publicURL	http://10.204.128.2:5000/v2.0	
region	RegionOne	
+-----+-----+-----+		

My JUJU Charm Stuck! Now What?

```
juju status --format tabular keystone/7
ID          WORKLOAD-STATE AGENT-STATE VERSION MACHINE PORTS PUBLIC-ADDRESS MESSAGE
keystone/7 error          idle      1.24.2  6/lxc/0  10.204.1.176 hook failed: "shared-
db-relation-changed" for percona:shared-db
```

- **Don't remove it. Remove won't work!**
- Try: `juju resolved keystone/7`
- If still not working, try resolved several times.
- After try several times without success, `juju ssh keystone/7` to look at the process with the “shared-db-relation-changed” keyword and kill the process. Then try resolved.
- If nothing works, `juju ssh keystone/7` and reboot the container
- The last resort: look at the error logs and debug from there

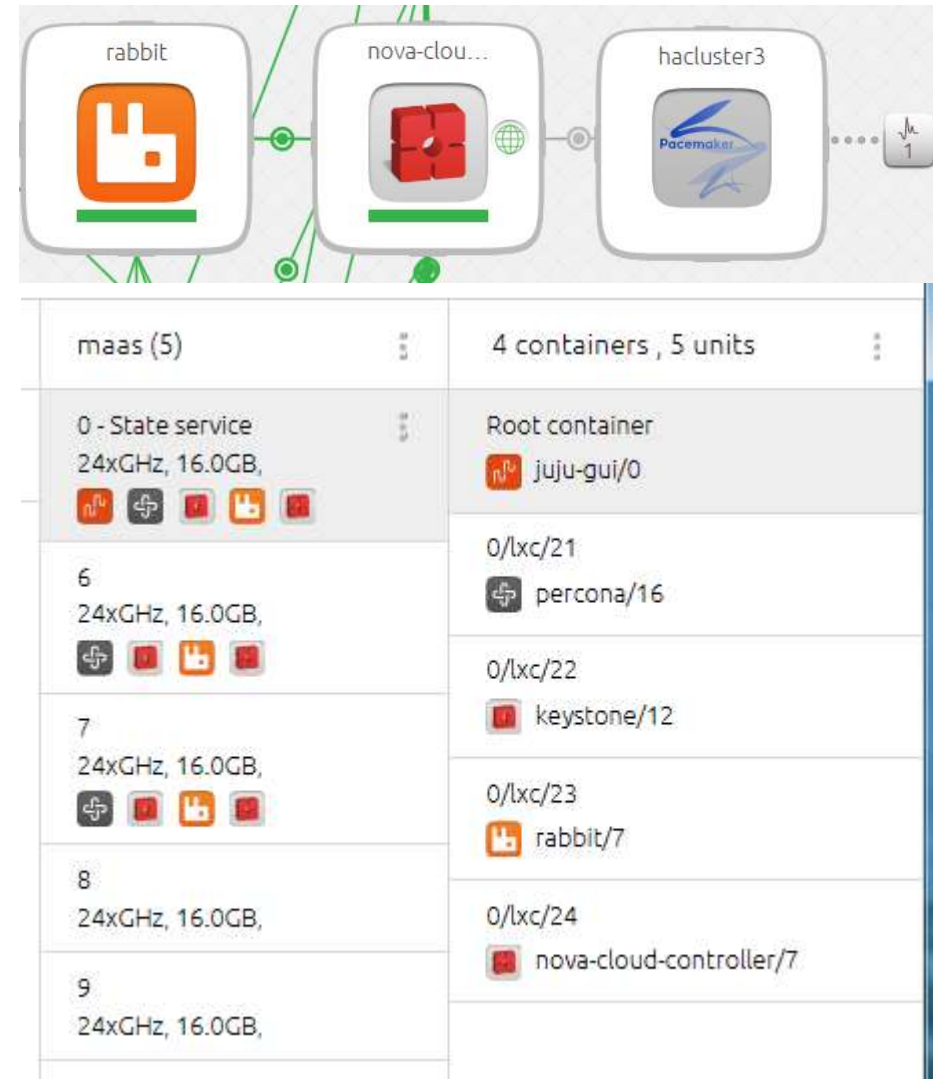


Install Rabbit & Nova

```
juju deploy --config rabbit.cfg rabbitmq-server
rabbit --to 0/lxc/19
juju set rabbit source="cloud:trusty-kilo"
juju add-unit rabbit --to 6/lxc/0
juju add-unit rabbit --to 7/lxc/0
```

```
nova-cloud-controller.cfg
nova-cloud-controller:
  openstack-origin: 'cloud:trusty-kilo'
  vip: '10.204.128.3'
  vip_cidr: 16
  network-manager: 'Neutron'
  quantum-security-groups: 'yes'
hacluster3:
  corosync_transport: multicast
  corosync_mcastaddr: 226.94.1.3
```

```
juju deploy --config nova-cloud-controller.cfg
nova-cloud-controller --to 0/lxc/19
juju add-unit nova-cloud-controller --to 6/lxc/0
juju add-unit nova-cloud-controller --to 7/lxc/0
juju add-relation nova-cloud-controller percona
juju add-relation nova-cloud-controller keystone
juju add-relation nova-cloud-controller rabbit
```



What we get so far?

```
cat novarc
#!/bin/sh
export OS_NO_CACHE='true'
export OS_TENANT_NAME='admin'
export OS_USERNAME='admin'
export OS_PASSWORD='openstack'
export OS_TOKEN='ubuntutesting'
export
OS_AUTH_URL='http://10.204.128.1:5000/v2
.0/'
export OS_AUTH_STRATEGY='keystone'
export OS_REGION_NAME='RegionOne'
export CINDER_ENDPOINT_TYPE='publicURL'
export GLANCE_ENDPOINT_TYPE='publicURL'
export
KEYSTONE_ENDPOINT_TYPE='publicURL'
export NOVA_ENDPOINT_TYPE='publicURL'
export NEUTRON_ENDPOINT_TYPE='publicURL'
source novarc
```

keystone catalog

Service: compute

+-----+-----+-----+-----+-----+-----+	
Property	Value
+-----+-----+-----+-----+-----+-----+	
adminURL	http://10.204.1.132:8774/v2/104b32dbf7384d8d9f04b95260eca674
id	8ce21dc2c038462bb0e27716c55641de
internalURL	http://10.204.1.132:8774/v2/104b32dbf7384d8d9f04b95260eca674
publicURL	http://10.204.1.132:8774/v2/104b32dbf7384d8d9f04b95260eca674
region	RegionOne
+-----+-----+-----+-----+-----+-----+	

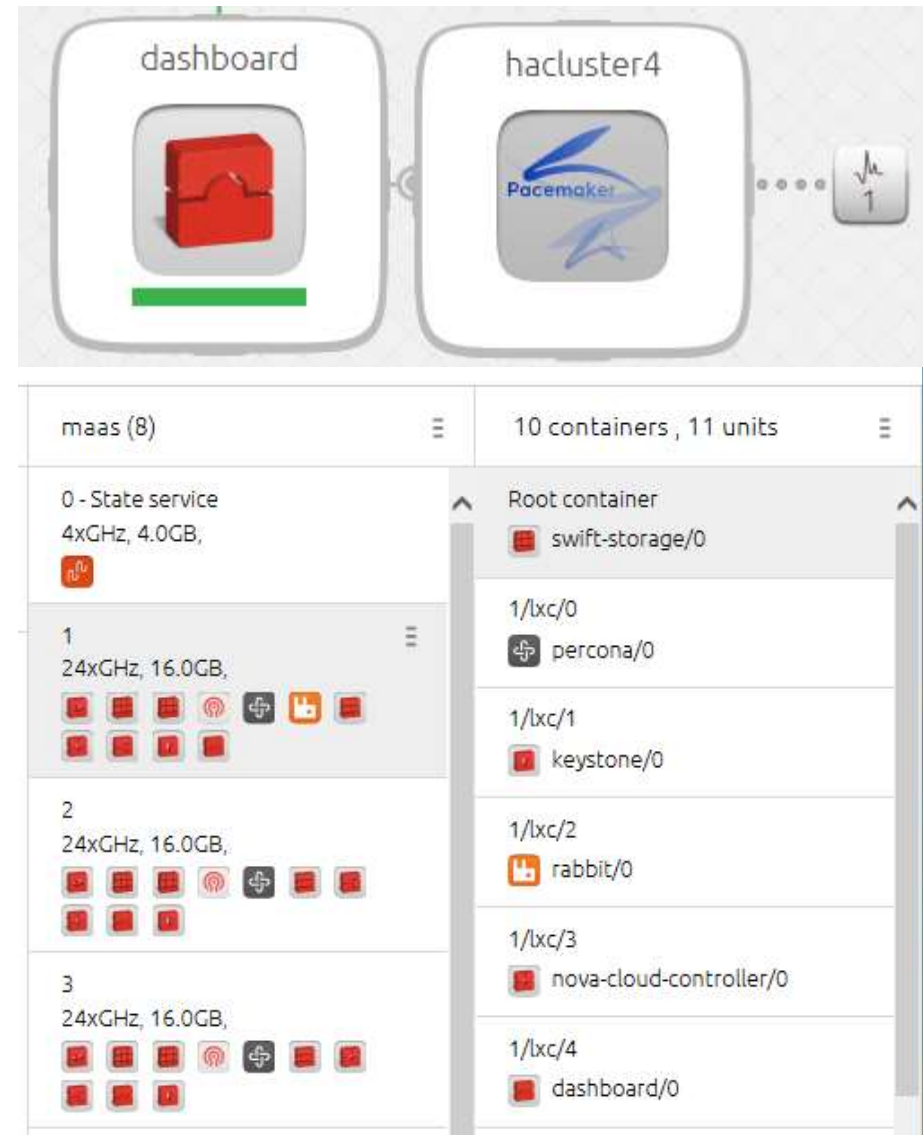
Service: identity

+-----+-----+-----+-----+-----+-----+	
Property	Value
+-----+-----+-----+-----+-----+-----+	
adminURL	http://10.204.1.132:35357/v2.0
id	3b0f7b86c65d4bcd921560dea47adf69
internalURL	http://10.204.1.132:5000/v2.0
publicURL	http://10.204.1.132:5000/v2.0
region	RegionOne
+-----+-----+-----+-----+-----+-----+	

Install Dashboard

```
dashboard.cfg
dashboard:
  openstack-origin: 'cloud:trusty-kilo'
  vip: '10.204.128.4'
  vip_cidr: 16
hacluster4:
  corosync_transport: multicast
  corosync_mcastaddr: 226.94.1.4

juju deploy --config dashboard.cfg openstack-
dashboard dashboard --to lxc:1
juju add-unit dashboard --to lxc:2
juju add-unit dashboard --to lxc:3
juju deploy --config dashboard.cfg hacluster
hacluster4
juju add-relation dashboard hacluster4
juju add-relation dashboard keystone
```



←

→

http://10.204.128.4/horizon/admin/

🔍 ↻

Juju Admin

Nodes | SM-1 MAAS

使用量概觀 - Ope... x

🏠 ⭐ ⚙️

File Edit View Favorites Tools Help

Google

搜尋

更多設定 >>

登入

ubuntu®

admin

admin

Error: 無法獲得網路配額資訊。

專案
管理員
系統

概觀

虛擬機器管理程式
主機聚合
雲實例
虛擬硬體樣板
網路
路由器
預設值
詮釋資料定義
系統資訊

身份

概觀

Usage Summary

Select a period of time to query its usage:

From: 2015-08-01 To: 2015-08-08 Submit The date should be in YYYY-mm-dd format.

Active Instances: 0 Active RAM: 0 Bytes This Period's VCPU-Hours: 0 This Period's GB-Hours: 0 This Period's RAM-Hours: 0

使用量

下載 CSV 摘要

專案名稱	虛擬處理器數	硬碟	隨機存取記憶體	虛擬處理器時數 ⓘ	硬碟 GB 時數 ⓘ	記憶體 MB 時數 ⓘ
No items to display.						
Displaying 0 items						

Install Glance & Swift



```
glance.cfg
glance:
  openstack-origin: 'cloud:trusty-kilo'
  vip: '10.204.128.5'
  vip_cidr: 16
hacluster5:
  corosync_transport: multicast
  corosync_mcastaddr: 226.94.1.5

juju deploy --config=glance.cfg glance --to
lxc:1
juju add-unit glance --to lxc:2
juju add-unit glance --to lxc:3
juju deploy --config glance.cfg hacluster
hacluster5
juju add-relation glance hacluster5
juju add-relation glance percona
juju add-relation glance keystone
juju add-relation glance swift-proxy
juju add-relation glance nova-cloud-
controller
```

swift.cfg

```
swift-proxy:
  openstack-origin: cloud:trusty-kilo
  vip: '10.204.128.8'
  zone-assignment: auto
  replicas: 3
swift-storage:
  openstack-origin: cloud:trusty-kilo
  zone: 1
  block-device: /etc/swift/storage.img|20G
hacluster8:
  corosync_transport: multicast
  corosync_mcastaddr: 226.94.1.8

juju deploy --config=swift.cfg swift-proxy --to
lxc:1
juju add-unit swift-proxy --to lxc:2
juju add-unit swift-proxy --to lxc:3
juju deploy --config swift.cfg hacluster hacluster8
juju add-relation swift-proxy hacluster8
juju deploy --config=swift.cfg swift-storage --to 1
juju add-unit swift-storage --to 2
juju add-unit swift-storage --to 3
juju add-relation swift-proxy swift-storage
juju add-relation swift-proxy keystone
```


Test Glance

```
-+
glance image-create --name cirros-x86_64 --is-public True --
disk-format qcow2 --container-format ovf --file cirros-
0.3.4-x86_64-disk.img --progress
[=====>] 100%
```

```
+-----+
| Property | Value |
+-----+
| checksum | ee1eca47dc88f4879d8a229cc70a07c6 |
| container_format |
| created_at |
| deleted |
| deleted_at |
| disk_format |
| id |
| is_public |
| name |
| owner |
| protected |
| size |
| status | active |
| updated_at | 2015-08-09T02:23:12.000000 |
| virtual_size | None |
+-----+
```

映像檔

映像檔名稱 =

▼

Filter

篩選

+ 新增映像檔

✕ 刪除映像檔

<input type="checkbox"/>	映像檔名稱	類型	狀態	公開	保護	格式	容量	Actions
<input type="checkbox"/>	Ubuntu14.04-x86_64	映像檔	使用中	True	False	QCOW2	246.5 MB	<div>編輯映像檔</div> <div>▼</div>
<input type="checkbox"/>	cirros-x86_64	映像檔	使用中	True	False	QCOW2	12.7 MB	<div>編輯映像檔</div> <div>▼</div>

Displaying 2 items

Install Cinder & Ceph



```
ceph.cfg
ceph:
  fsid: '6547bd3e-1397-11e2-82e5-
53567c8d32dc'
  monitor-count: 3
  monitor-secret:
'AQCXrnZQwI7KGBAAiPofmKEXKxu5bUzoYLVkbQ=='
  osd-devices: '/etc/ceph/data'
  osd-reformat: 'yes'
  source: 'cloud:trusty-kilo'
```

```
juju deploy --config=ceph.cfg ceph --to
lxc:1
juju add-unit ceph --to lxc:2
juju add-unit ceph --to lxc:3
```

```
swift.cfg
cat cinder.cfg
cinder:
  openstack-origin: cloud:trusty-kilo
  vip: '10.204.128.6'
  vip_cidr: 16
  block-device: 'None'
hacluster6:
  corosync_transport: multicast
  corosync_mcastaddr: 226.94.1.6
```

```
juju deploy --config cinder.cfg cinder --to lxc:1
juju add-unit cinder --to lxc:2
juju add-unit cinder --to lxc:3
juju deploy --config cinder.cfg hacluster
hacluster6
juju add-relation cinder hacluster6
juju add-relation cinder ceph
juju add-relation cinder percona
juju add-relation cinder keystone
juju add-relation cinder rabbit
juju add-relation cinder nova-cloud-controller
juju add-relation swift-proxy keystone
```

Test Create Cinder Volume

新增雲硬碟

雲硬碟名稱

TestVM01

描述

雲硬碟來源

無來源，空的雲硬碟

類型

無雲硬碟類型

容量 (GB) *

1

可用區域

任何可用區域

描述 :

雲硬碟是可以附加到雲實例的區塊裝置。

雲硬碟限制

Gigabytes 總合 (0 GB) 1000 GB 可用

雲硬碟數量 (0)

10 可用

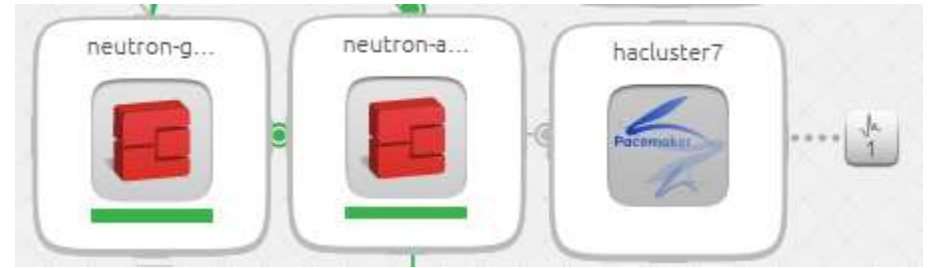
取消

新增雲硬碟

<input type="checkbox"/>	名稱	描述	容量	狀態	類型	附加到	可用區域	可用於開機	已加密	Actions
<input type="checkbox"/>	TestVM01	-	1GB	可用	-		nova	False	否	編輯雲硬碟

Displaying 1 item

Install Neutron



```
neutron-api.cfg
neutron-api:
  openstack-origin: cloud:trusty-kilo
  vip: '10.204.128.7'
  vip_cidr: 16
hacluster7:
  corosync_transport: multicast
  corosync_mcastaddr: 226.94.1.7

juju deploy --config neutron-api.cfg neutron-api --to lxc:1
juju add-unit neutron-api --to lxc:2
juju add-unit neutron-api --to lxc:3
juju deploy --config neutron-api.cfg hacluster
hacluster7
juju deploy neutron-openvswitch
juju add-relation neutron-api hacluster7
juju add-relation neutron-api percona
juju add-relation neutron-api keystone
juju add-relation neutron-api rabbit
juju add-relation neutron-api neutron-openvswitch
juju add-relation neutron-api nova-cloud-controller
juju add-relation neutron-openvswitch rabbit
```

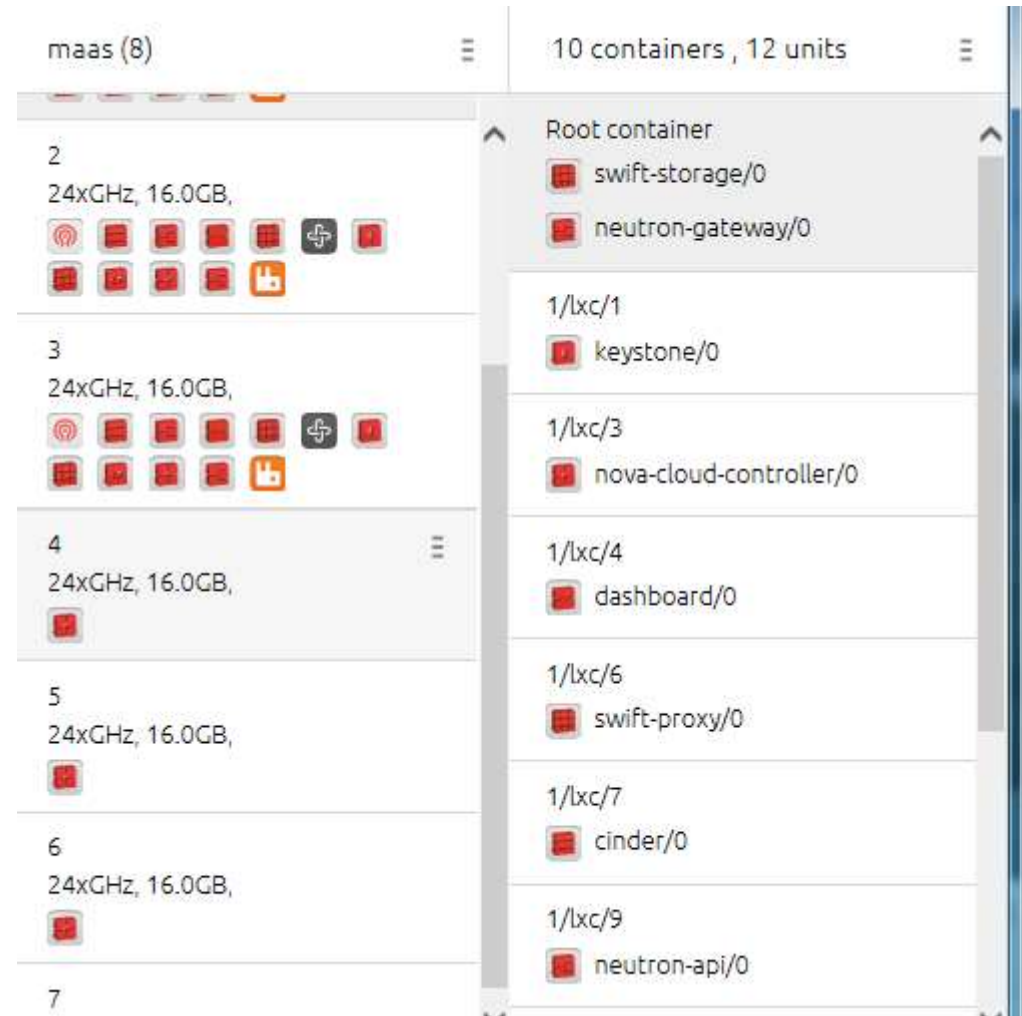
```
neutron-gateway.cfg
neutron-gateway:
  openstack-origin: cloud:trusty-kilo
  ext-port: 'eth1'
```

```
juju deploy --config neutron-gateway.cfg quantum-
gateway neutron-gateway --to 1
juju add-unit neutron-gateway --to 2
juju add-unit neutron-gateway --to 3
juju add-relation neutron-gateway percona
juju add-relation neutron-gateway:amqp rabbit:amqp
juju add-relation neutron-gateway neutron-api
juju add-relation neutron-gateway nova-cloud-
controller
```

Install Nova Compute

```
nova-compute.cfg
nova-compute:
  openstack-origin: cloud:trusty-kilo
  enable-live-migration: 'True'
  migration-auth-type: 'ssh'

juju deploy --config nova-compute.cfg nova-
compute --to 4
juju add-unit nova-compute --to 5
juju add-unit nova-compute --to 6
juju add-relation nova-compute neutron-
openvswitch
juju add-relation nova-compute nova-cloud-
controller
juju add-relation nova-compute rabbit
juju add-relation nova-compute glance
juju add-relation nova-compute ceph
juju add-relation nova-compute percona
juju add-relation nova-compute cinder
```



Verify all Components

系統資訊

伺服器

運算伺服器

區塊類型儲存伺服器

網路媒介

Filter



名稱	伺服器	主機	狀態
nova	compute	10.204.128.3	已啟用
quantum	network	10.204.128.7	已啟用
cinderv2	volumev2	10.204.128.6	已啟用
glance	image	10.204.128.5	已啟用
cinder	volume	10.204.128.6	已啟用
swift	object-store	10.204.1.235	已啟用
keystone	identity (native 後端)	10.204.128.2	已啟用
Displaying 7 items			

版本 : 2015.1.0

Verify all Compute Services

系統資訊

伺服器

運算伺服器

區塊類型儲存伺服器

網路媒介

Filter 

名稱	主機	區域	狀態	狀態	最近一次更新
nova-cert	juju-machine-2-lxc-2	internal	已啟用	上線	0 分
nova-conductor	juju-machine-2-lxc-2	internal	已啟用	上線	0 分
nova-scheduler	juju-machine-2-lxc-2	internal	已啟用	上線	0 分
nova-conductor	juju-machine-3-lxc-2	internal	已啟用	上線	0 分
nova-conductor	juju-machine-1-lxc-3	internal	已啟用	上線	0 分
nova-cert	juju-machine-3-lxc-2	internal	已啟用	上線	0 分
nova-scheduler	juju-machine-1-lxc-3	internal	已啟用	上線	0 分
nova-cert	juju-machine-1-lxc-3	internal	已啟用	上線	0 分
nova-scheduler	juju-machine-3-lxc-2	internal	已啟用	上線	0 分
nova-compute	SM-2	nova	已啟用	上線	0 分
nova-compute	SM-7	nova	已啟用	上線	0 分
Displaying 11 items					

Verify all Cinder Services

系統資訊

伺服器

運算伺服器

區塊類型儲存伺服器

網路媒介

Filter 

名稱	主機	區域	狀態	狀態	最近一次更新
cinder-scheduler	cinder	nova	已啟用	上線	0 分
cinder-scheduler	cinder	nova	已啟用	上線	0 分
cinder-volume	cinder	nova	已啟用	上線	0 分
cinder-volume	cinder	nova	已啟用	上線	0 分
Displaying 4 items					

版本 : 2015.1.0

Verify all Neutron Services

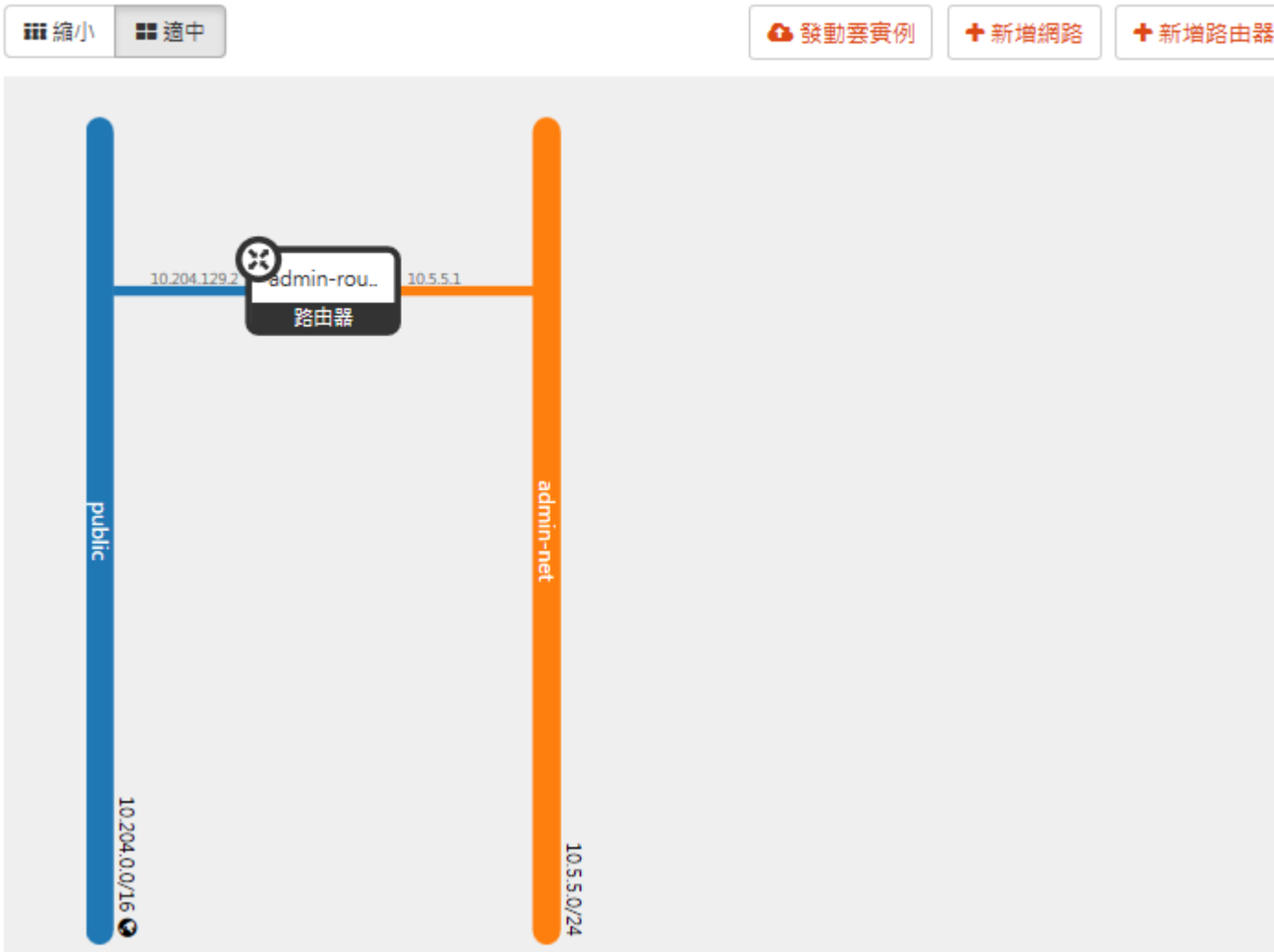
系統資訊

伺服器 運算伺服器 區塊類型儲存伺服器 網路媒介

Filter <input type="text"/>					
類型	名稱	主機	狀態	狀態	最近一次更新
Loadbalancer agent	neutron-lbaas-agent	SM-8	已啟用	上線	0 分
Open vSwitch agent	neutron-openvswitch-agent	SM-2	已啟用	上線	0 分
DHCP agent	neutron-dhcp-agent	SM-8	已啟用	上線	0 分
DHCP agent	neutron-dhcp-agent	SM-5	已啟用	上線	0 分
Open vSwitch agent	neutron-openvswitch-agent	SM-8	已啟用	上線	0 分
Metering agent	neutron-metering-agent	SM-8	已啟用	上線	0 分
Metadata agent	neutron-metadata-agent	SM-8	已啟用	上線	0 分
Open vSwitch agent	neutron-openvswitch-agent	SM-6	已啟用	上線	0 分
Metadata agent	neutron-metadata-agent	SM-5	已啟用	上線	0 分
L3 agent	neutron-l3-agent	SM-6	已啟用	上線	0 分
Loadbalancer agent	neutron-lbaas-agent	SM-6	已啟用	上線	0 分
Metering agent	neutron-metering-agent	SM-5	已啟用	上線	0 分
Loadbalancer agent	neutron-lbaas-agent	SM-5	已啟用	上線	0 分
L3 agent	neutron-l3-agent	SM-8	已啟用	上線	0 分
Metering agent	neutron-metering-agent	SM-6	已啟用	上線	0 分
L3 agent	neutron-l3-agent	SM-5	已啟用	上線	0 分
Open vSwitch agent	neutron-openvswitch-agent	SM-5	已啟用	上線	0 分
Open vSwitch agent	neutron-openvswitch-agent	SM-7	已啟用	上線	0 分
DHCP agent	neutron-dhcp-agent	SM-6	已啟用	上線	0 分
Metadata agent	neutron-metadata-agent	SM-6	已啟用	上線	0 分
Displaying 20 items					

Build Network Topology

網路拓撲



Start VM

發動雲實例

詳細資訊 *

存取權以及安全性

網路連線 *

前置作業

進階選項

可用區域

nova

為發動雲實例指定詳細資料。

下列的圖表顯示此專案的專案配額中資源的使用情形。

虛擬硬體樣板詳細資料

雲實例名稱 *

vm01

虛擬硬體樣板 * ?

m1.tiny

雲實例數量 * ?

1

雲實例開機來源 * ?

從映像檔開機

映像檔名稱 *

cirros-x86_64 (12.7 MB)

雲實例

雲實例名稱

Filter

篩選

發動雲實例

終止雲實例

More Actions

<input type="checkbox"/>	雲實例名稱	映像檔名稱	IP 位址	容量	密鑰對	狀態	可用區域	任務	電源狀態	壽命	Actions
<input type="checkbox"/>	vm01	cirros-x86_64	10.5.5.3	m1.tiny	default	使用中	nova	無	正在執行	14 分	新增即時存檔

Displaying 1 item

雲實例數量

已使用 10 中的 0

Live Maintenance

- Juju add-unit <service> to a new machine.
- Wait for the new unit to become ready
- Juju remove-unit <service>
- After old machine's all service units removed, you can now shutdown the machine for maintenance.

Live Upgrade

- Juju deploy <new service> to a new machine.
- Wait for the new unit to become ready
- Connection the new service's relations.
- After new services are all up and running and participate with HA cluster, you can now shutdown the old service units.

ITRI's Cloud OS 2.1

■ When: 2015/10 with Kilo

■ What:

- HA with live maintenance/upgrade
- Network Hardware Redundancy
- DISCO Cinder Plugin
- Peregrine Neutron Plugin

DISCO Cinder Plugin

■ Distributed block storage solution providing:

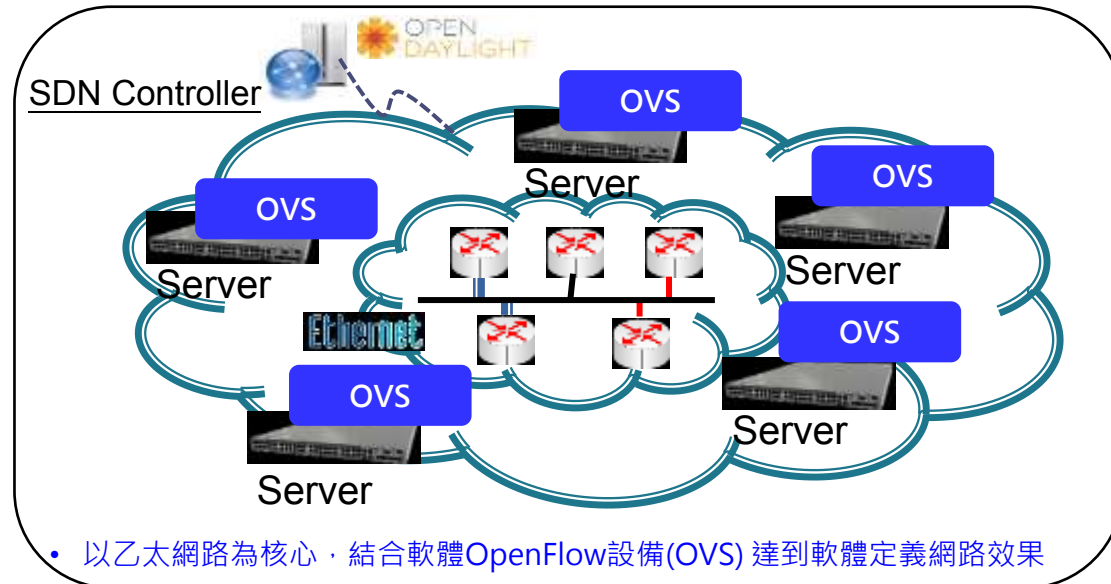
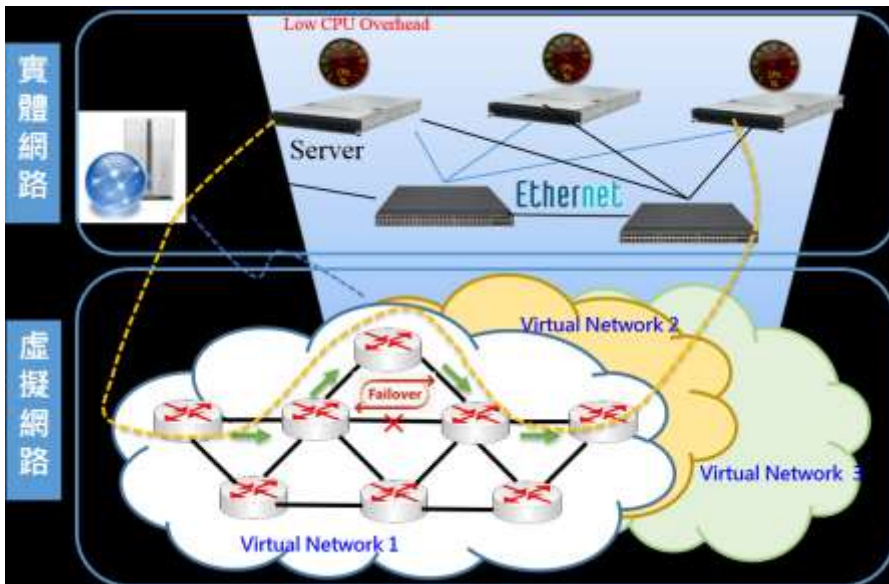
- Self-healing and High-availability
- N-way replication
- Deduplication
- Snapshot, restore and fast volume cloning
- Datacenter to Datacenter backup
- Monitoring and diagnostic interface

■ Coming soon

- Erasure coding
- Quality of Service

Peregrine Neutron Plugin

- Provide low CPU overhead, L2 traffic engineering, fast failover and compatible with commercial Ethernet switches.



- 以乙太網路為核心，結合軟體OpenFlow設備(OVS)達到軟體定義網路效果

Q & A

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