OpenStack FusionStorage Driver Configuration Guide

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1 Overview

This chapter describes the definition of Cinder Driver.

Cinder Driver is a plug-in that is deployed on the OpenStack Cinder module. The plug-in can be used to provide functions such as the logical volume and snapshot for virtual machines (VMs) in OpenStack. FusionStorage supports SCSI and iSCSI protocols. However, in OpenStack environments, FusionStorage supports only SCSI. In addition, FusionStorage currently does not support advanced properties.

2 Version Mappings

This chapter describes the version mappings among Cinder Driver, FusionStorage, and OpenStack.

Version mapping between OpenStack and storage products

OpenStack Version	Storage Product Version
Rocky	FusionStorage 6.3

You can query the version mapping table of eSDK plug-ins to obtain the storage system versions. To obtain the version mapping table, log in to **http://support.huawei.com/enterprise/en/index.html**. In the search box, enter **eSDK Cloud Storage Plugins** to search for and download the *eSDK Cloud Storage Plugins x.x.xxx Version Mapping*. x.x.xxx indicates the version number.

Mappings among Cinder Driver, features, and the OpenStack version (√ : supported, x: not supported)

Feature	Rocky
Create Volume	√
Delete Volume	√
Attach Volume	√
Detach Volume	√
Extend Volume	√
Create Snapshot	√
Delete Snapshot	√
Create Volume from Snapshot	√
Create Volume from Image	√
Create Volume from Volume	√

Feature	Rocky
Create Image from Volume	√
Volume Migration	x
QoS	x
Auto zoning	x
SmartTier	x
SmartCache	x
SmartThin	x
SmartThick	x
SmartPartition	x
HyperMetro	x
Retype	x
Manage/Unmanage Volume	√
Manage/Unmanage Snapshot	√
Replication V2.1	x
HyperMetro Consistency Group	x
Backup Snapshot	x
Snapshot Consistency Group	x
Multipath	x
Consistency Group	x

3 Deployment

Currently, FusionStorage Block 6.3 supports the following operating system: CentOS, EulerOS, Oracle, Red Hat, and SUSE. For details about the operating system versions supported by FusionStorage, access **http://support-open.huawei.com/en/**, choose **Interoperability Center** > **Storage Interoperability**, set **Storage System** to **FusionStorage** and **Storage Service Type** to **Block**, and select the desired operating system. The following uses Red Hat as an example to describe how to deploy Cinder Driver.

3.1 Obtaining Cinder Driver

Two ways to obtain FusionStorage OpenStack Driver:

One is through the OpenStack community warehouse. Since Rocky, Huawei has contributed Huawei Storage Driver to OpenStack, so that users can download FusionStorage OpenStack Driver from the OpenStack community for free. After installing the specified OpenStack version, FusionStorage OpenStack Driver will be placed under directory *../cinder/cinder/volume/drivers/fusionstorage*. If you cannot find the corresponding installation files, you can download FusionStorage OpenStack Driver from the OpenStack community warehouse at **https://github.com/openstack/cinder**.

The other is through the Huawei OpenStack Driver warehouse. By visiting **https://github.com/huaweistorage/FusionStorage_OpenStack_Driver**, you can download FusionStorage OpenStack Driver that corresponds to OpenStack community version.

3.2 Red Hat Environment Deployment

Red Hat OpenStack deployment steps are as follows:

Step 1 Before installation, delete all the installation files of Huawei OpenStack Driver. The default installation path is **/usr/lib/python2.7/site-packages/cinder/volume/drivers/fusionstorage**.

NOTE

On the host, the version of Python is 2.7. If another version is used, use the correct version number. You can obtain the Cinder Driver installation directory by running the following commands:

```
root@redhatL004:~# find / -name dsware.py
/usr/lib/python2.7/dist-packages/cinder/volume/drivers/fusionstorage/dsware.py
```

Step 2 Copy OpenStack Cinder Driver to the Cinder Driver installation directory.

Step 3 Make configuration by referring to **4 Configuring Basic Properties**.

Step 4 After configuration, restart the Cinder-Volume service by running the following command:

```
systemctl restart devstack@c-vol.service
```

Step 5 Check the status of service restart by running the **cinder service-list** command. If **State** is **up**, the Cinder-Volume service has been restarted.

```
root@redhat:/# cinder service-list
  +------------------+-----------------------------+------+---------+-------
+----------------------------+-----------------+
  |      Binary      |        Host                 | Zone |  Status | State
|         Updated_at         | Disabled Reason |
  +------------------+-----------------------------+------+---------+-------
+----------------------------+-----------------+
  |  cinder-volume |  redhat@fusionstorage     | nova | enabled |  up |
2018-09-03T07:56:02.000000 |        -        |
  +------------------+-----------------------------+------+---------+-------
+----------------------------+-----------------+
```

----End

4 Configuring Basic Properties

This chapter describes how to configure the Fusion Storage Cinder Driver for SCSI storage.

4.1 Configuring an XML File

Procedure

NOTICE

Ensure that the storage pool used for configuring Cinder Driver exists in FusionStorage. Otherwise, create a storage pool. In addition, the type of this storage pool must be sata3copy.

Step 1 In **/etc/cinder**, create a Huawei-customized driver configuration file. The file format is XML.

Change the name of the driver configuration file based on site requirements, for example, **cinder_fusionstorage_conf.xml**.

Step 2 Configure parameters in the driver configuration file. For details, see **Table 4-1**.

```
<?xml version='1.0' encoding='UTF-8'?>
<config>
 <Storage>
       <RestURL>https://x.x.x.x:28443</RestURL>
       <UserName>xxx</UserName>
       <UserPassword>xxx</UserPassword>
 </Storage>
 <Pool>
       <StoragePool>name1;name2;name3;</StoragePool>
 </Pool>
</config>
```

----End

4.1.1 XML Configuration File Parameters

Table 4-1 Parameter description

Parameter	Description	Mandatory
RestURL	URL and port number of the node for accessing FusionStorage	Yes
UserName	User name of the node for accessing FusionStorage	Yes
UserPassword	Password of the node for accessing FusionStorage	Yes
StoragePool	Name of the storage pool in FusionStorage	Yes

NOTICE

The value of any parameter cannot contain the following characters: < > & ' ".

4.2 Configuring a conf File

At the end of **/etc/cinder/cinder.conf**, configure the FusionStorage back end with the Huawei driver. **volume_driver** indicates the loaded driver file, **cinder_fusionstorage_conf_file** indicates the specified Huawei-customized configuration file, **volume_backend_name** indicates the name of the back end, and each row of **hosts** indicates the name and IP address of an FSA host.

NOTE

Ensure that the owner and user group of **/etc/cinder/cinder_fusionstorage_conf.xml** are the same as those of **/etc/cinder/cinder.conf**.

```
-rw-r--r--  1 stack stack 2839 Aug 29 15:29 cinder.conf
-rw-r--r--  1 stack stack  287 Aug 30 16:27 cinder_fusionstorage_conf.xml
[fusionstorage]
volume_backend_name = fusionstorage
volume_driver = cinder.volume.drivers.fusionstorage.dsware.DSWAREDriver
cinder_fusionstorage_conf_file = /etc/cinder/cinder_fusionstorage_conf.xml
hosts =
 host1: x.x.x.x,
 host2: x.x.x.x
```

In the **[DEFAULT]** section, enable the FusionStorage back end.

```
[DEFAULT]
 ...
enabled_backend=fusionstorage
 ...
```


4.2.1 conf Configuration File Parameters

Table 4-2 Parameter description

Parameter	Description	Mandatory
volume_backend_name	Back end name of the default driver.	Yes
volume_driver	Default driver.	Yes
cinder_fusionstorage_conf_file	Customized configuration file path.	Yes
hosts	IP addresses of management hosts. Each IP host is separated using commas (,).	Yes

