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| www.linuxfan.cn科技有限公司 |
| 项目：部署Openstack-R企业私有云平台 |
| 版本：1-1 |

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项目：部署Openstack-R企业私有云平台

一、项目拓扑：

二、项目重点：

**一、云计算概述：**

**什么是云计算：**

相信大家听到最多的阿里云、腾讯云、百度云等等这些词，那到底什么是云计算？云计

算又能干什么呢？

云计算(cloud computing)是一种基于因特网的超级计算模式，在远程的数据中心里，

成千上万台电脑和服务器连接成一片电脑云。因此，云计算甚至可以让你体验每秒 10 万亿

次的运算能力，拥有这么强大的计算能力可以模拟核爆炸、预测气候变化和市场发展趋势。

用户通过电脑、笔记本、手机等方式接入数据中心，按自己的需求进行运算。

狭义的云计算是指 IT 基础设施的交付和使用模式，指通过网络以按需、易扩展的方式

获得所需的资源(硬件、平台、软件)。提供资源的网络被称为“云”。

“云”中的资源在使用者看来是可以无限扩展的，并且可以随时获取，按需使用，随时扩展，按使用付费。这种特性经常被称为像水电一样使用 IT 基础设施。广义的云计算是指服务的交付和使用模式，指通过网络以按需、易扩展的方式获得所需的服务。这种服务可以是 IT 和软件、互联网相关的，也可以是任意其他的服务。

云计算是一种模型，能够提供无论在何时何地都可以便捷获取所需资源的模型，这些资源可以是网络资源、存储资源、服务器资源、甚至是服务或者应用软件资源等，这些资源能够让用户根据需要快速创建应用，并且在不需要时进行资源释放。

**概述：**

狭义的云计算是指IT基础设施的交付和使用模式；

广义的云计算是指服务的交付和使用模式；

**云资源：**

网络资源 、存储资源 、服务器资源、……

**服务模型：**

IaaS（基础架构即服务）：

提供底层IT基础设施服务，包括处理能力、存储空间、网络资源等；

一般面向对象是IT管理人员；

PaaS（平台即服务）：

把安装好开发环境的系统平台作为一种服务通过互联网提供给用户；

一般面向对象是开发人员；

SaaS（软件即服务）：

直接通过互联网为用户提供软件和应用程序的服务；

一般面向的对象是普通用户；

**二、公有云、私有云、混合云概述：**

**三、Openstack私有云技术概述：**

**OpenStack 起源：**OpenStack 是 Rackspace（一家美国的云计算厂商）和 NASA（美国国家航空航天局）在 2010 年共同发起了 OpenStack 项目。那时候 Rackspace 是美国第二大云计算厂商，但规模只能占到亚马逊的 5%。只依靠内部的力量来超越或者追赶亚马逊不大可能，这家公司索性就把自己的项目开源了，也就是后来的 openstack 的存储源码（swift）。

**概述：**一款云计算开源项目，以Apache许可证授权的自由软件和开放源代码项目，旨在为公共及私有云的建设与管理提供软件的开源项目**、**覆盖了网络、虚拟化、操作系统、服务器等各个方面。

OpenStack 是一个开源的云计算管理平台项目，由几个主要的组件组合起来完成具体工作。OpenStack 支持几乎所有类型的云环境，项目目标是提供实施简单、可大规模扩展、丰富、标准统一的云计算管理平台。OpenStack 通过各种互补的服务提供了基础设施即服务（IaaS）的解决方案，每个服务提供 API 以进行集成。

它是一个正在开发中的云计算平台项目，根据成熟及重要程度的不同，被分解成核心项目、孵化项目，以及支持项目和相关项目。每个项目都有自己的委员会和项目技术主管，而且每个项目都不是一成不变的，孵化项目可以根据发展的成熟度和重要性，转变为核心项目。截止目前最新开发版为Rocky版本，每大概半年左右更新一次版本。

**未来发展：**

如果仅仅是因为开源，那么 OpenStack 对于企业似乎就没那么大的价值了。相反，OpenStack 提供了一个非常好的有关如何来打造类似于主要公有云比如亚马逊（AWS）和Google Cloud Platform（GCP）的弹性私有云的样板。就像 Hadoop 将 Google 的 MapReduce（加上它的参考架构）推向大众一样，OpenStack 将 AWS/GCP 样式的基础架构即服务（IaaS）推向了每个用户。它就是能实现企业内部 DevOps 的终极平台。

OpenStack 能在企业内部提供类似的平台。私有云可以基于公有云模型来构造，使得开发者同时拥有集中式 IT 控制和支配。本质上，它是两者融合的较佳平台，这也是 OpenStack驱动的私有云的真正价值。

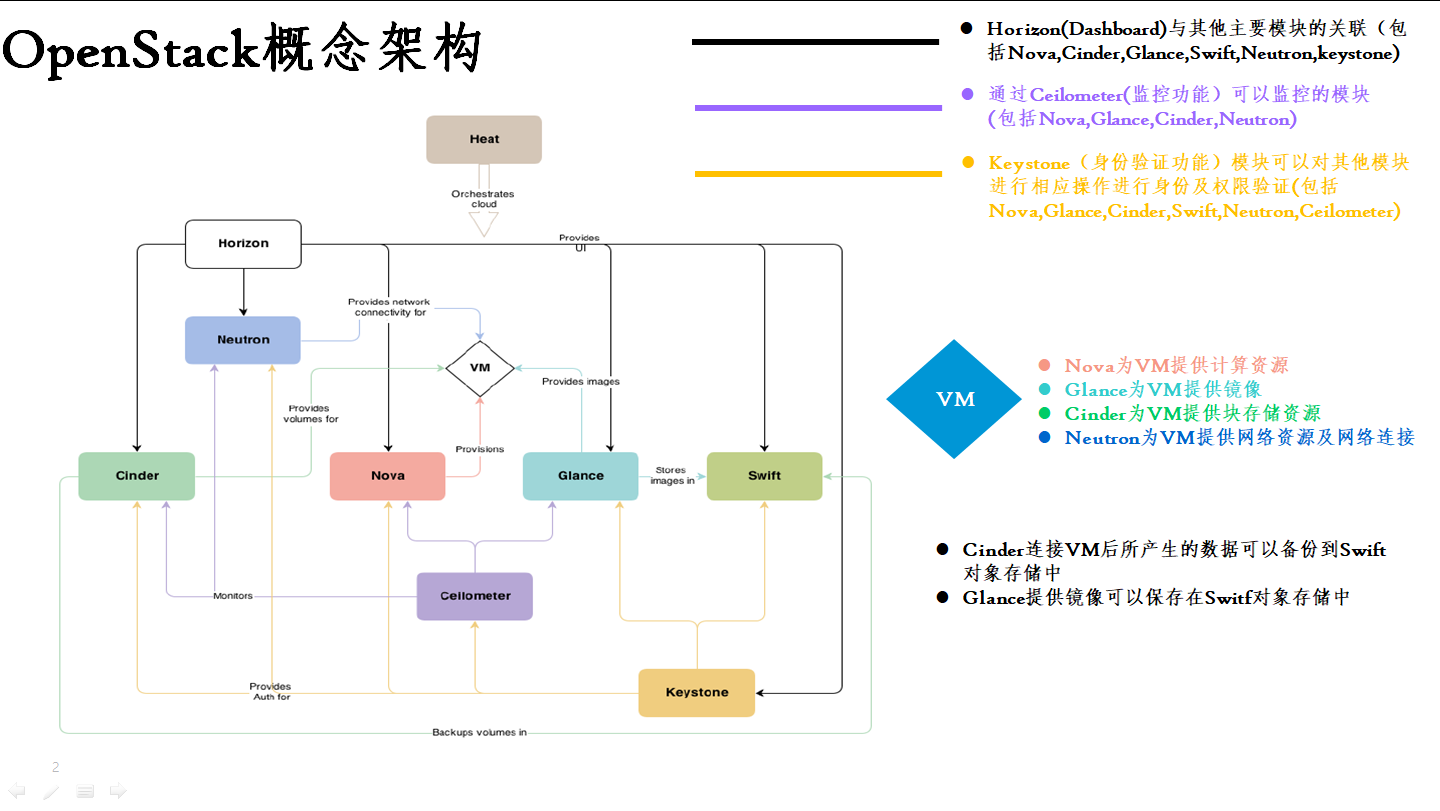
由 OpenStack 来实现企业内部的 DevOps，进而实现敏捷，而敏捷恰恰是驱动云计算的原动力。 OpenStack 作为一个可扩展的打造下一代弹性云的基础架构，尽管它还不是很完美。

但作为一个开源项目，它的吸引力确实不容小视。基于平台开放，会有越来越多的力量促使

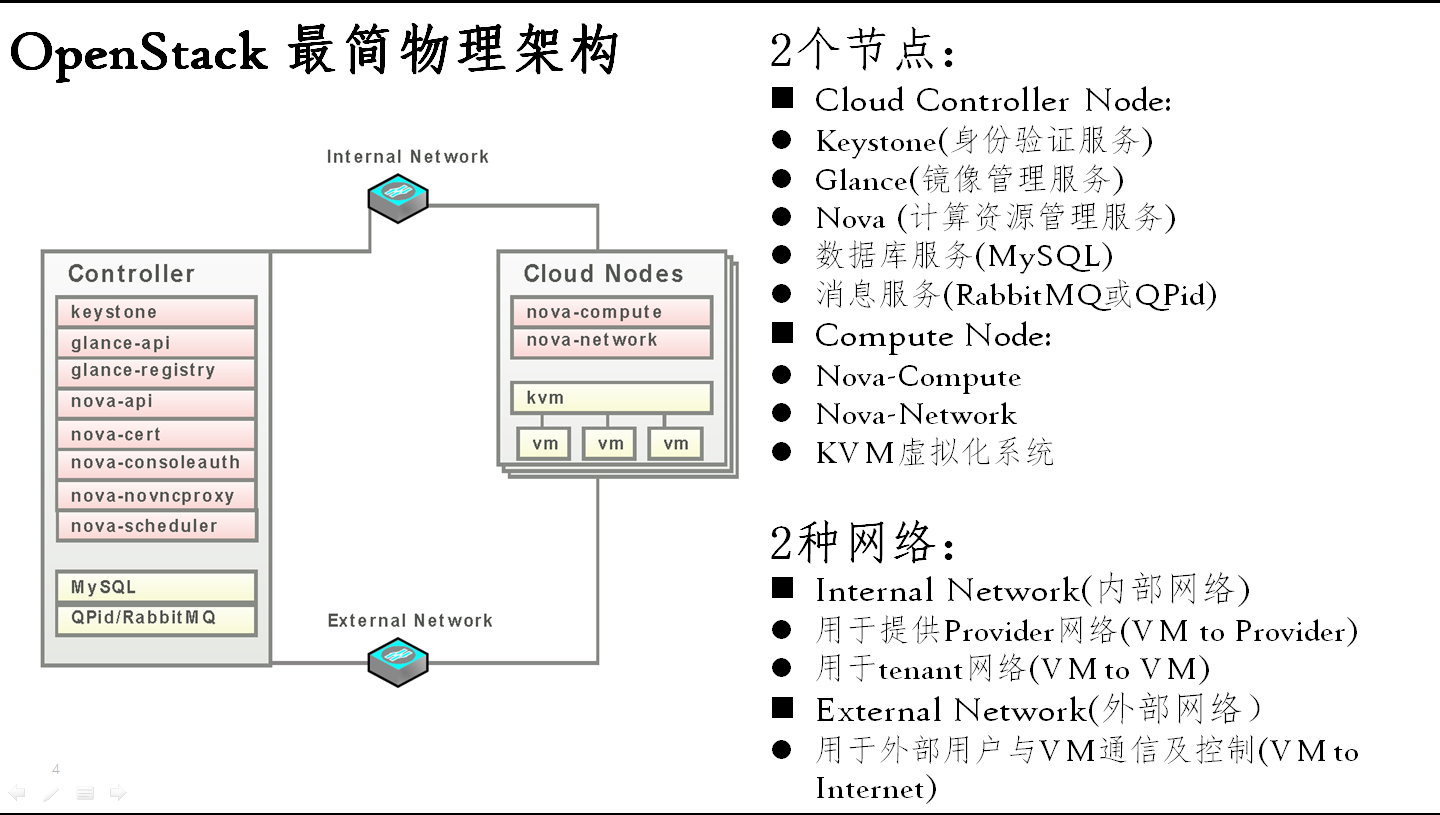
它更完善和强大，采用 OpenStack 意味着企业云平台会更加自主可控，并实现技术沉淀和自动化运维水平的提升；

**四、Openstack内部组件：**





**五、Openstack物理架构：**

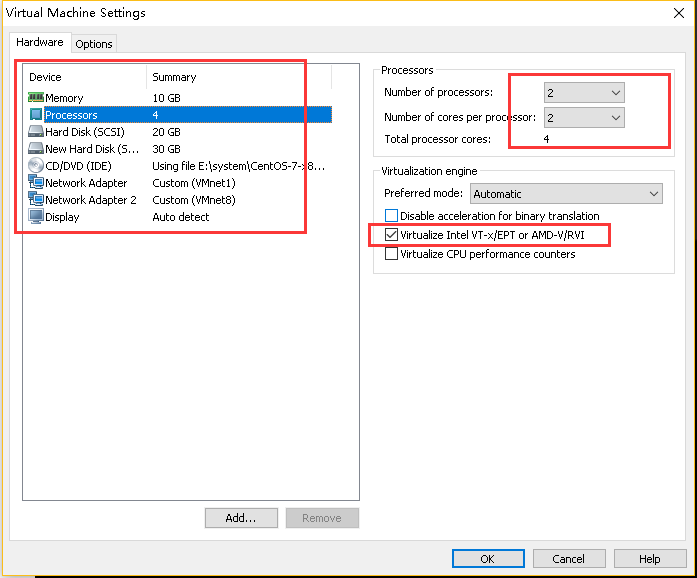


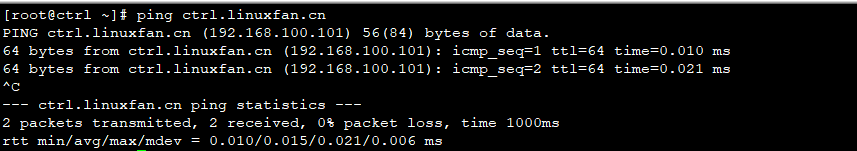
三、项目环境：

|  |  |  |  |
| --- | --- | --- | --- |
| 系统类型 | IP地址 | 主机名 | 所需软件 |
| Centos 7.4 1708 64bit | 192.168.100.101 | ctrl.linuxfan.cn |  |

四、项目实施步骤：

* ctrl控制节点环境准备（配置硬件、DNS域名解析、磁盘扩容）：
* 配置NTP时间同步服务：
* 配置安装openstack\_R版本的yum源；
* 安装配置mariadb数据库程序：
* 安装配置rebbitmq-server消息队列、memcached缓存服务：
* 安装配置keystone身份验证组件一（数据库授权、程序安装、初始化程序）：
* 安装配置keystone身份验证组件二（创建keystone组件项目）：
* 安装配置Glance镜像组件一（创建glance组件项目、数据库授权）：
* 安装配置Glance镜像组件二（安装glance程序、配置启动服务）
* 准备基于Kvm的云主机实例所需要的镜像文件：
* 上传镜像文件到openstack的项目中：
* 安装配置nova计算组件一（创建nova组件项目、注册身份信息、数据库授权）：
* 安装配置nova计算组件二（安装nova程序、修改配置、启动基础服务）：
* 安装配置nova计算组件三（安装配置nova-compute程序）：
* 安装配置neutron网络组件一（创建neutron组件项目、数据库授权）：
* 安装配置neutron网络组件二（安装neutron程序、配置启动服务）：
* 创建配置neutron网络接口：
* 创建云主机实例类型：
* 基于Centos6镜像创建云主机实例（验证各个组件列表、创建安全组、添加安全组策略、创建云主机实例）：
* 安装配置horizon组件（准备dashboard组件）：
* 使用浏览器访问测试Dashboard页面：
* 基于浏览器管理openstack实例：
* **ctrl控制节点环境准备（配置硬件、DNS域名解析、磁盘扩容）：**





[root@ctrl ~]# fdisk /dev/sdb

n--p--1--回车--回车--p--t--8e--w

[root@ctrl ~]# partx -a /dev/sdb

partx: /dev/sdb: error adding partition 1

[root@ctrl ~]# vgscan

Reading volume groups from cache.

Found volume group "centos\_lwh" using metadata type lvm2

[root@ctrl ~]# vgextend centos\_lwh /dev/sdb1

Physical volume "/dev/sdb1" successfully created.

Volume group "centos\_lwh" successfully extended

[root@ctrl ~]# lvextend /dev/centos\_lwh/root /dev/sdb1

Size of logical volume centos\_lwh/root changed from 18.46 GiB (4727 extents) to 48.46 GiB (12406 extents).

Logical volume centos\_lwh/root successfully resized.

[root@ctrl ~]# xfs\_growfs /dev/centos\_lwh/root

meta-data=/dev/mapper/centos\_lwh-root isize=256 agcount=4, agsize=1210112 blks

= sectsz=512 attr=2, projid32bit=1

= crc=0 finobt=0 spinodes=0

data = bsize=4096 blocks=4840448, imaxpct=25

= sunit=0 swidth=0 blks

naming =version 2 bsize=4096 ascii-ci=0 ftype=0

log =internal bsize=4096 blocks=2560, version=2

= sectsz=512 sunit=0 blks, lazy-count=1

realtime =none extsz=4096 blocks=0, rtextents=0

data blocks changed from 4840448 to 12703744

[root@ctrl ~]# df -hT |grep root

/dev/mapper/centos\_lwh-root xfs 49G 1.9G 47G 4% /

* **配置NTP时间同步服务：**

[root@ctrl ~]# wget -O /etc/yum.repos.d/CentOS-Base.repo http://mirrors.aliyun.com/repo/Centos-7.repo

[root@ctrl ~]# yum -y install ntp

[root@ctrl ~]# vi /etc/ntp.conf

15 restrict 192.168.100.0 mask 255.255.255.0 nomodify notrap

22 #server 0.centos.pool.ntp.org iburst

23 #server 1.centos.pool.ntp.org iburst

24 #server 2.centos.pool.ntp.org iburst

25 #server 3.centos.pool.ntp.org iburst

26 server ntp1.jst.mfeed.ad.jp iburst

27 server ntp2.jst.mfeed.ad.jp iburst

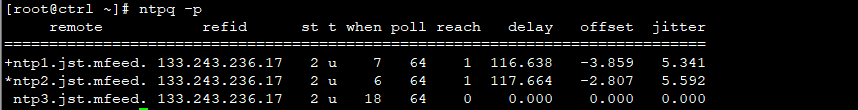
28 server ntp3.jst.mfeed.ad.jp iburst

:wq

[root@ctrl ~]# systemctl start ntpd

[root@ctrl ~]# systemctl enable ntpd

Created symlink from /etc/systemd/system/multi-user.target.wants/ntpd.service to /usr/lib/systemd/system/ntpd.service.



* **配置安装openstack\_R版本的yum源；**

[root@ctrl ~]# cat <<END >>/etc/yum.repos.d/openstack.repo

[local3]

name=local3

baseurl=ftp://192.168.100.100/openstack

enable=1

gpgcheck=0

END

[root@ctrl ~]# yum -y install centos-release-openstack-rocky

[root@ctrl ~]# sed -i -e "s/enabled=1/enabled=0/g" /etc/yum.repos.d/CentOS-OpenStack-rocky.repo

* **安装配置mariadb数据库程序：**

[root@ctrl ~]# yum -y install mariadb-server

注：如若使用openstack源命令为：yum --enablerepo=centos-openstack-rocky -y install

[root@ctrl ~]# vi /etc/my.cnf  
 10 [mysqld]

13 character-set-server=utf8

:wq

[root@ctrl ~]# systemctl start mariadb

[root@ctrl ~]# systemctl enable mariadb

Created symlink from /etc/systemd/system/multi-user.target.wants/mariadb.service to /usr/lib/systemd/system/mariadb.service.

[root@ctrl ~]# mysql\_secure\_installation

Enter current password for root (enter for none):

Set root password? [Y/n] y

New password: 123123

Re-enter new password: 123123

Password updated successfully!

Reloading privilege tables..

... Success!

Remove anonymous users? [Y/n] y

... Success!

Disallow root login remotely? [Y/n] y

... Success!

Remove test database and access to it? [Y/n] y

Reload privilege tables now? [Y/n] y

... Success!

[root@ctrl ~]# mysql -uroot -p123123

MariaDB [(none)]> exit

* **安装配置rabbitmq-server消息队列、memcached缓存服务：**

[root@ctrl ~]# yum -y install rabbitmq-server memcached

[root@ctrl ~]# systemctl start rabbitmq-server memcached

[root@ctrl ~]# systemctl enable rabbitmq-server memcached

Created symlink from /etc/systemd/system/multi-user.target.wants/rabbitmq-server.service to /usr/lib/systemd/system/rabbitmq-server.service.

Created symlink from /etc/systemd/system/multi-user.target.wants/memcached.service to /usr/lib/systemd/system/memcached.service.

[root@ctrl ~]# rabbitmqctl add\_user openstack password ##创建rabbitmq用户密码

Creating user "openstack" ...

...done.

[root@ctrl ~]# rabbitmqctl set\_permissions openstack ".\*" ".\*" ".\*" ##授权

Setting permissions for user "openstack" in vhost "/" ...

...done.

* **安装配置keystone身份验证组件一（数据库授权、程序安装、初始化程序）：**

[root@ctrl ~]# mysql -uroot -p123123

MariaDB [(none)]> create database keystone;   
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> grant all privileges on keystone.\* to keystone@'localhost' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> grant all privileges on keystone.\* to keystone@'%' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> flush privileges;   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> exit

[root@ctrl ~]# yum -y install openstack-keystone openstack-utils python-openstackclient httpd mod\_wsgi

[root@ctrl ~]# vi /etc/keystone/keystone.conf

610 memcache\_servers = 192.168.100.101:11211

742 connection = mysql+pymysql://keystone:password@192.168.100.101/keystone

2828 provider = fernet

:wq

[root@ctrl ~]# su -s /bin/bash keystone -c "keystone-manage db\_sync" ##keystone用户身份提权

[root@ctrl ~]# keystone-manage fernet\_setup --keystone-user keystone --keystone-group keystone ##初始化keystone

[root@ctrl ~]# keystone-manage credential\_setup --keystone-user keystone --keystone-group keystone

[root@ctrl ~]# export controller=192.168.100.101 ##为下方命令设置变量，设置最终web页面的访问密码，在红色位置

[root@ctrl ~]# keystone-manage bootstrap --bootstrap-password adminpassword \

--bootstrap-admin-url http://$controller:5000/v3/ \

--bootstrap-internal-url http://$controller:5000/v3/ \

--bootstrap-public-url http://$controller:5000/v3/ \

--bootstrap-region-id RegionOne

[root@ctrl ~]# ln -s /usr/share/keystone/wsgi-keystone.conf /etc/httpd/conf.d/

[root@ctrl ~]# systemctl start httpd

[root@ctrl ~]# systemctl enable httpd

Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.

* **安装配置keystone身份验证组件二（创建keystone组件项目）：**

[root@ctrl ~]# vi ~/keystonerc ##新建文件

export OS\_PROJECT\_DOMAIN\_NAME=default

export OS\_USER\_DOMAIN\_NAME=default

export OS\_PROJECT\_NAME=admin

export OS\_USERNAME=admin

export OS\_PASSWORD=adminpassword

export OS\_AUTH\_URL=http://192.168.100.101:5000/v3

export OS\_IDENTITY\_API\_VERSION=3

export OS\_IMAGE\_API\_VERSION=2

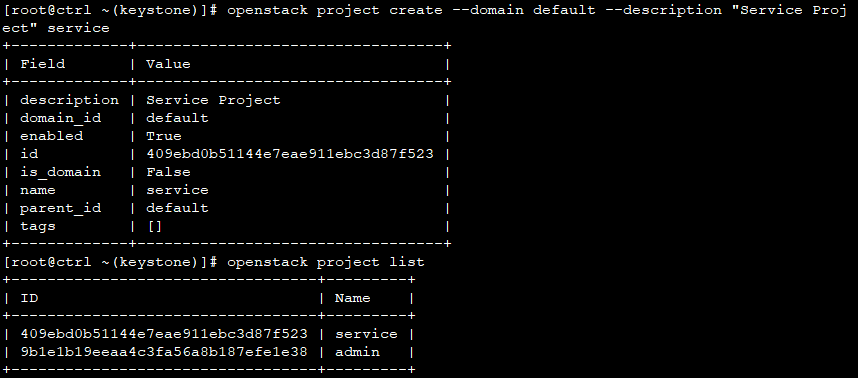
export PS1='[\u@\h \W(keystone)]\$ '

:wq

[root@ctrl ~]# chmod 600 ~/keystonerc

[root@ctrl ~]# source ~/keystonerc

[root@ctrl ~(keystone)]# echo "source ~/keystonerc " >> ~/.bash\_profile



* **安装配置Glance镜像组件一（创建glance组件项目、数据库授权）：**

[root@ctrl ~(keystone)]# openstack user create --domain default --project service --password servicepassword glance

+---------------------+----------------------------------+

| Field | Value |

+---------------------+----------------------------------+

| default\_project\_id | 409ebd0b51144e7eae911ebc3d87f523 |

| domain\_id | default |

| enabled | True |

| id | 750b65209bce475cbfefa3a6786d9867 |

| name | glance |

| options | {} |

| password\_expires\_at | None |

+---------------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack role add --project service --user glance admin

[root@ctrl ~(keystone)]# openstack service create --name glance --description "OpenStack Image service" image

+-------------+----------------------------------+

| Field | Value |

+-------------+----------------------------------+

| description | OpenStack Image service |

| enabled | True |

| id | 26c9264c8239465295848193041bfb28 |

| name | glance |

| type | image |

+-------------+----------------------------------+

[root@ctrl ~(keystone)]# export controller=192.168.100.101

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne image public http://$controller:9292

+--------------+----------------------------------+

| Field | Value |

+--------------+----------------------------------+

| enabled | True |

| id | 3f7381e4c0c84af59e7cd4972195df0e |

| interface | public |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | 26c9264c8239465295848193041bfb28 |

| service\_name | glance |

| service\_type | image |

| url | http://192.168.100.101:9292 |

+--------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne image internal http://$controller:9292

+--------------+----------------------------------+

| Field | Value |

+--------------+----------------------------------+

| enabled | True |

| id | ec6f4cd1588f4090a5816b9f086dc857 |

| interface | internal |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | 26c9264c8239465295848193041bfb28 |

| service\_name | glance |

| service\_type | image |

| url | http://192.168.100.101:9292 |

+--------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne image admin http://$controller:9292

+--------------+----------------------------------+

| Field | Value |

+--------------+----------------------------------+

| enabled | True |

| id | 8fc3381029144913a74ef5f453415d67 |

| interface | admin |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | 26c9264c8239465295848193041bfb28 |

| service\_name | glance |

| service\_type | image |

| url | http://192.168.100.101:9292 |

+--------------+----------------------------------+

[root@ctrl ~(keystone)]# mysql -uroot -p123123

MariaDB [(none)]> create database glance;   
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> grant all privileges on glance.\* to glance@'localhost' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> grant all privileges on glance.\* to glance@'%' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> flush privileges;   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> exit

* **安装配置Glance镜像组件二（安装glance程序、配置启动服务）：**

[root@ctrl ~(keystone)]# yum -y install openstack-glance

[root@ctrl ~(keystone)]# mv /etc/glance/glance-api.conf /etc/glance/glance-api.conf.org

[root@ctrl ~(keystone)]# vi /etc/glance/glance-api.conf

[DEFAULT]

bind\_host = 0.0.0.0

[glance\_store]

stores = file,http

default\_store = file

filesystem\_store\_datadir = /var/lib/glance/images/

[database]

# MariaDB connection info

connection = mysql+pymysql://glance:password@192.168.100.101/glance

# keystone auth info

[keystone\_authtoken]

www\_authenticate\_uri = http://192.168.100.101:5000

auth\_url = http://192.168.100.101:5000

memcached\_servers = 192.168.100.101:11211

auth\_type = password

project\_domain\_name = default

user\_domain\_name = default

project\_name = service

username = glance

password = servicepassword

[paste\_deploy]

flavor = keystone

:wq

[root@ctrl ~(keystone)]# mv /etc/glance/glance-registry.conf /etc/glance/glance-registry.conf.org

[root@ctrl ~(keystone)]# vi /etc/glance/glance-registry.conf

[DEFAULT]

bind\_host = 0.0.0.0

[database]

# MariaDB connection info

connection = mysql+pymysql://glance:password@192.168.100.101/glance

# keystone auth info

[keystone\_authtoken]

www\_authenticate\_uri = http://192.168.100.101:5000

auth\_url = http://192.168.100.101:5000

memcached\_servers = 192.168.100.101:11211

auth\_type = password

project\_domain\_name = default

user\_domain\_name = default

project\_name = service

username = glance

password = servicepassword

[paste\_deploy]

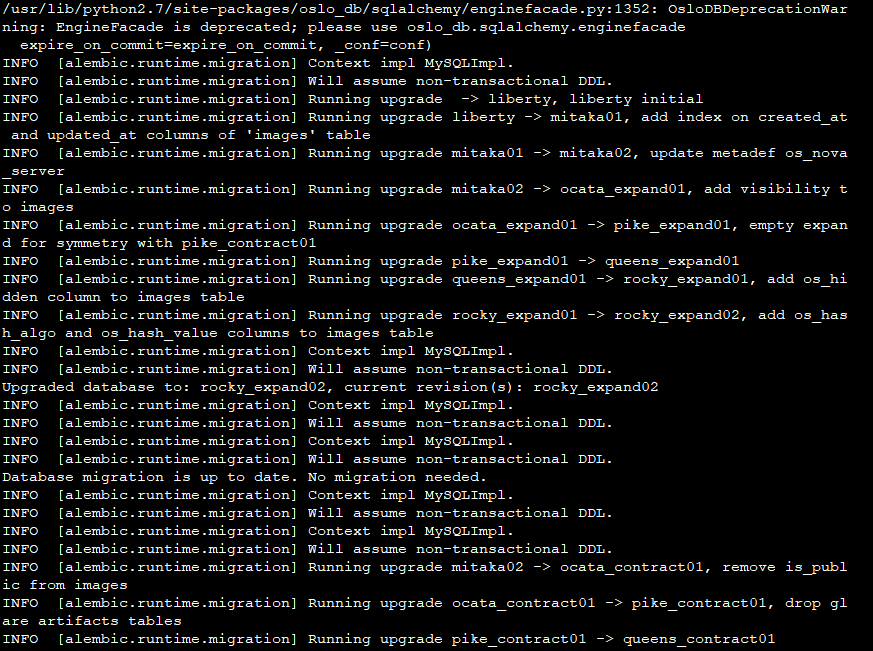
flavor = keystone

:wq

[root@ctrl ~(keystone)]# chmod 640 /etc/glance/glance-api.conf /etc/glance/glance-registry.conf

[root@ctrl ~(keystone)]# chown root:glance /etc/glance/glance-api.conf /etc/glance/glance-registry.conf

[root@ctrl ~(keystone)]# su -s /bin/bash glance -c "glance-manage db\_sync"



[root@ctrl ~(keystone)]# systemctl start openstack-glance-api openstack-glance-registry

[root@ctrl ~(keystone)]# systemctl enable openstack-glance-api openstack-glance-registry

Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-glance-api.service to /usr/lib/systemd/system/openstack-glance-api.service.

Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-glance-registry.service to /usr/lib/systemd/system/openstack-glance-registry.service.

* **准备基于Kvm的云主机实例所需要的镜像文件：**

[root@ctrl ~(keystone)]# yum -y install qemu-kvm libvirt virt-install bridge-utils

[root@ctrl ~(keystone)]# lsmod | grep kvm

kvm\_intel 170200 0

kvm 566604 1 kvm\_intel

irqbypass 13503 1 kvm

[root@ctrl ~(keystone)]# systemctl start libvirtd

[root@ctrl ~(keystone)]# systemctl enable libvirtd

[root@ctrl ~(keystone)]# cp /etc/sysconfig/network-scripts/ifcfg-eth0 /etc/sysconfig/network-scripts/ifcfg-br0

[root@ctrl ~(keystone)]# cat <<END >/etc/sysconfig/network-scripts/ifcfg-br0

TYPE=Bridge

BOOTPROTO=static

DEFROUTE=yes

PEERDNS=yes

PEERROUTES=yes

IPV4\_FAILURE\_FATAL=yes

NAME=br0

DEVICE=br0

ONBOOT=yes

NM\_CONTROLLED=no

IPADDR=192.168.100.101

PREFIX=24

GATEWAY=192.168.100.100

DNS1=192.168.100.100

END

[root@ctrl ~(keystone)]# cat <<END >/etc/sysconfig/network-scripts/ifcfg-eth0

TYPE=Ethernet

BOOTPROTO=none

DEFROUTE=yes

PEERDNS=yes

PEERROUTES=yes

IPV4\_FAILURE\_FATAL=yes

NAME=eth0

DEVICE=eth0

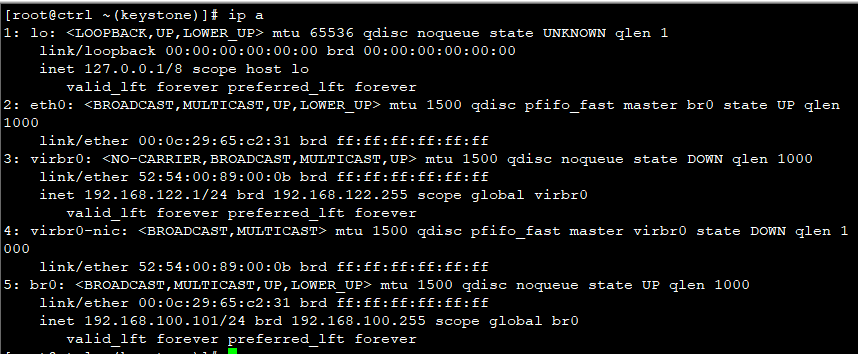
ONBOOT=yes

NM\_CONTROLLED=no

BRIDGE=br0

END

[root@ctrl ~(keystone)]# systemctl restart network



[root@ctrl ~(keystone)]# ls /tmp/CentOS-6.5-x86\_64-bin-DVD1.iso

/tmp/CentOS-6.5-x86\_64-bin-DVD1.iso

[root@ctrl ~(keystone)]# mkdir /var/kvm/images -p

[root@ctrl ~(keystone)]# chmod 777 /var/kvm/images/

[root@ctrl ~(keystone)]# qemu-img create -f qcow2 /var/kvm/images/centos6.img 10G

Formatting '/var/kvm/images/centos6.img', fmt=qcow2 size=10737418240 cluster\_size=65536 lazy\_refcounts=off refcount\_bits=16

[root@ctrl ~(keystone)]# virt-install --virt-type kvm --name Centos6 --ram 1024 --cdrom=/tmp/CentOS-6.5-x86\_64-bin-DVD1.iso --disk path=/var/kvm/images/centos6.img --network network=default --graphics vnc,listen=192.168.100.101 -vncport=5900 --noautoconsole

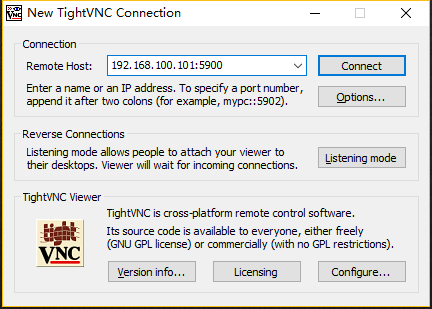
开始安装......

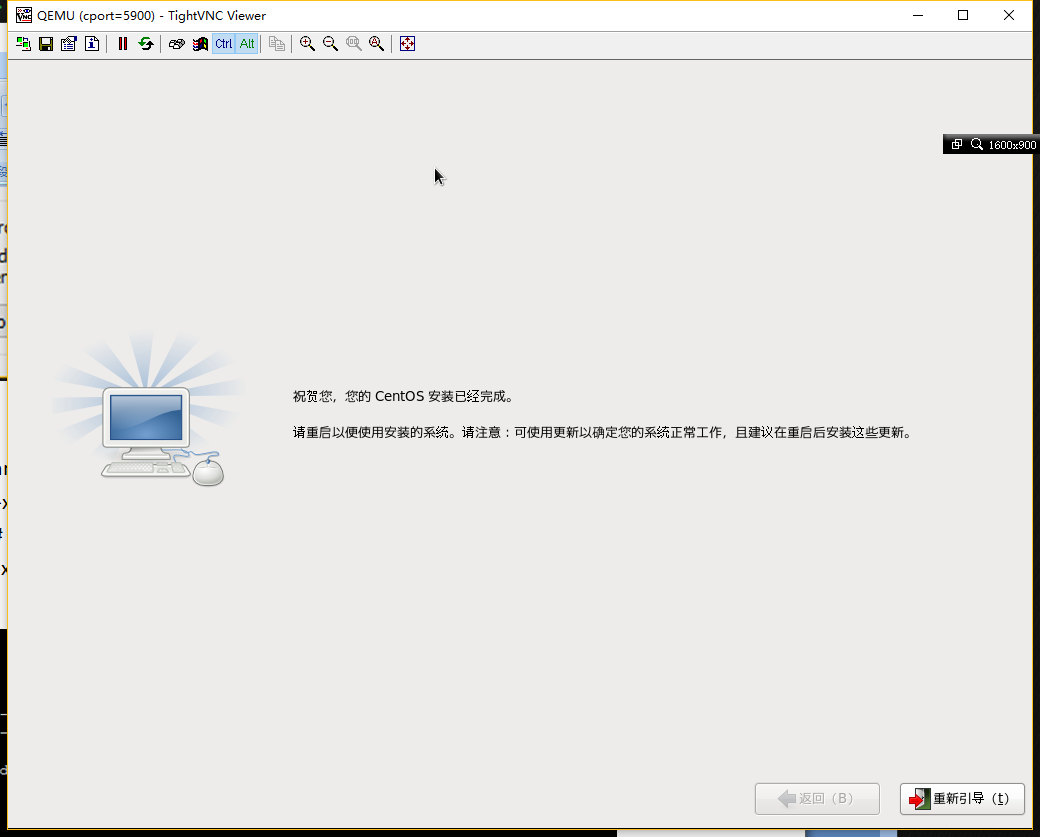
域安装仍在进行。您可以重新连接

到控制台以便完成安装进程。

[root@ctrl ~(keystone)]# netstat -utpln |grep 5900

tcp 0 0 192.168.100.101:5900 0.0.0.0:\* LISTEN 2193/qemu-kvm





[root@ctrl ~(keystone)]# virsh list --all

Id 名称 状态

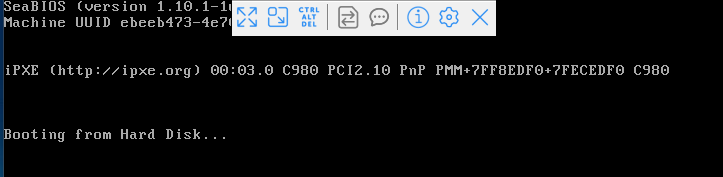
----------------------------------------------------

- cport=5900 关闭

[root@ctrl ~(keystone)]# virsh start cport=5900

域 cport=5900 已开始

注解：启动虚拟机后发现如下情况：



解决方法：

[root@ctrl ~(keystone)]# vi /etc/libvirt/qemu/cport\=5900.xml

<disk type='file' device='disk'>

<driver name='qemu' type='qcow2'/>

<source file='/var/kvm/images/centos6.img' />

<target dev='hdb' bus='ide'/>

<!-- <address .../> -->

</disk>

[root@ctrl ~(keystone)]# virsh define /etc/libvirt/qemu/cport\=5900.xml

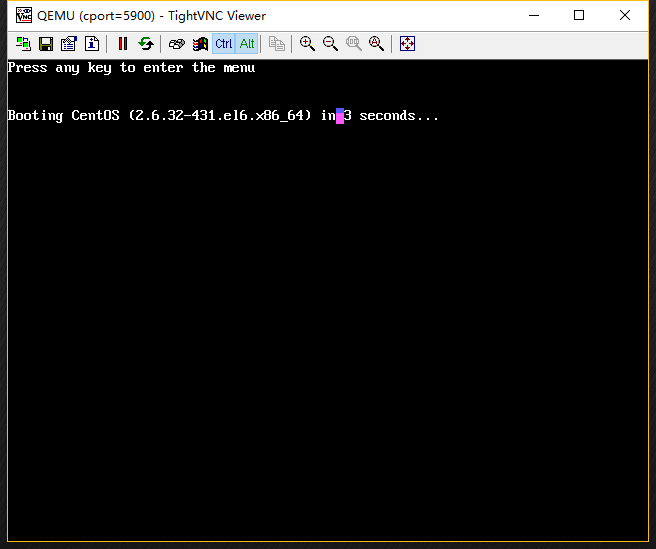
定义域 cport=5900（从 /etc/libvirt/qemu/cport=5900.xml）

[root@ctrl ~(keystone)]# virsh destroy cport=5900

域 cport=5900 被删除

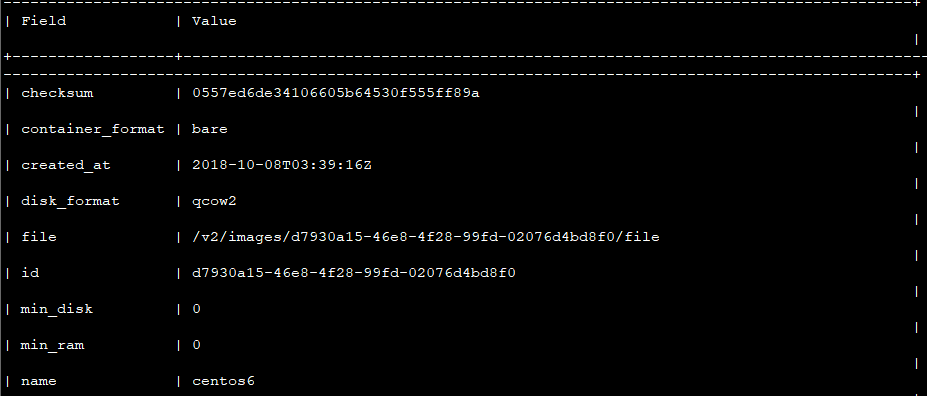
[root@ctrl ~(keystone)]# virsh start cport=5900

域 cport=5900 已开始



* **上传镜像文件到openstack的项目中：**

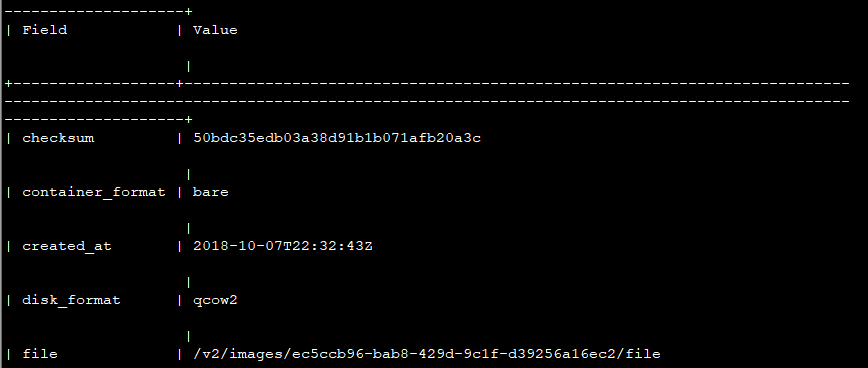
[root@ctrl ~(keystone)]# openstack image create "centos6" --file /var/kvm/images/centos6.img --disk-format qcow2 --container-format bare --public

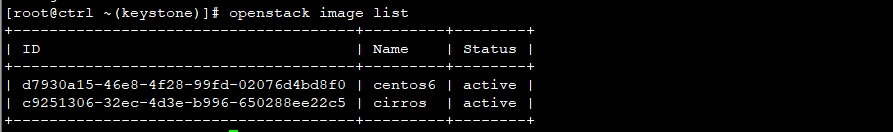
****

[root@ctrl ~(keystone)]# ls /var/kvm/images/cirros-0.3.0-x86\_64-disk.img

/var/kvm/images/cirros-0.3.0-x86\_64-disk.img

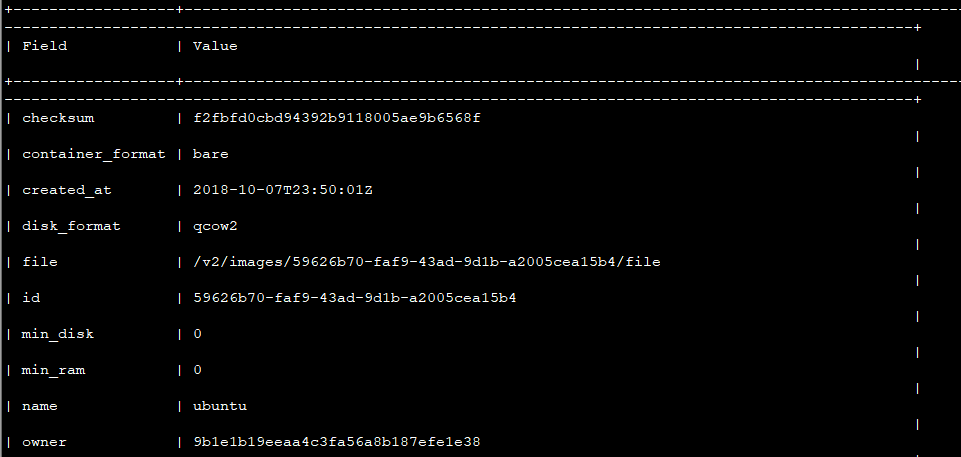
[root@ctrl ~(keystone)]# openstack image create "cirros" --file /var/kvm/images/cirros-0.3.0-x86\_64-disk.img --disk-format qcow2 --container-format bare --public





[root@ctrl ~(keystone)]# wget http://cloud-images.ubuntu.com/releases/18.04/release/ubuntu-18.04-server-cloudimg-amd64.img -P /var/kvm/images

[root@ctrl ~(keystone)]# openstack image create "ubuntu" --file /var/kvm/images/ubuntu-18.04-server-cloudimg-amd64.img --disk-format qcow2 --container-format bare --public



* **安装配置nova计算组件一（创建nova组件项目、注册身份信息、数据库授权）：**

[root@ctrl ~(keystone)]# openstack user create --domain default --project service --password servicepassword nova

+---------------------+----------------------------------+

| Field | Value |

+---------------------+----------------------------------+

| default\_project\_id | 409ebd0b51144e7eae911ebc3d87f523 |

| domain\_id | default |

| enabled | True |

| id | b656c431d6274086b154c71ac4d73a13 |

| name | nova |

| options | {} |

| password\_expires\_at | None |

+---------------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack role add --project service --user nova admin

[root@ctrl ~(keystone)]# openstack user create --domain default --project service --password servicepassword placement

+---------------------+----------------------------------+

| Field | Value |

+---------------------+----------------------------------+

| default\_project\_id | 409ebd0b51144e7eae911ebc3d87f523 |

| domain\_id | default |

| enabled | True |

| id | 90b0dd62d01d4b8e8f942ece5f6a9090 |

| name | placement |

| options | {} |

| password\_expires\_at | None |

+---------------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack role add --project service --user placement admin

[root@ctrl ~(keystone)]# openstack service create --name nova --description "OpenStack Compute service" compute

+-------------+----------------------------------+

| Field | Value |

+-------------+----------------------------------+

| description | OpenStack Compute service |

| enabled | True |

| id | ca713c020ecd42dab904dea5d86358ec |

| name | nova |

| type | compute |

+-------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack service create --name placement --description "OpenStack Compute Placement service" placement

+-------------+-------------------------------------+

| Field | Value |

+-------------+-------------------------------------+

| description | OpenStack Compute Placement service |

| enabled | True |

| id | 4e156636cfaf4c75b78770d24600bf5b |

| name | placement |

| type | placement |

+-------------+-------------------------------------+

[root@ctrl ~(keystone)]# export controller=192.168.100.101

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne compute public http://$controller:8774/v2.1/%\(tenant\_id\)s

+--------------+------------------------------------------------+

| Field | Value |

+--------------+------------------------------------------------+

| enabled | True |

| id | 12aa3dc475374021be93a8d1b6c81182 |

| interface | public |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | ca713c020ecd42dab904dea5d86358ec |

| service\_name | nova |

| service\_type | compute |

| url | http://192.168.100.101:8774/v2.1/%(tenant\_id)s |

+--------------+------------------------------------------------+

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne compute internal http://$controller:8774/v2.1/%\(tenant\_id\)s

+--------------+------------------------------------------------+

| Field | Value |

+--------------+------------------------------------------------+

| enabled | True |

| id | 4388a0e4bb5f4aef9fc1b1779c0a9bb9 |

| interface | internal |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | ca713c020ecd42dab904dea5d86358ec |

| service\_name | nova |

| service\_type | compute |

| url | http://192.168.100.101:8774/v2.1/%(tenant\_id)s |

+--------------+------------------------------------------------+

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne compute admin http://$controller:8774/v2.1/%\(tenant\_id\)s

+--------------+------------------------------------------------+

| Field | Value |

+--------------+------------------------------------------------+

| enabled | True |

| id | 8f20d5b2f13e41d394c5983ad78f4306 |

| interface | admin |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | ca713c020ecd42dab904dea5d86358ec |

| service\_name | nova |

| service\_type | compute |

| url | http://192.168.100.101:8774/v2.1/%(tenant\_id)s |

+--------------+------------------------------------------------+

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne placement public http://$controller:8778

+--------------+----------------------------------+

| Field | Value |

+--------------+----------------------------------+

| enabled | True |

| id | 7890112bf3a540f88764e1acf3b0b171 |

| interface | public |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | 4e156636cfaf4c75b78770d24600bf5b |

| service\_name | placement |

| service\_type | placement |

| url | http://192.168.100.101:8778 |

+--------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne placement internal http://$controller:8778

+--------------+----------------------------------+

| Field | Value |

+--------------+----------------------------------+

| enabled | True |

| id | 322d3588d3b544e0963188153f8c9652 |

| interface | internal |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | 4e156636cfaf4c75b78770d24600bf5b |

| service\_name | placement |

| service\_type | placement |

| url | http://192.168.100.101:8778 |

+--------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne placement admin http://$controller:8778

+--------------+----------------------------------+

| Field | Value |

+--------------+----------------------------------+

| enabled | True |

| id | 3ae51d7d68bf41ddbba970ab675aced2 |

| interface | admin |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | 4e156636cfaf4c75b78770d24600bf5b |

| service\_name | placement |

| service\_type | placement |

| url | http://192.168.100.101:8778 |

+--------------+----------------------------------+

[root@ctrl ~(keystone)]# mysql -uroot -p123123

MariaDB [(none)]> create database nova;   
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> grant all privileges on nova.\* to nova@'localhost' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> grant all privileges on nova.\* to nova@'%' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> create database nova\_api;   
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> grant all privileges on nova\_api.\* to nova@'localhost' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> grant all privileges on nova\_api.\* to nova@'%' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> create database nova\_placement;   
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> grant all privileges on nova\_placement.\* to nova@'localhost' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> grant all privileges on nova\_placement.\* to nova@'%' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> create database nova\_cell0;   
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> grant all privileges on nova\_cell0.\* to nova@'localhost' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> grant all privileges on nova\_cell0.\* to nova@'%' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> flush privileges;   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> exit

* **安装配置nova计算组件二（安装nova程序、修改配置、启动基础服务）：**

[root@ctrl ~(keystone)]# yum -y install openstack-nova

[root@ctrl ~(keystone)]# mv /etc/nova/nova.conf /etc/nova/nova.conf.org

[root@ctrl ~(keystone)]# vi /etc/nova/nova.conf

[DEFAULT]

my\_ip = 192.168.100.101

state\_path = /var/lib/nova

enabled\_apis = osapi\_compute,metadata

log\_dir = /var/log/nova

# RabbitMQ connection info

transport\_url = rabbit://openstack:password@192.168.100.101

[api]

auth\_strategy = keystone

# Glance connection info

[glance]

api\_servers = http://192.168.100.101:9292

[oslo\_concurrency]

lock\_path = $state\_path/tmp

# MariaDB connection info

[api\_database]

connection = mysql+pymysql://nova:password@192.168.100.101/nova\_api

[database]

connection = mysql+pymysql://nova:password@192.168.100.101/nova

# Keystone auth info

[keystone\_authtoken]

www\_authenticate\_uri = http://192.168.100.101:5000

auth\_url = http://192.168.100.101:5000

memcached\_servers = 192.168.100.101:11211

auth\_type = password

project\_domain\_name = default

user\_domain\_name = default

project\_name = service

username = nova

password = servicepassword

[placement]

auth\_url = http://192.168.100.101:5000

os\_region\_name = RegionOne

auth\_type = password

project\_domain\_name = default

user\_domain\_name = default

project\_name = service

username = placement

password = servicepassword

[placement\_database]

connection = mysql+pymysql://nova:password@192.168.100.101/nova\_placement

[wsgi]

api\_paste\_config = /etc/nova/api-paste.ini

:wq

[root@ctrl ~(keystone)]# chmod 640 /etc/nova/nova.conf

[root@ctrl ~(keystone)]# chgrp nova /etc/nova/nova.conf

[root@ctrl ~(keystone)]# vi /etc/httpd/conf.d/00-nova-placement-api.conf

16 <Directory /usr/bin>

17 Require all granted

18 </Directory>

19 </VirtualHost>

:wq

[root@ctrl ~(keystone)]# su -s /bin/bash nova -c "nova-manage api\_db sync"

[root@ctrl ~(keystone)]# su -s /bin/bash nova -c "nova-manage cell\_v2 map\_cell0"

[root@ctrl ~(keystone)]# su -s /bin/bash nova -c "nova-manage db sync"

/usr/lib/python2.7/site-packages/pymysql/cursors.py:170: Warning: (1831, u'Duplicate index `block\_device\_mapping\_instance\_uuid\_virtual\_name\_device\_name\_idx`. This is deprecated and will be disallowed in a future release.')

result = self.\_query(query)

/usr/lib/python2.7/site-packages/pymysql/cursors.py:170: Warning: (1831, u'Duplicate index `uniq\_instances0uuid`. This is deprecated and will be disallowed in a future release.')

result = self.\_query(query)

[root@ctrl ~(keystone)]# su -s /bin/bash nova -c "nova-manage cell\_v2 create\_cell --name cell1"

[root@ctrl ~(keystone)]# systemctl restart httpd

[root@ctrl ~(keystone)]# chown nova. /var/log/nova/nova-placement-api.log

[root@ctrl ~(keystone)]# for service in api consoleauth conductor scheduler novncproxy; do

systemctl start openstack-nova-$service

systemctl enable openstack-nova-$service

done

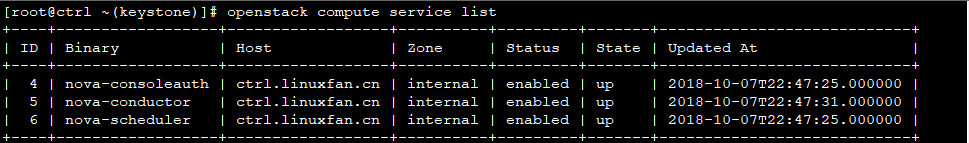
Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-nova-api.service to /usr/lib/systemd/system/openstack-nova-api.service.

Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-nova-consoleauth.service to /usr/lib/systemd/system/openstack-nova-consoleauth.service.

Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-nova-conductor.service to /usr/lib/systemd/system/openstack-nova-conductor.service.

Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-nova-scheduler.service to /usr/lib/systemd/system/openstack-nova-scheduler.service.

Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-nova-novncproxy.service to /usr/lib/systemd/system/openstack-nova-novncproxy.service.



* **安装配置nova计算组件三（安装配置nova-compute程序）：**

[root@ctrl ~(keystone)]# vi /etc/nova/nova.conf ##末尾追加

[vnc]

enabled = True

server\_listen = 0.0.0.0

server\_proxyclient\_address = 192.168.100.101

novncproxy\_base\_url = http://192.168.100.101:6080/vnc\_auto.html

:wq

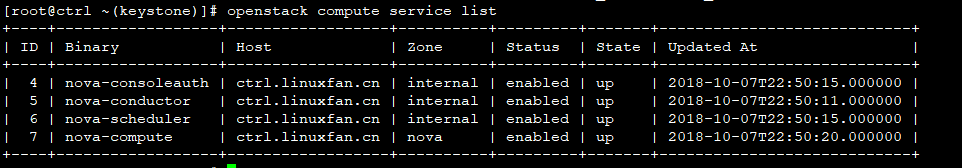
[root@ctrl ~(keystone)]# systemctl start openstack-nova-compute

[root@ctrl ~(keystone)]# systemctl enable openstack-nova-compute

Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-nova-compute.service to /usr/lib/systemd/system/openstack-nova-compute.service.

[root@ctrl ~(keystone)]# su -s /bin/bash nova -c "nova-manage cell\_v2 discover\_hosts"

[root@ctrl ~(keystone)]# openstack compute service list



* **安装配置neutron网络组件一（创建neutron组件项目、数据库授权）：**

[root@ctrl ~(keystone)]# openstack user create --domain default --project service --password servicepassword neutron

+---------------------+----------------------------------+

| Field | Value |

+---------------------+----------------------------------+

| default\_project\_id | 409ebd0b51144e7eae911ebc3d87f523 |

| domain\_id | default |

| enabled | True |

| id | 91ddfad33f424aeb944d1e317bea49ac |

| name | neutron |

| options | {} |

| password\_expires\_at | None |

+---------------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack role add --project service --user neutron admin

[root@ctrl ~(keystone)]# openstack service create --name neutron --description "OpenStack Networking service" network

+-------------+----------------------------------+

| Field | Value |

+-------------+----------------------------------+

| description | OpenStack Networking service |

| enabled | True |

| id | 2cb2aa8cf45b415cb421340c807c204e |

| name | neutron |

| type | network |

+-------------+----------------------------------+

[root@ctrl ~(keystone)]# export controller=192.168.100.101

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne network public http://$controller:9696

+--------------+----------------------------------+

| Field | Value |

+--------------+----------------------------------+

| enabled | True |

| id | 3ac7d86b514f478fa18e69116dff4165 |

| interface | public |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | 2cb2aa8cf45b415cb421340c807c204e |

| service\_name | neutron |

| service\_type | network |

| url | http://192.168.100.101:9696 |

+--------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne network internal http://$controller:9696

+--------------+----------------------------------+

| Field | Value |

+--------------+----------------------------------+

| enabled | True |

| id | 1ad237ba2d4b45f48844262c22b55265 |

| interface | internal |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | 2cb2aa8cf45b415cb421340c807c204e |

| service\_name | neutron |

| service\_type | network |

| url | http://192.168.100.101:9696 |

+--------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack endpoint create --region RegionOne network admin http://$controller:9696

+--------------+----------------------------------+

| Field | Value |

+--------------+----------------------------------+

| enabled | True |

| id | b2f9bf0ae0ac49ee8343925ea60f6f24 |

| interface | admin |

| region | RegionOne |

| region\_id | RegionOne |

| service\_id | 2cb2aa8cf45b415cb421340c807c204e |

| service\_name | neutron |

| service\_type | network |

| url | http://192.168.100.101:9696 |

+--------------+----------------------------------+

[root@ctrl ~(keystone)]# mysql -uroot -p123123

MariaDB [(none)]> create database neutron\_ml2;   
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]> grant all privileges on neutron\_ml2.\* to neutron@'localhost' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> grant all privileges on neutron\_ml2.\* to neutron@'%' identified by 'password';   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> flush privileges;   
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> exit

* **安装配置neutron网络组件二（安装neutron程序、配置启动服务）：**

[root@ctrl ~(keystone)]# yum -y install openstack-neutron openstack-neutron-ml2 openstack-neutron-openvswitch

[root@ctrl ~(keystone)]# mv /etc/neutron/neutron.conf /etc/neutron/neutron.conf.org

[root@ctrl ~(keystone)]# vi /etc/neutron/neutron.conf

[DEFAULT]

core\_plugin = ml2

service\_plugins = router

auth\_strategy = keystone

state\_path = /var/lib/neutron

dhcp\_agent\_notification = True

allow\_overlapping\_ips = True

notify\_nova\_on\_port\_status\_changes = True

notify\_nova\_on\_port\_data\_changes = True

# RabbitMQ connection info

transport\_url = rabbit://openstack:password@192.168.100.101

# Keystone auth info

[keystone\_authtoken]

www\_authenticate\_uri = http://192.168.100.101:5000

auth\_url = http://192.168.100.101:5000

memcached\_servers = 192.168.100.101:11211

auth\_type = password

project\_domain\_name = default

user\_domain\_name = default

project\_name = service

username = neutron

password = servicepassword

# MariaDB connection info

[database]

connection = mysql+pymysql://neutron:password@192.168.100.101/neutron\_ml2

# Nova connection info

[nova]

auth\_url = http://192.168.100.101:5000

auth\_type = password

project\_domain\_name = default

user\_domain\_name = default

region\_name = RegionOne

project\_name = service

username = nova

password = servicepassword

[oslo\_concurrency]

lock\_path = $state\_path/tmp

:wq

[root@ctrl ~(keystone)]# chmod 640 /etc/neutron/neutron.conf

[root@ctrl ~(keystone)]# chgrp neutron /etc/neutron/neutron.conf

[root@ctrl ~(keystone)]# vi /etc/neutron/l3\_agent.ini

17 interface\_driver = neutron.agent.linux.interface.OVSInterfaceDriver

:wq

[root@ctrl ~(keystone)]# vi /etc/neutron/dhcp\_agent.ini

17 interface\_driver = neutron.agent.linux.interface.OVSInterfaceDriver

28 dhcp\_driver = neutron.agent.linux.dhcp.Dnsmasq

37 enable\_isolated\_metadata = true

:wq

[root@ctrl ~(keystone)]# vi /etc/neutron/metadata\_agent.ini

22 nova\_metadata\_host = 192.168.100.101

34 metadata\_proxy\_shared\_secret = metadata\_secret

260 memcache\_servers = 192.168.100.101:11211

:wq

[root@ctrl ~(keystone)]# vi /etc/neutron/plugins/ml2/ml2\_conf.ini

128 [ml2]

129 type\_drivers = flat,vlan,gre,vxlan

130 tenant\_network\_types =

131 mechanism\_drivers = openvswitch,l2population

132 extension\_drivers = port\_security

262 enable\_security\_group = true

263 firewall\_driver = neutron.agent.linux.iptables\_firewall.OVSHybridIptablesFirewallDriver

268 enable\_ipset = True

:wq

[root@ctrl ~(keystone)]# vi /etc/nova/nova.conf

8 [api]

9 use\_neutron = True

10 linuxnet\_interface\_driver = nova.network.linux\_net.LinuxOVSInterfaceDriver

11 firewall\_driver = nova.virt.firewall.NoopFirewallDriver

12 vif\_plugging\_is\_fatal = True

13 vif\_plugging\_timeout = 300

64 [neutron]

65 auth\_url = http://192.168.100.101:5000

66 auth\_type = password

67 project\_domain\_name = default

68 user\_domain\_name = default

69 region\_name = RegionOne

70 project\_name = service

71 username = neutron

72 password = servicepassword

73 service\_metadata\_proxy = True

74 metadata\_proxy\_shared\_secret = metadata\_secret

:wq

[root@ctrl ~(keystone)]# systemctl start openvswitch

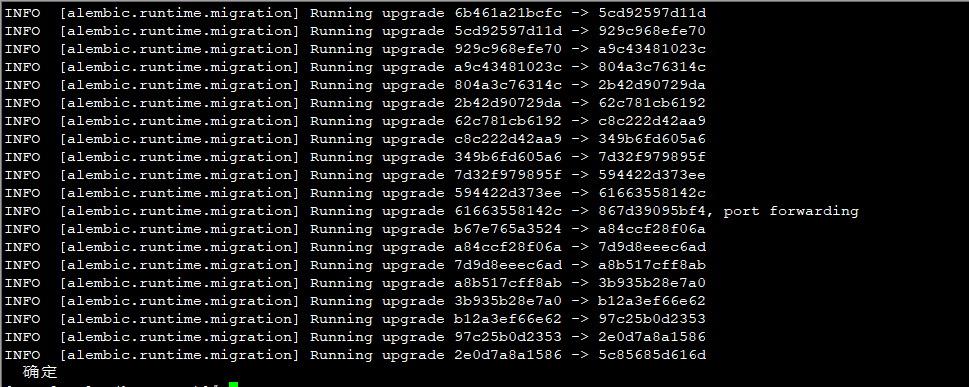
[root@ctrl ~(keystone)]# systemctl enable openvswitch

Created symlink from /etc/systemd/system/multi-user.target.wants/openvswitch.service to /usr/lib/systemd/system/openvswitch.service.

[root@ctrl ~(keystone)]# ovs-vsctl add-br br-int

[root@ctrl ~(keystone)]# ln -s /etc/neutron/plugins/ml2/ml2\_conf.ini /etc/neutron/plugin.ini

[root@ctrl ~(keystone)]# su -s /bin/bash neutron -c "neutron-db-manage --config-file /etc/neutron/neutron.conf --config-file /etc/neutron/plugin.ini upgrade head"



[root@ctrl ~(keystone)]# for service in server dhcp-agent l3-agent metadata-agent openvswitch-agent; do

systemctl start neutron-$service

systemctl enable neutron-$service

done

Created symlink from /etc/systemd/system/multi-user.target.wants/neutron-server.service to /usr/lib/systemd/system/neutron-server.service.

Created symlink from /etc/systemd/system/multi-user.target.wants/neutron-dhcp-agent.service to /usr/lib/systemd/system/neutron-dhcp-agent.service.

Created symlink from /etc/systemd/system/multi-user.target.wants/neutron-l3-agent.service to /usr/lib/systemd/system/neutron-l3-agent.service.

Created symlink from /etc/systemd/system/multi-user.target.wants/neutron-metadata-agent.service to /usr/lib/systemd/system/neutron-metadata-agent.service.

Created symlink from /etc/systemd/system/multi-user.target.wants/neutron-openvswitch-agent.service to /usr/lib/systemd/system/neutron-openvswitch-agent.service.

[root@ctrl ~(keystone)]# systemctl restart openstack-nova-api openstack-nova-compute

[root@ctrl ~(keystone)]# openstack network agent list

+--------------------------------------+--------------------+------------------+-------------------+-------+-------+---------------------------+

| ID | Agent Type | Host | Availability Zone | Alive | State | Binary |

+--------------------------------------+--------------------+------------------+-------------------+-------+-------+---------------------------+

| 0afa493b-f0cb-451b-90cc-0043a5d7d28e | Metadata agent | ctrl.linuxfan.cn | None | :-) | UP | neutron-metadata-agent |

| 8c14f816-84fb-40d3-866e-7bceb1f0f9b8 | Open vSwitch agent | ctrl.linuxfan.cn | None | :-) | UP | neutron-openvswitch-agent |

| c99caac6-68b2-4ae7-9b66-0a51f887ca18 | DHCP agent | ctrl.linuxfan.cn | nova | :-) | UP | neutron-dhcp-agent |

| dd4f5c05-a194-4a9c-a71b-f8e49957a5de | L3 agent | ctrl.linuxfan.cn | nova | :-) | UP | neutron-l3-agent |

+--------------------------------------+--------------------+------------------+-------------------+-------+-------+---------------------------+

* **创建配置neutron网络接口：**

[root@ctrl ~(keystone)]# ovs-vsctl add-br br-eth1

[root@ctrl ~(keystone)]# ovs-vsctl add-port br-eth1 eth1

[root@ctrl ~(keystone)]# vi /etc/neutron/plugins/ml2/ml2\_conf.ini

180 [ml2\_type\_flat]

181 flat\_networks = physnet1

:wq

[root@ctrl ~(keystone)]# vi /etc/neutron/plugins/ml2/openvswitch\_agent.ini

193 [ovs]

194 bridge\_mappings = physnet1:br-eth1

:wq

[root@ctrl ~(keystone)]# systemctl restart neutron-openvswitch-agent

[root@ctrl ~(keystone)]# projectID=$(openstack project list | grep service | awk '{print $2}')

[root@ctrl ~(keystone)]# openstack network create --project $projectID --share --provider-network-type flat --provider-physical-network physnet1 sharednet1

+---------------------------+--------------------------------------+

| Field | Value |

+---------------------------+--------------------------------------+

| admin\_state\_up | UP |

| availability\_zone\_hints | |

| availability\_zones | |

| created\_at | 2018-10-07T23:09:32Z |

| description | |

| dns\_domain | None |

| id | 80c1241e-e3d8-4b76-821e-8de96f9bafda |

| ipv4\_address\_scope | None |

| ipv6\_address\_scope | None |

| is\_default | False |

| is\_vlan\_transparent | None |

| mtu | 1500 |

| name | sharednet1 |

| port\_security\_enabled | True |

| project\_id | 409ebd0b51144e7eae911ebc3d87f523 |

| provider:network\_type | flat |

| provider:physical\_network | physnet1 |

| provider:segmentation\_id | None |

| qos\_policy\_id | None |

| revision\_number | 0 |

| router:external | Internal |

| segments | None |

| shared | True |

| status | ACTIVE |

| subnets | |

| tags | |

| updated\_at | 2018-10-07T23:09:32Z |

+---------------------------+--------------------------------------+

[root@ctrl ~(keystone)]# openstack subnet create subnet1 --network sharednet1 --project $projectID --subnet-range 192.168.100.0/24 --allocation-pool start=192.168.100.250,end=192.168.100.254 --gateway 192.168.100.100 --dns-nameserver 192.168.100.100

+-------------------+--------------------------------------+

| Field | Value |

+-------------------+--------------------------------------+

| allocation\_pools | 192.168.100.250-192.168.100.254 |

| cidr | 192.168.100.0/24 |

| created\_at | 2018-10-07T23:11:31Z |

| description | |

| dns\_nameservers | 192.168.100.100 |

| enable\_dhcp | True |

| gateway\_ip | 192.168.100.100 |

| host\_routes | |

| id | c1d379ee-df75-4d00-89e6-2d7a22a78f1a |

| ip\_version | 4 |

| ipv6\_address\_mode | None |

| ipv6\_ra\_mode | None |

| name | subnet1 |

| network\_id | 80c1241e-e3d8-4b76-821e-8de96f9bafda |

| project\_id | 409ebd0b51144e7eae911ebc3d87f523 |

| revision\_number | 0 |

| segment\_id | None |

| service\_types | |

| subnetpool\_id | None |

| tags | |

| updated\_at | 2018-10-07T23:11:31Z |

+-------------------+--------------------------------------+

[root@ctrl ~(keystone)]# openstack network list

+--------------------------------------+------------+--------------------------------------+

| ID | Name | Subnets |

+--------------------------------------+------------+--------------------------------------+

| 80c1241e-e3d8-4b76-821e-8de96f9bafda | sharednet1 | c1d379ee-df75-4d00-89e6-2d7a22a78f1a |

+--------------------------------------+------------+--------------------------------------+

[root@ctrl ~(keystone)]# openstack subnet list

+--------------------------------------+---------+--------------------------------------+------------------+

| ID | Name | Network | Subnet |

+--------------------------------------+---------+--------------------------------------+------------------+

| c1d379ee-df75-4d00-89e6-2d7a22a78f1a | subnet1 | 80c1241e-e3d8-4b76-821e-8de96f9bafda | 192.168.100.0/24 |

+--------------------------------------+---------+--------------------------------------+------------------

* **创建云主机实例类型：**

[root@ctrl ~(keystone)]# openstack project create --domain default --description "Hiroshima Project" hiroshima

+-------------+----------------------------------+

| Field | Value |

+-------------+----------------------------------+

| description | Hiroshima Project |

| domain\_id | default |

| enabled | True |

| id | 6fc357714c414a72aa6e91163f42133c |

| is\_domain | False |

| name | hiroshima |

| parent\_id | default |

| tags | [] |

+-------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack user create --domain default --project hiroshima --password userpassword serverworld

+---------------------+----------------------------------+

| Field | Value |

+---------------------+----------------------------------+

| default\_project\_id | 6fc357714c414a72aa6e91163f42133c |

| domain\_id | default |

| enabled | True |

| id | b2fe3924a58f418e9ec21c5b400fce42 |

| name | serverworld |

| options | {} |

| password\_expires\_at | None |

+---------------------+----------------------------------+

[root@ctrl ~(keystone)]# openstack role create CloudUser

+-----------+----------------------------------+

| Field | Value |

+-----------+----------------------------------+

| domain\_id | None |

| id | 84c41679f0de471a87ff4a7e4f75d91c |

| name | CloudUser |

+-----------+----------------------------------+

[root@ctrl ~(keystone)]# openstack role add --project hiroshima --user serverworld CloudUser

[root@ctrl ~(keystone)]# openstack flavor create --id 0 --vcpus 1 --ram 2048 --disk 10 m1.small

+----------------------------+----------+

| Field | Value |

+----------------------------+----------+

| OS-FLV-DISABLED:disabled | False |

| OS-FLV-EXT-DATA:ephemeral | 0 |

| disk | 10 |

| id | 0 |

| name | m1.small |

| os-flavor-access:is\_public | True |

| properties | |

| ram | 2048 |

| rxtx\_factor | 1.0 |

| swap | |

| vcpus | 1 |

+----------------------------+----------+

* **基于Centos6镜像创建云主机实例（验证各个组件列表、创建安全组、添加安全组策略、创建云主机实例）：**

[root@ctrl ~(keystone)]# openstack flavor list

+----+----------+------+------+-----------+-------+-----------+

| ID | Name | RAM | Disk | Ephemeral | VCPUs | Is Public |

+----+----------+------+------+-----------+-------+-----------+

| 0 | m1.small | 2048 | 10 | 0 | 1 | True |

+----+----------+------+------+-----------+-------+-----------+

[root@ctrl ~(keystone)]# openstack image list

+--------------------------------------+---------+--------+

| ID | Name | Status |

+--------------------------------------+---------+--------+

| d7930a15-46e8-4f28-99fd-02076d4bd8f0 | centos6 | active |

| c9251306-32ec-4d3e-b996-650288ee22c5 | cirros | active |

+--------------------------------------+---------+--------+

[root@ctrl ~(keystone)]# openstack network list

+--------------------------------------+------------+--------------------------------------+

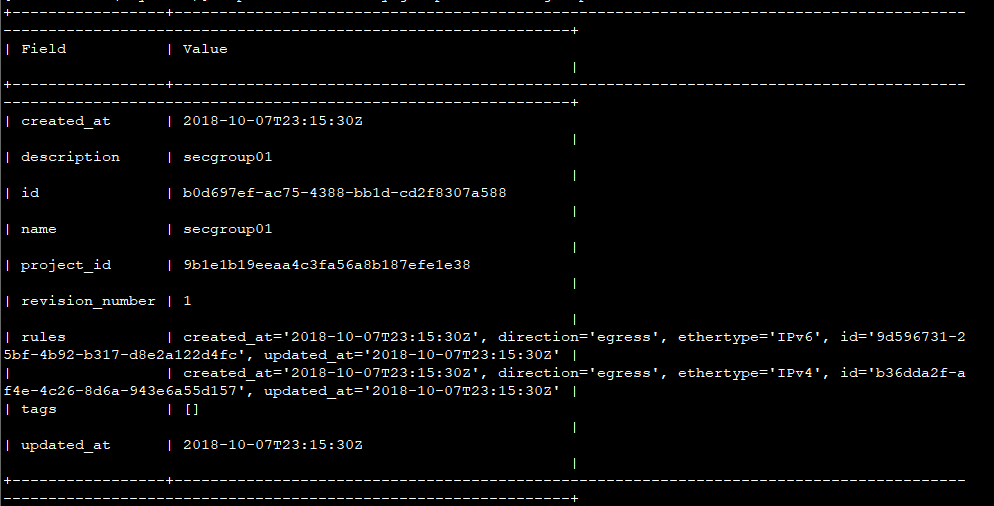
| ID | Name | Subnets |

+--------------------------------------+------------+--------------------------------------+

| 80c1241e-e3d8-4b76-821e-8de96f9bafda | sharednet1 | c1d379ee-df75-4d00-89e6-2d7a22a78f1a |

+--------------------------------------+------------+--------------------------------------+

[root@ctrl ~(keystone)]# openstack security group create secgroup01

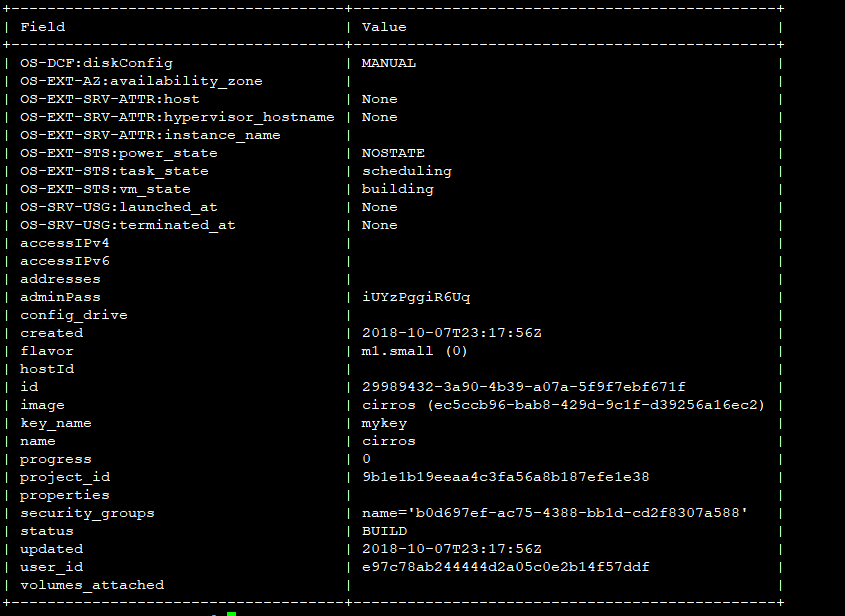


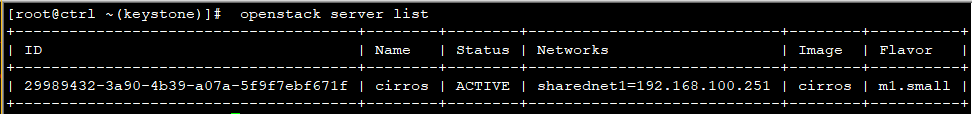




[root@ctrl ~(keystone)]# netID=$(openstack network list | grep sharednet1 | awk '{ print $2 }')

[root@ctrl ~(keystone)]# openstack server create --flavor m1.small --image cirros --security-group secgroup01 --nic net-id=$netID --key-name mykey cirros



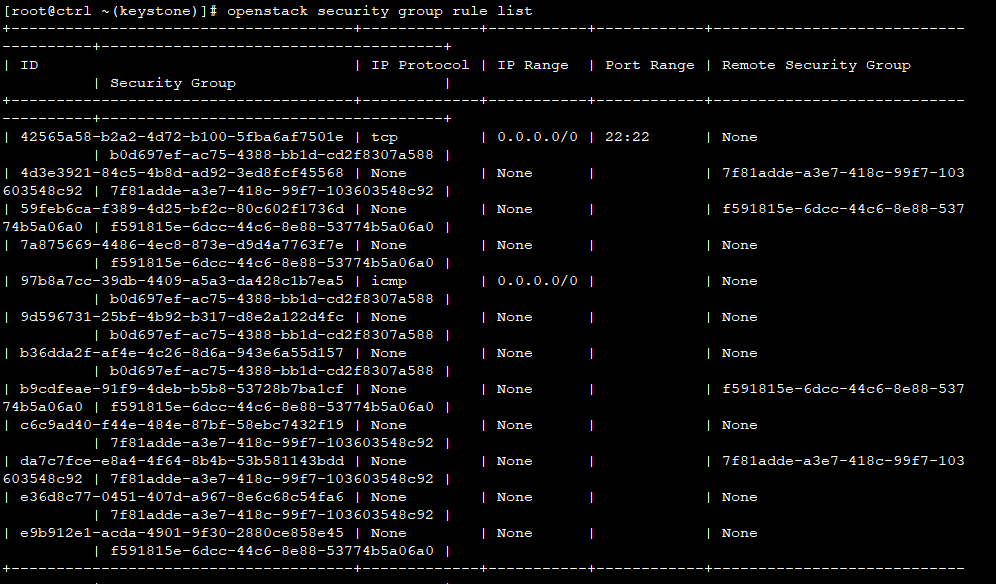


[root@ctrl ~(keystone)]# openstack security group rule create --protocol icmp --ingress secgroup01



[root@ctrl ~(keystone)]# openstack security group rule create --protocol tcp --dst-port 22:22 secgroup01





* **安装配置horizon组件（准备dashboard组件）：**

[root@ctrl ~(keystone)]# yum -y install openstack-dashboard

[root@ctrl ~(keystone)]# vi /etc/openstack-dashboard/local\_settings

38 ALLOWED\_HOSTS = ['ctrl.linuxfan.cn', 'localhost']

64 OPENSTACK\_API\_VERSIONS = {

65 # "data-processing": 1.1,

66 "identity": 3,

67 "volume": 2,

68 "compute": 2,

69 }

75 OPENSTACK\_KEYSTONE\_MULTIDOMAIN\_SUPPORT = True

97 OPENSTACK\_KEYSTONE\_DEFAULT\_DOMAIN = 'Default'

160 CACHES = {

161 'default': {

162 'BACKEND': 'django.core.cache.backends.locmem.LocMemCache',

163 'LOCATION': '192.168.100.101:11211',

164 },

165 }

184 OPENSTACK\_HOST = "192.168.100.101"

:wq

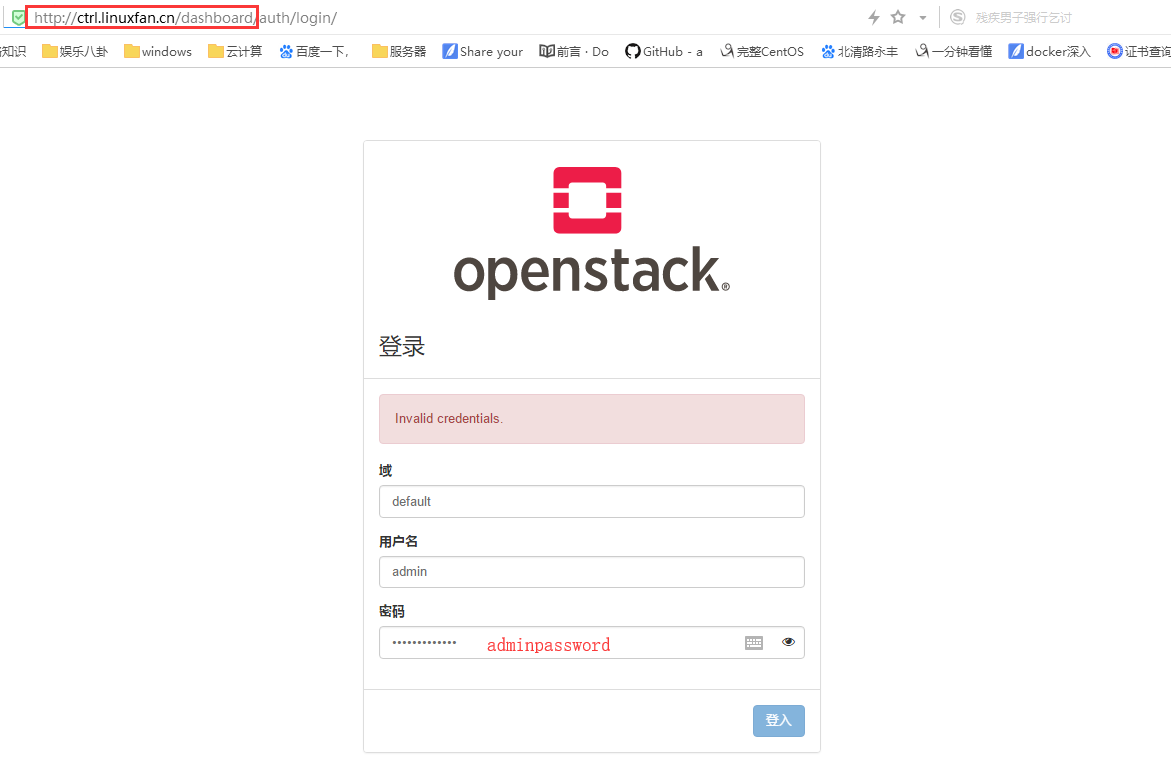
[root@ctrl ~(keystone)]# vi /etc/httpd/conf.d/openstack-dashboard.conf

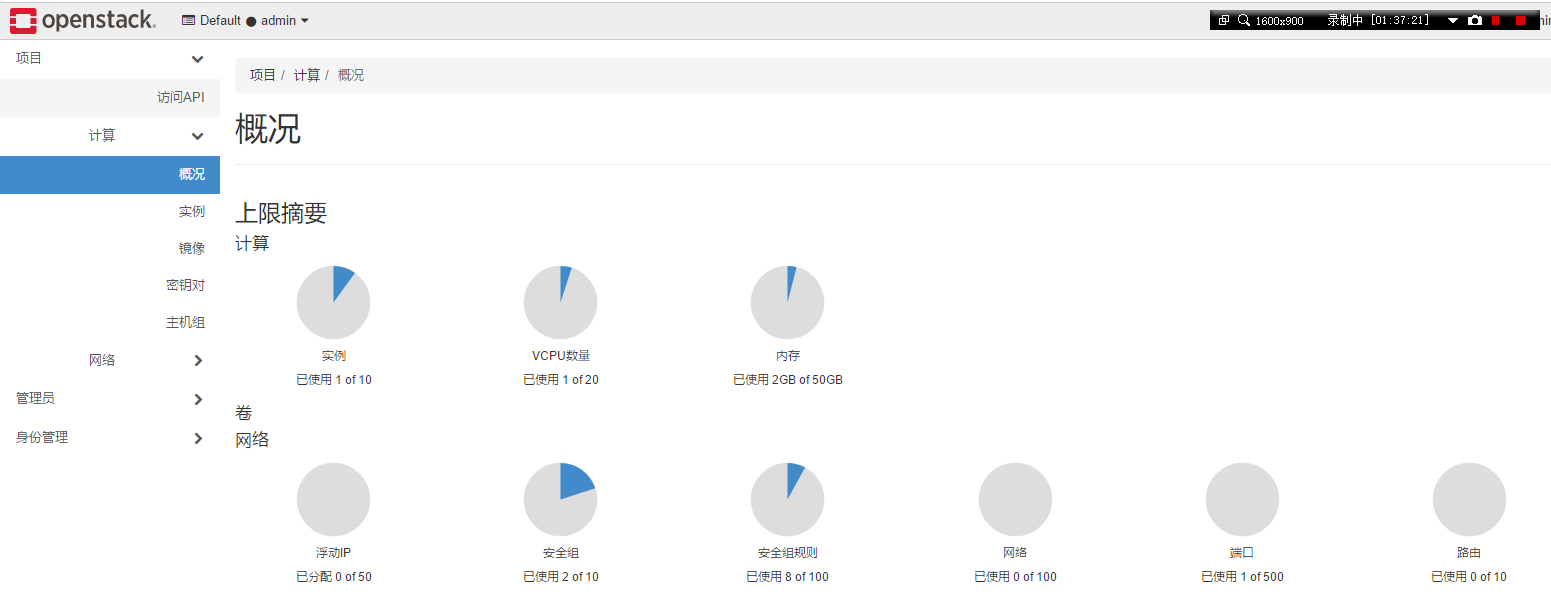
4 WSGIApplicationGroup %{GLOBAL}

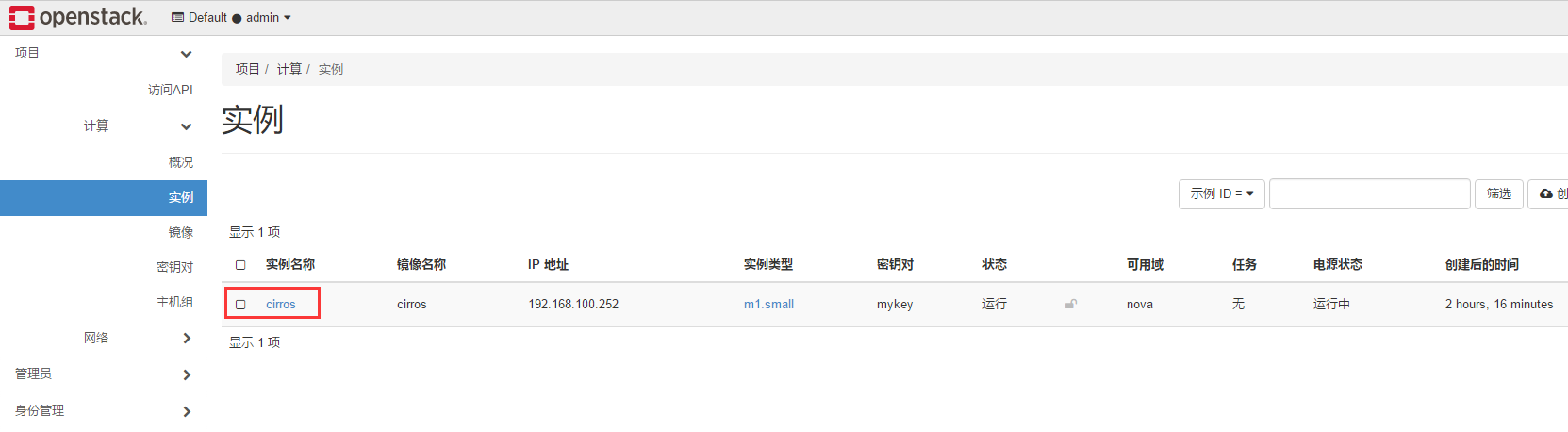
:wq

[root@ctrl ~(keystone)]# systemctl restart httpd

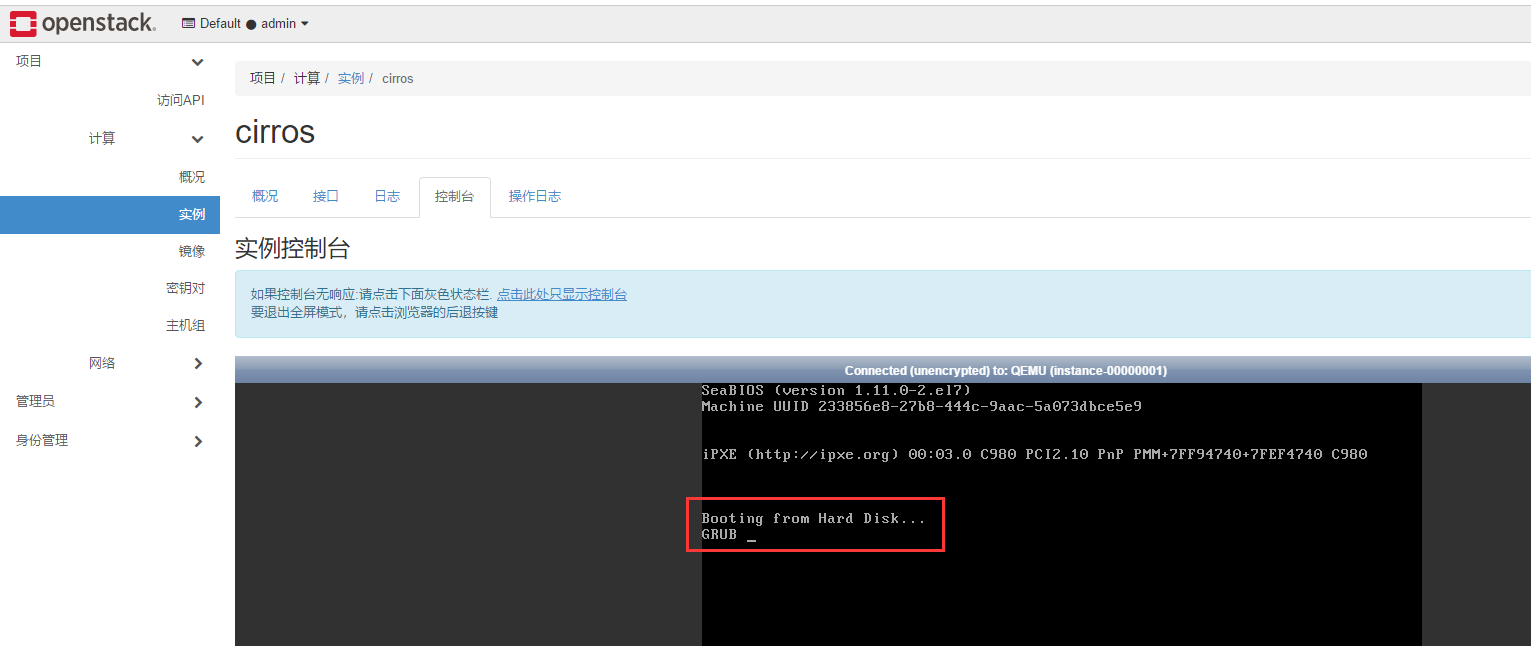
* **使用浏览器访问测试Dashboard页面：**







* **基于浏览器管理openstack实例：**



注解：访问控制台发现cirros实例无法访问，此问题由于镜像文件格式问题所导致，解决方案如下：

[root@ctrl images(keystone)]# openstack image list ##查看镜像ID

+--------------------------------------+---------+--------+

| ID | Name | Status |

+--------------------------------------+---------+--------+

| d7930a15-46e8-4f28-99fd-02076d4bd8f0 | centos6 | active |

| c9251306-32ec-4d3e-b996-650288ee22c5 | cirros | active |

+--------------------------------------+---------+--------+

[root@ctrl images(keystone)]# openstack image set --property hw\_disk\_bus=ide --property hw\_vif\_model=e1000 c9251306-32ec-4d3e-b996-650288ee22c5 ##将上述镜像格式设置为ide格式

注解：如若创建云主机实例出现错误，显示找不到有效的主机，500，此问题由于nova节点资源不足导致，可以通过扩大单点nova节点资源或者添加新的nova节点即可：

删除原有主机实例，基于更改后的镜像文件进行创建实例，测试云主机启动状态：

