云操作系统应用

CONTENTS

目 录

一、 Cinder基本概念

Cinder从OpenStack的Folsom版本（于2012 年9月发布）开始出现，用以替代 Nova-volume 服务，Cinder 为 OpenStack 提供了管理卷（Volume）的基础设施。

二、安装配置控制节点

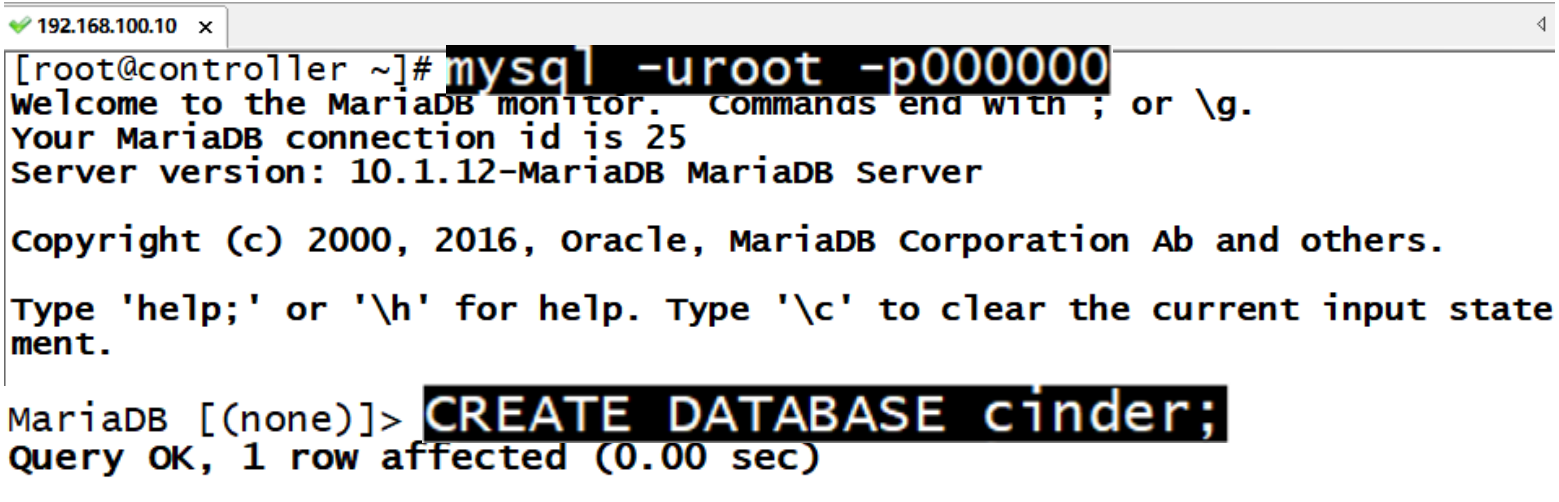
以下操作在控制节点完成。

安装配置Cinder

1.数据库配置

登录 MySQL 并创建 Cinder 数据库：

```
# mysql -uroot -p000000
MariaDB [(none)]> CREATE DATABASE cinder;
```

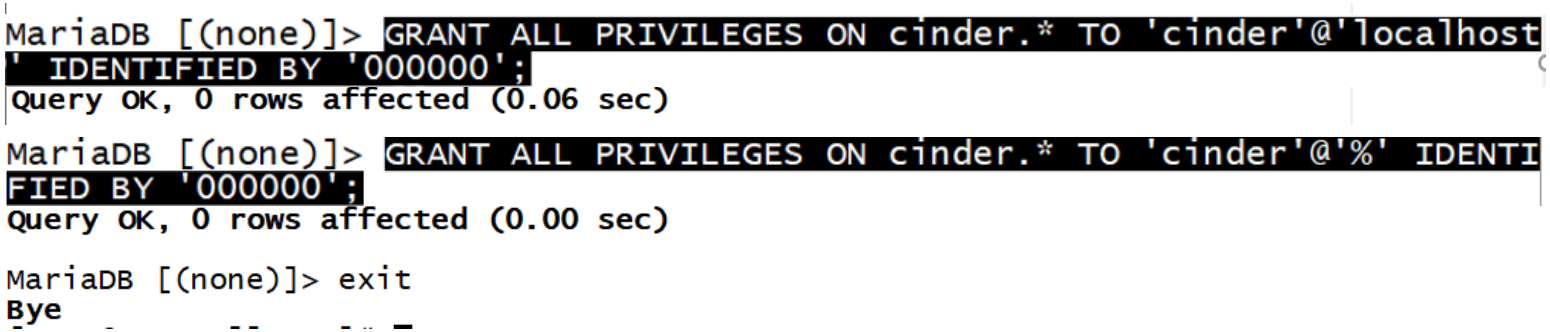


安装配置Cinder

1.数据库配置

设置授权用户和密码：

```
MariaDB [(none)]> GRANT ALL PRIVILEGES ON cinder.* TO 'cinder'@'localhost' IDENTIFIED BY '000000';
MariaDB [(none)]>GRANT ALL PRIVILEGES ON cinder.* TO 'cinder'@'%' IDENTIFIED BY '000000';
MariaDB [(none)]> exit
```



安装配置Cinder

2.创建服务凭证和 API 端点

生效 admin 用户环境变量

```
# . admin-openrc
```

```
[root@controller ~]# . admin-openrc
```

创建名为 cinder 的 user：

```
# openstack user create --domain default --password-prompt cinder
```

```
[root@controller ~]# openstack user create --domain default --password-p
rompt cinder
User Password:
Repeat User Password:
+-----------+----------------------------------+
| Field     | Value                            |
+-----------+----------------------------------+
| domain_id | 2be3e7b66a5641c7a6ea951a3d8b158d |
| enabled   | True                             |
| id        | f8d256ee2d4049959c7aad2d630b46e2 |
| name      | cinder                           |
+-----------+----------------------------------+
```

安装配置Cinder

2.创建服务凭证和 API 端点

进行关联：

```
# openstack role add --project service --user cinder admin
```

```
[root@controller ~]# openstack role add --project service --user cinder
admin
```

创建 Cinder 服务实体认证 volume 和 volumev2：

```
# openstack service create --name cinder --description "OpenStack Block Storage" volume
# openstack service create --name cinderv2 --description "OpenStack Block Storage" volumev2
```

```
[root@controller ~]# openstack service create --name cinder --descriptio
n "OpenStack Block Storage" volume
+-------------+----------------------------------+
| Field       | Value                            |
+-------------+----------------------------------+
| description | OpenStack Block Storage          |
| enabled     | True                             |
| id          | dc0e677ade374ef49b282051794a74d8 |
| name        | cinder                           |
| type        | volume                           |
+-------------+----------------------------------+
[root@controller ~]# openstack service create --name cinderv2 --descript
ion "OpenStack Block Storage" volumev2
+-------------+----------------------------------+
| Field       | Value                            |
+-------------+----------------------------------+
| description | OpenStack Block Storage          |
| enabled     | True                             |
| id          | 14fba458b397406589891c1f6b95c33d |
| name        | cinderv2                         |
| type        | volumev2                         |
+-------------+----------------------------------+
```

安装配置Cinder

2.创建服务凭证和 API 端点

创建公共端点

```
# openstack endpoint create --region RegionOne volume public http://controller:8776/v1/%\(tenant_id\)s
# openstack endpoint create --region RegionOne volumev2 public http://controller:8776/v2/%\(tenant_id\)s
```

```
[root@controller ~]# openstack endpoint create --region RegionOne volume
public http://controller:8776/v1/%\(tenant_id\)s
+--------------+-----------------------------------------+
| Field        | Value                                   |
+--------------+-----------------------------------------+
| enabled      | True                                    |
| id           | 1920af67e5a84214be2350abc7ba29bf        |
| interface    | public                                  |
| region       | RegionOne                               |
| region_id    | RegionOne                               |
| service_id   | e954c90ec30047019964661497e53475        |
| service_name | cinder                                  |
| service_type | volume                                  |
| url          | http://controller:8776/v1/%(tenant_id)s |
+--------------+-----------------------------------------+
[root@controller ~]# openstack endpoint create --region RegionOne volume
v2 public http://controller:8776/v2/%\(tenant_id\)s
+--------------+-----------------------------------------+
| Field        | Value                                   |
+--------------+-----------------------------------------+
| enabled      | True                                    |
| id           | 1f84d5ac9ff24d5db9195b3470567024        |
| interface    | public                                  |
| region       | RegionOne                               |
| region_id    | RegionOne                               |
| service_id   | 7518d6776b8b465eb143b42ca44db09e        |
| service_name | cinderv2                                |
| service_type | volumev2                                |
| url          | http://controller:8776/v2/%(tenant_id)s |
+--------------+-----------------------------------------+
```

安装配置Cinder

2.创建服务凭证和 API 端点

创建外部端点

```
# openstack endpoint create --region RegionOne volume internal http://controller:8776/v1/%\(tenant_id\)s
# openstack endpoint create --region RegionOne volumev2 internal http://controller:8776/v2/%\(tenant_id\)s
```

```
[root@controller ~]# openstack endpoint create --region RegionOne volume
 internal http://controller:8776/v1/%\(tenant_id\)s
+--------------+-----------------------------------------+
| Field        | Value                                   |
+--------------+-----------------------------------------+
| enabled      | True                                    |
| id           | e2c8170497974d2eb271d1d39732b181        |
| interface    | internal                                |
| region       | RegionOne                               |
| region_id    | RegionOne                               |
| service_id   | e954c90ec30047019964661497e53475        |
| service_name | cinder                                  |
| service_type | volume                                  |
| url          | http://controller:8776/v1/%(tenant_id)s |
[root@controller ~]# openstack endpoint create --region RegionOne volume
v2 internal http://controller:8776/v2/%\(tenant_id\)s
+--------------+-----------------------------------------+
| Field        | Value                                   |
+--------------+-----------------------------------------+
| enabled      | True                                    |
| id           | 2a31a8dc4fab4032a3155a362643ab1a        |
| interface    | internal                                |
| region       | RegionOne                               |
| region_id    | RegionOne                               |
| service_id   | 7518d6776b8b465eb143b42ca44db09e        |
| service_name | cinderv2                                |
| service_type | volumev2                                |
| url          | http://controller:8776/v2/%(tenant_id)s |
+--------------+-----------------------------------------+
```

安装配置Cinder

2.创建服务凭证和 API 端点

创建管理端点

```
# openstack endpoint create --region RegionOne volume admin http://controller:8776/v1/%\(tenant_id\)s
# openstack endpoint create --region RegionOne volumev2 admin http://controller:8776/v2/%\(tenant_id\)s
```

```
[root@controller ~]# openstack endpoint create --region RegionOne volume
admin http://controller:8776/v1/%\(tenant_id\)s
+--------------+-----------------------------------------+
| Field        | Value                                   |
+--------------+-----------------------------------------+
| enabled      | True                                    |
| id           | 476083ee1f8b4251ba69e06d087b461d        |
| interface    | admin                                   |
| region       | RegionOne                               |
| region_id    | RegionOne                               |
| service_id   | e954c90ec30047019964661497e53475        |
| service_name | cinder                                  |
| service_type | volume                                  |
| url          | http://controller:8776/v1/%(tenant_id)s |
+--------------+-----------------------------------------+
[root@controller ~]# openstack endpoint create --region RegionOne volume
v2 admin http://controller:8776/v2/%\(tenant_id\)s
+--------------+-----------------------------------------+
| Field        | Value                                   |
+--------------+-----------------------------------------+
| enabled      | True                                    |
| id           | b16f23faa71d443bac44f0d2a98c536e        |
| interface    | admin                                   |
| region       | RegionOne                               |
| region_id    | RegionOne                               |
| service_id   | 7518d6776b8b465eb143b42ca44db09e        |
| service_name | cinderv2                                |
| service_type | volumev2                                |
| url          | http://controller:8776/v2/%(tenant_id)s |
+--------------+-----------------------------------------+
```

安装配置Cinder

3.安装并配置 Cinder 组件

安装 Cinder 组件所需软件包

```
# yum install openstack-cinder -y
```

```
[root@controller ~]# yum install openstack-cinder -y
Loaded plugins: fastestmirror
Repodata is over 2 weeks old. Install yum-cron? Or run: yum makecache fas
t
centos                                                   | 3.6 kB     00:00
mitaka                                                   | 2.9 kB     00:00
Determining fastest mirrors
Package 1:openstack-cinder-8.0.0-1.el7.noarch already installed and lates
t version
Nothing to do
[root@controller ~]# yum remove openstack-cinder
Loaded plugins: fastestmirror
Resolving Dependencies
--> Running transaction check
---> Package openstack-cinder.noarch 1:8.0.0-1.el7 will be erased
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package                Arch         Version              Repository     Size
================================================================================
Removing:
```

安装配置Cinder

3.安装并配置 Cinder 组件

编辑/etc/cinder/cinder.conf 文件。
编辑[database]部分，配置数据库链接。

```
[database]
connection = mysql+pymysql://cinder:000000@controller/cinder
```

```
[database]
connection = mysql+pymysql://cinder:000000@controller/cinder
```

编辑[DEFAULT]和[oslo_messaging_rabbit]部分，配置 RabbitMQ 消息服务器链接。

```
[DEFAULT]
rpc_backend = rabbit
[oslo_messaging_rabbit]
rabbit_host = controller
rabbit_userid = openstack
rabbit_password = 000000
```

```
[DEFAULT]
rpc_backend = rabbit

[oslo_messaging_rabbit]
rabbit_host = controller
rabbit_userid = openstack
rabbit_password = 000000
```

安装配置Cinder

3.安装并配置 Cinder 组件

编辑[DEFAULT]和[keystone_authtoken]部分，配置 Keystone 身份认证。

```
[DEFAULT]
auth_strategy = keystone

[keystone_authtoken]
auth_uri = http://controller:5000
auth_url = http://controller:35357
memcached_servers = controller:11211
auth_type = password
project_domain_name = default
user_domain_name = default
project_name = service
username = cinder
password = 000000
```

安装配置Cinder

3.安装并配置 Cinder 组件

编辑[DEFAULT]和[keystone_authtoken]部分，配置 Keystone 身份认证。

```
[DEFAULT]
rpc_backend = rabbit
auth_strategy = keystone

[keystone_authtoken]
auth_uri = http://controller:5000
auth_url = http://controller:35357
memcached_servers = controller:11211
auth_type = password
project_domain_name = default
user_domain_name = default
project_name = service
username = cinder
password = 000000
```

安装配置Cinder

3.安装并配置 Cinder 组件

编辑[DEFAULT]部分，配置控制节点管理 IP 地址。

```
[DEFAULT]
my_ip = 192.168.100.10
```

```
[DEFAULT]
rpc_backend = rabbit
auth_strategy = keystone
my_ip = 192.168.100.10
```

编辑[oslo_concurrency]部分，配置 loca_path。

```
[oslo_concurrency]
lock_path = /var/lib/cinder/tmp
```

```
[oslo_concurrency]
lock_path = /var/lib/cinder/tmp
```

安装配置Cinder

3.安装并配置 Cinder 组件

同步数据库

```
# su -s /bin/sh -c "cinder-manage db sync" cinder
```

```
[root@controller ~]# su -s /bin/sh -c "cinder-manage db sync" cinder
Option "logdir" from group "DEFAULT" is deprecated. Use option "log-dir" from group "DEFAULT".
2017-12-15 15:39:30.985 3205 WARNING py.warnings [-] /usr/lib/python2.7/site-packages/oslo_db/sqlalchemy/enginefacade.py
:241: NotSupportedWarning: Configuration option(s) ['use_tpool'] not supported
  exception.NotSupportedWarning

2017-12-15 15:39:31.585 3205 INFO migrate.versioning.api [-] 0 -> 1...
2017-12-15 15:39:35.758 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:35.758 3205 INFO migrate.versioning.api [-] 1 -> 2...
2017-12-15 15:39:36.834 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:36.834 3205 INFO migrate.versioning.api [-] 2 -> 3...
2017-12-15 15:39:37.113 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:37.114 3205 INFO migrate.versioning.api [-] 3 -> 4...
2017-12-15 15:39:39.114 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:39.115 3205 INFO migrate.versioning.api [-] 4 -> 5...
2017-12-15 15:39:39.443 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:39.443 3205 INFO migrate.versioning.api [-] 5 -> 6...
2017-12-15 15:39:39.825 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:39.825 3205 INFO migrate.versioning.api [-] 6 -> 7...
2017-12-15 15:39:41.598 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:41.599 3205 INFO migrate.versioning.api [-] 7 -> 8...
2017-12-15 15:39:41.620 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:41.620 3205 INFO migrate.versioning.api [-] 8 -> 9...
2017-12-15 15:39:41.654 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:41.654 3205 INFO migrate.versioning.api [-] 9 -> 10...
2017-12-15 15:39:41.675 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:41.676 3205 INFO migrate.versioning.api [-] 10 -> 11...
2017-12-15 15:39:41.709 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:41.709 3205 INFO migrate.versioning.api [-] 11 -> 12...
2017-12-15 15:39:42.001 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:42.001 3205 INFO migrate.versioning.api [-] 12 -> 13...
2017-12-15 15:39:42.464 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:42.464 3205 INFO migrate.versioning.api [-] 13 -> 14...
2017-12-15 15:39:42.510 3205 INFO migrate.versioning.api [-] done
```

安装配置Cinder

3.安装并配置 Cinder 组件

同步数据库

```
2017-12-15 15:39:42.510 3205 INFO migrate.versioning.api [-] 14 -> 15...
2017-12-15 15:39:42.762 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:42.762 3205 INFO migrate.versioning.api [-] 15 -> 16...
2017-12-15 15:39:42.920 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:42.920 3205 INFO migrate.versioning.api [-] 16 -> 17...
2017-12-15 15:39:44.400 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:44.400 3205 INFO migrate.versioning.api [-] 17 -> 18...
2017-12-15 15:39:45.508 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:45.509 3205 INFO migrate.versioning.api [-] 18 -> 19...
2017-12-15 15:39:45.876 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:45.876 3205 INFO migrate.versioning.api [-] 19 -> 20...
2017-12-15 15:39:46.167 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:46.168 3205 INFO migrate.versioning.api [-] 20 -> 21...
2017-12-15 15:39:46.251 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:46.251 3205 INFO migrate.versioning.api [-] 21 -> 22...
2017-12-15 15:39:47.857 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:47.857 3205 INFO migrate.versioning.api [-] 22 -> 23...
2017-12-15 15:39:47.875 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:47.875 3205 INFO migrate.versioning.api [-] 23 -> 24...
2017-12-15 15:39:47.925 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:47.926 3205 INFO migrate.versioning.api [-] 24 -> 25...
2017-12-15 15:39:50.664 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:50.665 3205 INFO migrate.versioning.api [-] 25 -> 26...
2017-12-15 15:39:50.696 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:50.696 3205 INFO migrate.versioning.api [-] 26 -> 27...
2017-12-15 15:39:50.701 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:50.701 3205 INFO migrate.versioning.api [-] 27 -> 28...
2017-12-15 15:39:50.706 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:50.707 3205 INFO migrate.versioning.api [-] 28 -> 29...
2017-12-15 15:39:50.713 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:50.714 3205 INFO migrate.versioning.api [-] 29 -> 30...
2017-12-15 15:39:50.719 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:50.719 3205 INFO migrate.versioning.api [-] 30 -> 31...
2017-12-15 15:39:50.724 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:39:50.724 3205 INFO migrate.versioning.api [-] 31 -> 32...
2017-12-15 15:40:11.702 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:40:11.702 3205 INFO migrate.versioning.api [-] 68 -> 69...
2017-12-15 15:40:11.710 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:40:11.711 3205 INFO migrate.versioning.api [-] 69 -> 70...
2017-12-15 15:40:11.717 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:40:11.718 3205 INFO migrate.versioning.api [-] 70 -> 71...
2017-12-15 15:40:11.725 3205 INFO migrate.versioning.api [-] done
2017-12-15 15:40:11.725 3205 INFO migrate.versioning.api [-] 71 -> 72...
2017-12-15 15:40:11.730 3205 INFO migrate.versioning.api [-] done
```

安装配置Cinder

3.安装并配置 Cinder 组件

编辑/etc/nova/nova.conf 文件
配置 Nova 服务使用 Cinder

```
[cinder]
os_region_name = RegionOne
```


```
[cinder]
os_region_name = RegionOne
```


启动并设置 Cinder 服务开机自启

```
# systemctl restart openstack-nova-api.service
# systemctl enable openstack-cinder-api.service openstack-cinder-scheduler.service
# systemctl start openstack-cinder-api.service openstack-cinder-scheduler.service
```

```
[root@controller ~]# systemctl restart openstack-nova-api.service
[root@controller ~]# systemctl enable openstack-cinder-api.service openstack-cinder-scheduler.service
Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-cinder-api.service to /usr/lib/systemd/system/openstack-cinder-api.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-cinder-scheduler.service to /usr/lib/systemd/system/openstack-cinder-scheduler.service.
```

安装配置Cinder

3.安装并配置 Cinder 组件

启动并设置 Cinder 服务开机自启

```
# systemctl start openstack-cinder-api.service openstack-cinder-scheduler.service
```

```
[root@controller ~]# systemctl start openstack-cinder-api.service openstack-ci
nder-scheduler.service
```

三、安装配置存储节点

注：为简单起见，这里配置一个存储节点，包含两个空本地块存储设备/dev/sdb和/dev/sdc。

注：因为又添加了一个存储节点，所以然需要按照本书的第 3 章、第 4 章、第 6 章、第 7 章做准备环境的操作。

（1）存储节点 1 的管理 IP 地址为 192.168.100.30；主机名为 storage1。

（2）配置 hosts 文件配对，对所有的主机都需要进行更新配置。

（3）安全配置（关闭防火墙、Selinux）、配置 yum 源、NTP 以及安装 OpenStack 包。

以下操作在存储节点完成。

安装配置Cinder

1.安装工具包

安装软件包

```
# yum install lvm2 -y
```

```
192.168.100.30 ×
[root@compute ~]# yum install lvm2 -y
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
Resolving Dependencies
--> Running transaction check
---> Package lvm2.x86_64 7:2.02.130-5.el7_2.5 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package      Arch           Version                     Repository      Size
================================================================================
Installing:
 lvm2         x86_64         7:2.02.130-5.el7_2.5        mitaka         1.0 M

Transaction Summary
================================================================================
Install  1 Package

Total download size: 1.0 M
Installed size: 2.1 M
Downloading packages:
lvm2-2.02.130-5.el7_2.5.x86_64.rpm                          | 1.0 MB   00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : 7:lvm2-2.02.130-5.el7_2.5.x86_64                            1/1
Created symlink from /etc/systemd/system/sysinit.target.wants/lvm2-lvmpolld.sock
et to /usr/lib/systemd/system/lvm2-lvmpolld.socket.
  Verifying  : 7:lvm2-2.02.130-5.el7_2.5.x86_64                            1/1

Installed:
  lvm2.x86_64 7:2.02.130-5.el7_2.5

Complete!
```

安装配置Cinder

1.安装工具包

启动并设置 lvm2 开机自启。

```
# systemctl enable lvm2-lvmetad.service
# systemctl start lvm2-lvmetad.service
```

```
[root@compute ~]# systemctl enable lvm2-lvmetad.service
Created symlink from /etc/systemd/system/sysinit.target.wants/lvm2-lvmetad.servi
ce to /usr/lib/systemd/system/lvm2-lvmetad.service.
[root@compute ~]# systemctl start lvm2-lvmetad.service
```

创建物理卷/dev/sdb

```
# pvcreate /dev/sdb
```

```
[root@compute ~]# pvcreate /dev/sdb
  Physical volume "/dev/sdb" successfully created
```

创建卷组 cinder-volumes

```
# vgcreate cinder-volumes /dev/sdb
```

```
[root@compute ~]# vgcreate cinder-volumes /dev/sdb
  Volume group "cinder-volumes" successfully created
```

安装配置Cinder

1.安装工具包

配置 lvm2 组件

编辑/etc/lvm/lvm.conf 文件，配置过滤器。

编辑# Configuration section devices 部分。添加以下内容。

```
filter = [ "a/sdb/", "r/.*/"]
```

```
# Configuration option devices/filter.
# Limit the block devices that are used by LVM commands.
# This is a list of regular expressions used to accept or reject block
# device path names. Each regex is delimited by a vertical bar '|'
# (or any character) and is preceded by 'a' to accept the path, or
# by 'r' to reject the path. The first regex in the list to match the
# path is used, producing the 'a' or 'r' result for the device.
# When multiple path names exist for a block device, if any path name
# matches an 'a' pattern before an 'r' pattern, then the device is
# accepted. If all the path names match an 'r' pattern first, then the
# device is rejected. Unmatching path names do not affect the accept
# or reject decision. If no path names for a device match a pattern,
# then the device is accepted. Be careful mixing 'a' and 'r' patterns,
# as the combination might produce unexpected results (test changes.)
# Run vgscan after changing the filter to regenerate the cache.
# See the use_lvmetad comment for a special case regarding filters.
#
filter = [ "a/sdb/", "r/.*/"]
```

安装配置Cinder

2.安装并配置组件

安装 Cinder 组件所需软件包

```
# yum install openstack-cinder targetcli python-keystone -y
```

```
[root@compute ~]# yum install openstack-cinder targetcli python-keystone -y
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
Package targetcli-2.1.fb41-3.el7.noarch already installed and latest version
Package 1:python-keystone-9.0.2-1.el7.noarch already installed and latest versio
n
Resolving Dependencies
--> Running transaction check
---> Package openstack-cinder.noarch 1:8.0.0-1.el7 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

================================================================================
 Package                Arch          Version              Repository      Size
================================================================================
Installing:
 openstack-cinder       noarch        1:8.0.0-1.el7        mitaka          48 k

Transaction Summary
================================================================================
Install  1 Package

Total download size: 48 k
Installed size: 146 k
Downloading packages:
openstack-cinder-8.0.0-1.el7.noarch.rpm                   |  48 kB   00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : 1:openstack-cinder-8.0.0-1.el7.noarch                       1/1
  Verifying  : 1:openstack-cinder-8.0.0-1.el7.noarch                       1/1

Installed:
  openstack-cinder.noarch 1:8.0.0-1.el7

Complete!
```

安装配置Cinder

2.安装并配置组件

配置 Cinder 所需组件
编辑/etc/cinder/cinder.conf 文件。
编辑[database]部分，配置数据库链接。

```
[database]
connection = mysql+pymysql://cinder:000000@controller/cinder
```


```
[database]
connection = mysql+pymysql://cinder:000000@controller/cinder
```


编辑[DEFAULT]和[oslo_messaging_rabbit]部分，配置 RabbitMQ 消息服务器链接。

```
[DEFAULT]
rpc_backend = rabbit

[oslo_messaging_rabbit]
rabbit_host = controller
rabbit_userid = openstack
rabbit_password = 000000
```

安装配置Cinder

2.安装并配置组件

编辑[DEFAULT]和[oslo_messaging_rabbit]部分，配置 RabbitMQ 消息服务器链接。

```
[DEFAULT]
rpc_backend = rabbit

[oslo_messaging_rabbit]
rabbit_host = controller
rabbit_userid = openstack
rabbit_password = 000000
```

编辑[DEFAULT]和[keystone_authtoken]部分，配置 Keystone 身份认证。

```
[DEFAULT]
auth_strategy = keystone

[keystone_authtoken]
auth_uri = http://controller:5000
auth_url = http://controller:35357
memcached_servers = controller:11211
auth_type = password project_domain_name = default
user_domain_name = default
project_name = service
username = cinder
password = 000000
```

安装配置Cinder

2.安装并配置组件

编辑[DEFAULT]和[keystone_authtoken]部分，配置 Keystone 身份认证。

```
[DEFAULT]
rpc_backend = rabbit
auth_strategy = keystone

[keystone_authtoken]
auth_uri = http://controller:5000
auth_url = http://controller:35357
memcached_servers = controller:11211
auth_type = password project_domain_name = default
user_domain_name = default
project_name = service
username = cinder
password = 000000
```

编辑[DEFAULT]部分，配置存储节点管理 IP 地址。

```
[DEFAULT]
my_ip = 192.168.100.30
```

```
[DEFAULT]
rpc_backend = rabbit
auth_strategy = keystone
my_ip = 192.168.100.30
```

安装配置Cinder

2.安装并配置组件

编辑[lvm]部分，配置 lvm 后端，以及基于 TCP/IP 的协议的（iSCSI）接口和相对应的服务。

```
[lvm]
volume_driver = cinder.volume.drivers.lvm.LVMVolumeDriver
volume_group = cinder-volumes
iscsi_protocol = iscsi
iscsi_helper = lioadm
```

```
[lvm]
volume_driver = cinder.volume.drivers.lvm.LVMVolumeDriver
volume_group = cinder-volumes
iscsi_protocol = iscsi
iscsi_helper = lioadm
```

编辑[DEFAULT]部分，启用 LVM 后端。

```
[DEFAULT]
enabled_backends = lvm
```

```
[DEFAULT]
rpc_backend = rabbit
auth_strategy = keystone
my_ip = 192.168.100.30
enabled_backends = lvm
```

安装配置Cinder

2.安装并配置组件

编辑[DEFAULT]部分，配置 Glance 服务 API。

```
[DEFAULT]
glance_api_servers = http://controller:9292
```

```
[DEFAULT]
rpc_backend = rabbit
auth_strategy = keystone
my_ip = 192.168.100.30
enabled_backends = lvm
glance_api_servers = http://controller:9292
```

编辑[oslo_concurrency]部分，配置 lock_path。

```
[oslo_concurrency]
lock_path = /var/lib/cinder/tmp
```

```
[oslo_concurrency]
lock_path = /var/lib/cinder/tmp
```

安装配置Cinder

2.安装并配置组件

启动并设置 Cinder 服务开机自启

```
# systemctl enable openstack-cinder-volume.service target.service
# systemctl start openstack-cinder-volume.service target.service
```

```
[root@compute ~]# systemctl enable openstack-cinder-volume.service target.service
Created symlink from /etc/systemd/system/multi-user.target.wants/openstack-cinder-volum
lume.service.
[root@compute ~]# systemctl start openstack-cinder-volume.service target.service
```

验证 Cinder 服务

在控制节点验证：

```
# . admin-openrc
```

```
[root@controller ~]# . admin-openrc
```

```
# cinder service-list
```

```
[root@controller ~]# cinder service-list
+------------------+-------------+------+---------+-------+----------------------------+----------
-------+
|      Binary      |     Host    | Zone |  Status | State |         Updated_at         | Disabled
Reason |
+------------------+-------------+------+---------+-------+----------------------------+----------
-------+
| cinder-scheduler |  controller | nova | enabled |   up  | 2017-12-15T09:35:14.000000 |        -
       |
|  cinder-volume   | compute@lvm | nova | enabled |   up  | 2017-12-15T09:35:14.000000 |        -
       |
+------------------+-------------+------+---------+-------+----------------------------+----------
-------+
```

谢谢观看