Red Hat Enterprise Linux OpenStack Platform 7
Dell Storage Center iSCSI drivers

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OpenStack Team

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Abstract

This document describes how to configure Red Hat Enterprise Linux OpenStack Platform 7 to use one or more Dell Storage Center devices as back ends.

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The Dell Storage Center volume driver interacts with configured Storage Center arrays.

The Dell Storage Center driver manages Storage Center arrays through Enterprise Manager. Enterprise Manager connection settings and Storage Center options are defined in the **`cinder.conf`** file.

Prerequisite: Dell Enterprise Manager 2015 R1 or later must be used.

SUPPORTED OPERATIONS

The Dell Storage Center volume driver provides the following Cinder volume operations:

- Create, delete, attach (map), and detach (unmap) volumes.
- Create, list, and delete volume snapshots.
- Create a volume from a snapshot.
- Copy an image to a volume.
- Copy a volume to an image.
- Clone a volume.
- Extend a volume.

EXTRA SPEC OPTIONS

Volume type extra specs can be used to select different Storage Profiles.

Storage Profiles control how Storage Center manages volume data. For a given volume, the selected Storage Profile dictates which disk tier accepts initial writes, as well as how data progression moves data between tiers to balance performance and cost. Predefined Storage Profiles are the most effective way to manage data in Storage Center.

By default, if no Storage Profile is specified in the volume extra specs, the default Storage Profile for the user account configured for the Block Storage driver is used. The extra spec key **`storagetype:storageprofile`** with the value of the name of the Storage Profile on the Storage Center can be set to allow to use Storage Profiles other than the default.

For ease of use from the command line, spaces in Storage Profile names are ignored. As an example, here is how to define two volume types using the **`High Priority`** and **`Low Priority`** Storage Profiles:

```
$ cinder type-create "GoldVolumeType"
```

```
$ cinder type-key "GoldVolumeType" set
storagetype:storageprofile=highpriority
$ cinder type-create "BronzeVolumeType"
$ cinder type-key "BronzeVolumeType" set
storagetype:storageprofile=lowpriority
```

DRIVER OPTIONS

The following table contains the configuration options specific to the Dell Storage Center volume driver.

Table 1. Description of Dell Storage Center volume driver configuration options

Configuration option = Default value	Description
[DEFAULT]	
dell_sc_api_port = *3033*	(IntOpt) Dell API port
dell_sc_server_folder = *openstack*	(StrOpt) Name of the server folder to use on the Storage Center
dell_sc_ssn = *64702*	(IntOpt) Storage Center System Serial Number
dell_sc_volume_folder = *openstack*	(StrOpt) Name of the volume folder to use on the Storage Center

ISCSI CONFIGURATION

The following snippet displays the required and optional settings for a single iSCSI back end:

Example 1. Sample iSCSI Configuration

```
default_volume_type = delliscsitype
enabled_backends = delliscsi

[delliscsi]
# Required settings
volume_driver =
cinder.volume.drivers.dell.dell_storagecenter_iscsi.DellStorageCenterISCSIDr
er
san_ip = IP_SC
san_login = SAN_UNAME
san_password = SAN_PW
iscsi_ip_address = ISCSI_IP
dell_sc_ssn = SERIAL

# Optional settings
dell_sc_api_port = API_PORT
```

```
dell_sc_server_folder = SERVFOLDER
dell_sc_volume_folder = VOLFOLDER
# The iSCSI IP port
iscsi_port = ISCSI_PORT
```

Where:

IP_SC

The IP address used to reach the Dell Enterprise Manager. This field has no default value.

SAN_UNAME

The user name to login to the Dell Enterprise Manager at the *IP_EQLX*. Default user name is **`Admin`**.

SAN_PW

The corresponding password of *SAN_UNAME*. Default password is **`password`**.

ISCSI_IP

The IP address that the iSCSI daemon is listening on. In this case, *ISCSI_IP* is the IP address of the Dell Storage Center iSCSI.

SERIAL

The Dell Storage Center serial number to use. Default is **`64702`**.

API_PORT

The Dell Enterprise Manager API port. Default is **`3033`**

SERVFOLDER

The **`Server`** folder in Dell Storage Center where the new server definitions are placed.

VOLFOLDER

The **`Server`** folder in Dell Storage Center where the new volumes are created.

ISCSI_PORT

The corresponding port of the Dell Storage Center array. This parameter is optional, and defaults to **`3036`**

Each back end's name is defined in its section header (in this case, **`delliscsi`**). To enable a back end, add its name to the **`enabled_backends`** setting. In the case of multiple back ends, enable them by adding their respective names to **`enabled_backends`** as a comma-delimited list.