
OS Brick Documentation

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Cinder Contributors

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os-brick is a Python package containing classes that help with volume discovery and removal from a host.

INSTALLATION GUIDE

1.1 Installation

At the command line:

```
$ pip install os-brick
```

Or, if you have virtualenvwrapper installed:

```
$ mkvirtualenv os-brick  
$ pip install os-brick
```

Or, from source:

```
$ git clone https://opendev.org/openstack/os-brick  
$ cd os-brick  
$ python setup.py install
```


USAGE GUIDE

2.1 Tutorial

This tutorial is intended as an introduction to working with **os-brick**.

2.1.1 Prerequisites

Before we start, make sure that you have the **os-brick** distribution *installed*. In the Python shell, the following should run without raising an exception:

```
>>> import os_brick
```

2.1.2 Fetch all of the initiator information from the host

An example of how to collect the initiator information that is needed to export a volume to this host.

```
from os_brick.initiator import connector

# what helper do you want to use to get root access?
root_helper = "sudo"
# The ip address of the host you are running on
my_ip = "192.168.1.1"
# Do you want to support multipath connections?
multipath = True
# Do you want to enforce that multipath daemon is running?
enforce_multipath = False
initiator = connector.get_connector_properties(root_helper, my_ip,
                                              multipath,
                                              enforce_multipath)
```


3.1 API Documentation

The **os-brick** package provides the ability to collect host initiator information as well as discovery volumes and removal of volumes from a host.

3.1.1 os_brick OpenStack Brick library

Sub-modules:

initiator Initiator

Bricks Initiator module.

The initiator module contains the capabilities for discovering the initiator information as well as discovering and removing volumes from a host.

Sub-modules:

connector Connector

Brick Connector objects for each supported transport protocol.

The connectors here are responsible for discovering and removing volumes for each of the supported transport protocols.

class `os_brick.initiator.connector.InitiatorConnector`

```
static factory(protocol, root_helper, driver=None, use_multipath=False,  
device_scan_attempts=3, arch=None, *args, **kwargs)
```

Build a Connector object based upon protocol and architecture.

```
class os_brick.initiator.connector.ISCSIConnector(root_helper: str, driver=None,  
execute=None, use_multipath: bool  
= False, device_scan_attempts: int =  
3, transport='default', *args,  
**kwargs)
```

Connector class to attach/detach iSCSI volumes.

```
connect_volume(connection_properties: dict)  
Attach the volume to instance_name.
```

Parameters `connection_properties` (*dict*) The valid dictionary that describes all of the target volume attributes.

Returns *dict*

`connection_properties` for iSCSI must include: `target_portal(s)` - ip and optional port `target_iqn(s)` - iSCSI Qualified Name `target_lun(s)` - LUN id of the volume Note that plural keys may be used when `use_multipath=True`

disconnect_volume(*connection_properties, device_info, force=False, ignore_errors=False*)
Detach the volume from `instance_name`.

Parameters

- **connection_properties** (*dict that must include: target_portal(s) - IP and optional port target_iqn(s) - iSCSI Qualified Name target_lun(s) - LUN id of the volume*) The dictionary that describes all of the target volume attributes.
- **device_info** (*dict*) historical difference, but same as `connection_props`
- **force** (*bool*) Whether to forcefully disconnect even if flush fails.
- **ignore_errors** (*bool*) When `force` is `True`, this will decide whether to ignore errors or raise an exception once finished the operation. Default is `False`.

class `os_brick.initiator.connector.FibreChannelConnector`(*root_helper, driver=None, execute=None, use_multipath=False, device_scan_attempts=3, *args, **kwargs*)

Connector class to attach/detach Fibre Channel volumes.

connect_volume(*connection_properties*)
Attach the volume to `instance_name`.

Parameters `connection_properties` (*dict*) The dictionary that describes all of the target volume attributes.

Returns *dict*

`connection_properties` for Fibre Channel must include: `target_wwn` - World Wide Name `target_lun` - LUN id of the volume

disconnect_volume(*connection_properties, device_info, force=False, ignore_errors=False*)
Detach the volume from `instance_name`.

Parameters

- **connection_properties** (*dict*) The dictionary that describes all of the target volume attributes.
- **device_info** (*dict*) historical difference, but same as `connection_props`

`connection_properties` for Fibre Channel must include: `target_wwn` - World Wide Name `target_lun` - LUN id of the volume

class `os_brick.initiator.connector.LocalConnector`(*root_helper, driver=None, *args, **kwargs*)

Connector class to attach/detach File System backed volumes.

connect_volume(*connection_properties*)

Connect to a volume.

Parameters **connection_properties** (*dict*) The dictionary that describes all of the target volume attributes. *connection_properties* must include:

- **device_path** - path to the volume to be connected

Returns dict

disconnect_volume(*connection_properties*, *device_info*, *force=False*, *ignore_errors=False*)

Disconnect a volume from the local host.

Parameters

- **connection_properties** (*dict*) The dictionary that describes all of the target volume attributes.
- **device_info** (*dict*) historical difference, but same as *connection_props*

class `os_brick.initiator.connector.HuaweiStorHyperConnector`(*root_helper*,
driver=None, **args*,
***kwargs*)

Connector class to attach/detach SDSHypervisor volumes.

connect_volume(*connection_properties*)

Connect to a volume.

Parameters **connection_properties** (*dict*) The dictionary that describes all of the target volume attributes.

Returns dict

disconnect_volume(*connection_properties*, *device_info*, *force=False*, *ignore_errors=False*)

Disconnect a volume from the local host.

Parameters

- **connection_properties** (*dict*) The dictionary that describes all of the target volume attributes.
- **device_info** (*dict*) historical difference, but same as *connection_props*

exception Exceptions

Exceptions for the Brick library.

class `os_brick.exception.BrickException`(*message=None*, ***kwargs*)

Base Brick Exception

To correctly use this class, inherit from it and define a *message* property. That message will get printed with the keyword arguments provided to the constructor.

class `os_brick.exception.NotFound`(*message=None*, ***kwargs*)

class `os_brick.exception.Invalid`(*message=None*, ***kwargs*)

class `os_brick.exception.InvalidParameterValue`(*message=None*, ***kwargs*)

class `os_brick.exception.NoFibreChannelHostsFound`(*message=None*, ***kwargs*)

class `os_brick.exception.NoFibreChannelVolumeDeviceFound`(*message=None*, ***kwargs*)

```
class os_brick.exception.VolumeDeviceNotFound(message=None, **kwargs)
```

```
class os_brick.exception.ProtocolNotSupported(message=None, **kwargs)
```

CONTRIBUTING

4.1 So You Want to Contribute

For general information on contributing to OpenStack, please check out the [contributor guide](#) to get started. It covers all the basics that are common to all OpenStack projects: the accounts you need, the basics of interacting with our Gerrit review system, how we communicate as a community, etc.

The os-brick library is maintained by the OpenStack Cinder project. To understand our development process and how you can contribute to it, please look at the Cinder projects general contributors page: <http://docs.openstack.org/cinder/latest/contributor/contributing.html>