



Tintri

INSTALLATION RUNBOOK FOR Tintri Cinder Driver

Product Name: **Cinder Driver**

Product Version: **2.0.0.1**

MOS Version: **8.0**

OpenStack Version: **Liberty**

Product Type: **Cinder Driver**

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Document History

Version	Revision Date	Description
0.1	03-28-2016	Initial Version

1. Introduction

This document is to serve as a detailed Deployment Guide for Tintri Cinder driver. Tintri offers cinder driver storage solution that integrates Tintri Vmstore storage to Openstack cloud environment. This document describes the reference architecture, installation steps for certified MOS+Tintri Cinder driver, limitations and testing procedures.

1.1 Target Audience

This document provides the details of the setup, configuration and tests run on Mirantis OpenStack with Tintri Cinder driver for the purpose of Unlocked OpenStack Driver Validation. To interpret the results, you must be familiar with:

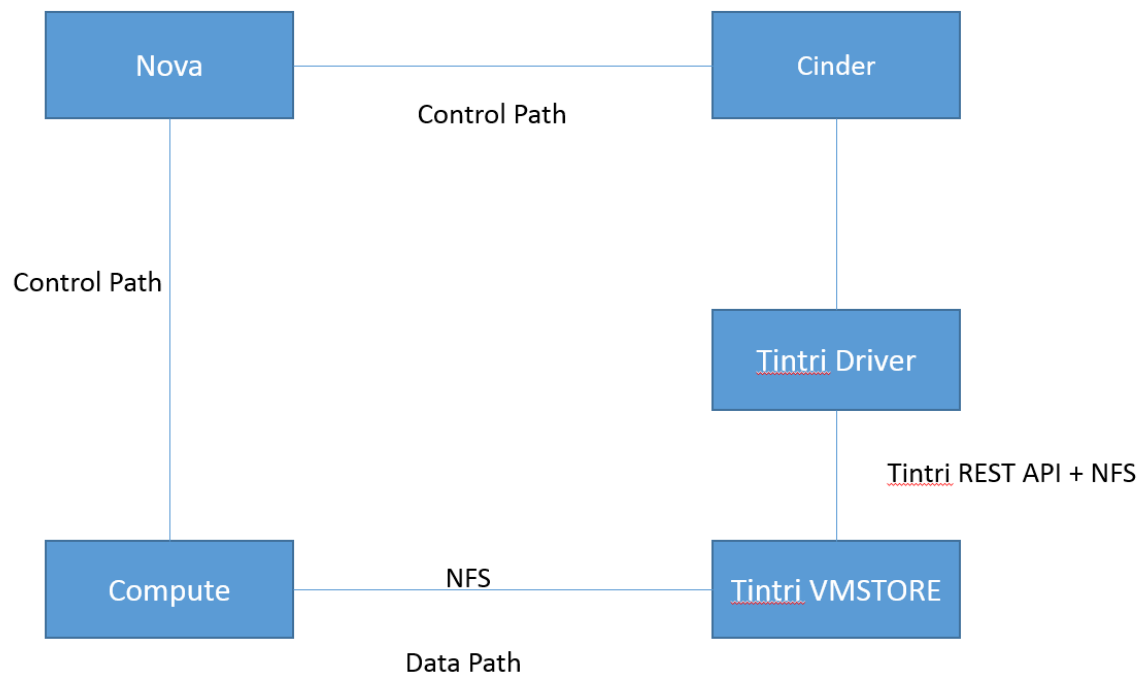
- Mirantis OpenStack and Fuel Master
- Tempest tests
- Fuel Master UI Validation tests

2. Product Overview

The Tintri Cinder driver enables integration between Tintri storage and OpenStack cloud environments. With the Tintri Cinder driver and the Tintri VMstore appliance, OpenStack users gain unmatched visibility into their Cinder volumes and VMs.

Tintri challenges the storage quo with a system built specifically for virtualized and cloud environments. Tintri eliminates LUNs and volumes—the markers of out-of-date, physical storage—instead using individual virtual machines as the unit of management. With those opaque containers gone, many organizations, including 5 of the Fortune 15, have total visibility into their storage. They can manage it in 1/60th the time, improve performance 6x, and enjoy 10x the VM density. Tintri is smart storage to realize your virtualization vision.

3. Joint reference architecture



4. Physical & Logical network topology

Fuel Server: 2 NICs required:

NIC 1: Port for PXE network

NIC 2: Port for public network traffic

Controller Server: 4 NICs required:

NIC 1: Port for Management and Private network

NIC 2: Port for PXE network

NIC 3: Port for Storage network

NIC 4: Port for public network

Compute Server: 5 NICs required:

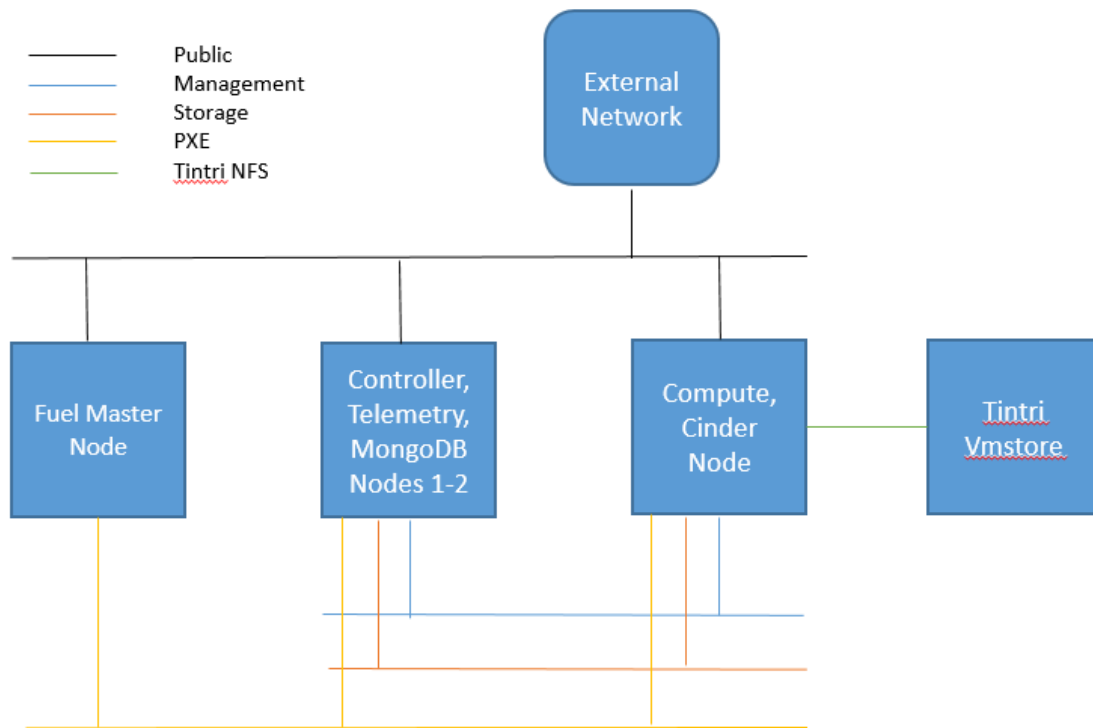
NIC 1: Port for Management and Private network

NIC 2: Port for PXE network

NIC 3: Port for Storage network

NIC 4: Port for public network

NIC 5: Port for Tintri VMstore network (NFS to mount volume)



- Fuel Master, Controller, and Compute nodes are connected to 1G public network.
- Fuel Master, Controller, and Compute nodes are connected to 1G PXE network. This network is private and is used for PXE booting the compute and controller nodes during installation.
- Controller and Compute nodes are connected to 1G Storage network. This network is private and is used to provide storage services such as replication traffic from Ceph.
- Controller and Compute nodes are connected to 1G Management network. This network is private and is primarily used for OpenStack Cloud management and for accessing OpenStack services (nova-api, OpenStack dashboard, etc.)

Compute node and Tintri VMstore are connected to NFS network. This is a 10G network and is used to mount Tintri VMstore volumes on compute node. Tintri VMstore only needs NFS connection to compute node(s).

5. Installation and Configuration

5.1 Environment preparation

Setup servers and networks.

Install the Fuel Master node.

Setup and configure controller nodes.

Setup and configure cinder nodes
Setup and configure nova nodes.

5.2 MOS Installation

Please refer to Mirantis Openstack User Guide at <https://docs.mirantis.com/openstack/fuel/fuel-8.0/#guides> for details on how to install and configure MOS.

Creation of OpenStack environment

1. On the Fuel UI, click on “New OpenStack Environment”.
2. When the wizard opens, enter the name and the desired OpenStack Release(Ubuntu).
3. Select the Compute for the Environment (KVM, Qemu)
4. Select the required Neutron Setup.
5. Under storage backends, leave the default option.
6. Select the additional services and click on finish.

All the nodes (Physical or Virtual) should have access to the Mirantis PXE network (on the same isolated VLAN or switch). Boot the nodes and wait until they show up on the fuel UI. Add the nodes to the environment and start the deployment.

MOS Deployment

Once all the nodes have booted up through PXE, they appear on the Fuel UI. Configure controllers, cinder and compute. Have multiple controllers in the setup (3 controllers are recommended).

Dashboard

Nodes

Networks

Settings

Logs

Health Check

OpenStack Settings

General

Security

Compute

Storage

Logging

OpenStack Services

Access

Username

admin

Username for Administrator

Password

.....

Password for Administrator

Tenant

admin

Tenant (project) name for Administrator

Email

admin@localhost

Email address for Administrator

Repositories

Please note: the first repository will be considered the operating system mirror that will be used during node provisioning. To create a local repository mirror on the Fuel master node, please follow the instructions provided by running "fuel-createmirror --help" on the Fuel master node. Please make sure your Fuel master node has Internet access to the repository before attempting to create a mirror. For more details, please refer to the documentation (<https://docs.mirantis.com/openstack/fuel/fuel-8.0/operations.html#external-ubuntu-ops>).

Name	URI	Priority
ubuntu	deb http://archive.ubuntu.com/ubuntu/ tru	None
ubuntu-updates	deb http://archive.ubuntu.com/ubuntu/ tru	None
ubuntu-security	deb http://archive.ubuntu.com/ubuntu/ tru	None
mos	deb http://10.20.0.2:8080/liberty-8.0/ubuntu	1050
mos-updates	deb http://mirror.fuel-infra.org/mos-repos/	1050

Dashboard

Nodes

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Health Check

OpenStack Settings

General

Security

Compute

Storage

Logging

OpenStack Services

Common

Public Key

Public key(s) to include in authorized_keys on deployed nodes

Public TLS

☒ TLS for OpenStack public endpoints

Enable TLS termination on HAProxy for OpenStack services

☒ HTTPS for Horizon

Secure access to Horizon enabling HTTPS instead of HTTP

Select source for certificate

☒ Self-signed

Generate private key and certificate that will be signed by this key

☐ I have my own keypair with certificate

Use pre-generated key and certificate

DNS hostname for public TLS endpoints

public.fuel.local

Your DNS entries should point to this name. Self-signed certificates also will use this hostname

Dashboard

Nodes

Networks

Settings

Logs

Health Check

OpenStack Settings

General

Security

Compute

Storage

Logging

OpenStack Services

Common

Hypervisor type

☒ KVM

Choose this type of hypervisor if you run OpenStack on hardware

☐ QEMU

Choose this type of hypervisor if you run OpenStack on virtual hosts.

☐ Nova quotas

Quotas are used to limit CPU and memory usage for tenants. Enabling quotas will increase load on the Nova database.

☒ Resume guests state on host boot

Whether to resume previous guests state when the host reboots. If enabled, this option causes guests assigned to the host to resume their previous state. If the guest was running a restart will be attempted when nova-compute starts. If the guest was not running previously, a restart will not be attempted.

Load Defaults

Cancel Changes

Save Settings

Dashboard

Nodes

Networks

Settings

Logs

Health Check

OpenStack Settings

General

Security

Compute

Storage

Logging

OpenStack Services

Common

☒ Use qcow format for images

For most cases you will want qcow format. If it's disabled, raw image format will be used to run VMs. OpenStack with raw format currently does not support snapshotting.

Storage Backends

☒ Cinder LVM over iSCSI for volumes

It is recommended to have at least one Storage - Cinder LVM node.

☐ Cinder Block device driver

High performance block device storage. It is recommended to have at least one Storage - Cinder Block Device

☐ Ceph RBD for volumes (Cinder)

Configures Cinder to store volumes in Ceph RBD images.

☐ Ceph RBD for images (Glance)

Configures Glance to use the Ceph RBD backend to store images. If enabled, this option will prevent Swift from installing.

☐ Ceph RBD for ephemeral volumes (Nova)

Configures Nova to store ephemeral volumes in RBD. This works best if Ceph is enabled for volumes and images, too. Enables live migration of all types of Ceph backed VMs (without this option, live migration will only work with VMs launched from Cinder volumes).

☐ Ceph RadosGW for objects (Swift API)

Configures RadosGW front end for Ceph RBD. This exposes S3 and Swift API Interfaces. If enabled, this option will prevent Swift from installing.

Ceph object replication factor

3

Configures the default number of object replicas in Ceph. This number must be equal to or lower than the number of deployed 'Storage - Ceph OSD' nodes.

Load Defaults

Cancel Changes

Save Settings

OpenStack Settings

General

Security

Compute

Storage

Logging

OpenStack
Services

Common

- ☒ Puppet debug logging
Debug puppet logging mode provides more information, but requires more disk space.
- ☐ OpenStack debug logging
Debug logging mode provides more information, but requires more disk space.

☐ Syslog

Hostname Remote syslog hostname

Port Remote syslog port

Syslog transport protocol

- ☐ UDP
- ☒ TCP

Load Defaults Cancel Changes Save Settings

OpenStack Settings

General

Security

Compute

Storage

Logging

OpenStack
Services

Additional Components

- ☐ Install Sahara
If selected, Sahara component will be installed
- ☐ Install Murano
If selected, Murano component will be installed
- ☒ Install Ceilometer
If selected, Ceilometer component will be installed
- ☐ Use external Mongo DB
If selected, You can use external Mongo DB as ceilometer backend
- ☐ Install Ironic
If selected, Ironic component will be installed

Load Defaults Cancel Changes Save Settings

Mirantis (5 nodes)

OpenStack Release: Juno on CentOS 6.5 (2014.2.2-6.1) Deployment Mode: Multi-node with HA Status: Operational

Success

Deployment of environment 'Mirantis' is done. Access the OpenStack dashboard (Horizon) at <http://172.16.0.2/>

Nodes Networks Settings Logs Health Check Actions Deploy Changes

Group By: Roles Filter By: Node name/mac

Configure Disks Configure Interfaces + Add Nodes

☐ Select All

Controller (3) ☐ Select All

☐	vm	Untitled (6c:ad) CONTROLLER		✓ READY	CPU: 1 (2) HDD: 40.0 GB RAM: 2.0 GB	
☐	vm	Untitled (d7:e6) CONTROLLER		✓ READY	CPU: 1 (2) HDD: 40.0 GB RAM: 2.0 GB	
☐	vm	Untitled (e9:fb) CONTROLLER		✓ READY	CPU: 1 (2) HDD: 40.0 GB RAM: 2.0 GB	

Compute, Storage - Cinder (1) ☐ Select All

☐	vm	Untitled (c8:9c) COMPUTE - CINDER		✓ READY	CPU: 2 (8) HDD: 120.0 GB RAM: 16.0 GB	
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Telemetry - MongoDB (1) ☐ Select All

☐	vm	Untitled (4e:ec) MONGO		✓ READY	CPU: 1 (2) HDD: 40.0 GB RAM: 2.0 GB	
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Configure interfaces on the machines. And set networks for Management, Storage, Private and Public networks.

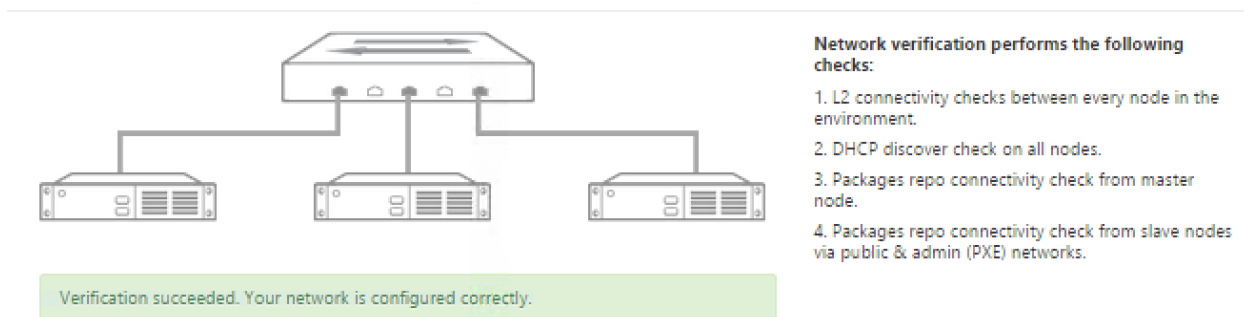
Nodes
Networks
Settings
Logs
Health Check
Actions
Deploy Changes

Configure interfaces on Untitled (6c:ad)

eth0	MAC: 00:50:56:82:57:d9 Speed: N/A	Public	MTU	Disable Offloading
eth1	MAC: 00:50:56:82:6cad Speed: N/A	Admin (PXE)	MTU	Disable Offloading
eth2	MAC: 00:50:56:82:3b:dc Speed: N/A	Management	MTU	Disable Offloading
eth3	MAC: 00:50:56:82:cce2 Speed: N/A	Storage	MTU	Disable Offloading
eth4	MAC: 00:50:56:82:db:4d Speed: 1.0 Gbps	Private VLAN ID: 1000-1030	MTU	Disable Offloading

Back To Node List
Load Defaults
Cancel Changes
Apply

After configuring the nodes, run “Verify Networks” under Networks tab. The test should pass.



After confirming the users, networks, passwords, configuration and settings, Click on “Deploy Changes” to deploy the OpenStack Environment.

5.2.1 Health Check Results

CERT (3 nodes)

Dashboard

Nodes

Networks

Settings

Logs

Health Check

Success

Provision of environment 'CERT' is done.
Deployment of environment 'CERT' is done.

Horizon (HTTP)

The OpenStack dashboard Horizon is now available.

Summary

Name

CERT

Status

Operational

OpenStack Release

Liberty on Ubuntu 14.04

Compute

KVM

Network

Neutron with VLAN segmentation

Storage Backends

Cinder LVM over iSCSI for volumes

To view the OpenStack health check status go to [Healthcheck tab](#)

Delete Environment

Reset Environment

+ Add Nodes

Capacity

CPU (Cores)	12	HDD	0.4 TB	RAM	24.0 GB
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Node Statistics

Total Nodes	3	Ready	3
Controller	2		
Compute	1		
Storage - Cinder	1		
Telemetry - MongoDB	2		

✓ Sanity tests. Duration 30 sec - 2 min	Expected Duration	Actual Duration	Status
✓ Ceilometer test to list meters, alarms, resources and events	180 s.	3.1	✓
✓ Request flavor list	20 s.	0.3	✓
✓ Request image list using Nova	20 s.	0.4	✓
✓ Request instance list	20 s.	0.5	✓
✓ Request absolute limits list	20 s.	0.0	✓
✓ Request snapshot list	20 s.	0.3	✓
✓ Request volume list	20 s.	0.3	✓
✓ Request image list using Glance v1	10 s.	0.0	✓
✓ Request image list using Glance v2	10 s.	0.0	✓
✓ Request stack list	20 s.	0.0	✓
✓ Request active services list	20 s.	0.3	✓
✓ Request user list	20 s.	0.1	✓
✓ Check that required services are running	180 s.	4.2	✓
✓ Check internet connectivity from a compute	100 s.	0.2	✓
✓ Check DNS resolution on compute node	120 s.	0.7	✓
✓ Request list of networks	20 s.	0.2	✓

☐ Functional tests. Duration 3 min - 14 min	Expected Duration	Actual Duration	Status
☐ Create instance flavor	30 s.	1.3	✓
☐ Check create, update and delete image actions using Glance v2	70 s.	3.6	✓
☐ Create volume and boot instance from it	350 s.	50.8	✓
☐ Create volume and attach it to instance	350 s.	69.0	✓
☐ Check network connectivity from instance via floating IP	300 s.	34.1	✓
☐ Create keypair	25 s.	1.4	✓
☐ Create security group	25 s.	0.8	✓
☐ Check network parameters	50 s.	0.1	✓
☐ Launch instance	200 s.	23.7	✓
☐ Launch instance with file injection	200 s.	41.5	✓
☐ Launch instance, create snapshot, launch instance from snapshot	300 s.	50.4	✓
☐ Create user and authenticate with it.	80 s.	0.5	✓
☐ HA tests. Duration 30 sec - 8 min	Expected Duration	Actual Duration	Status
☐ Check state of haproxy backends on controllers	10 s.	0.7	✓
☐ Check data replication over mysql	10 s.	2.7	✓
☐ Check if amount of tables in databases is the same on each node	10 s.	1.8	✓
☐ Check galera environment state	10 s.	1.0	✓
☐ Check pacemaker status	10 s.	0.9	✓
☐ RabbitMQ availability	100 s.	10.7	✓
☐ RabbitMQ replication	100 s.	15.9	✓

☐	Platform services functional tests. Duration 3 min - 60 min	Expected Duration	Actual Duration	Status
☐	Cellometer test to check alarm state and get Nova notifications	90 s.	27.9	✓
☐	Cellometer test to check events and traits	40 s.	29.9	✓
☐	Cellometer test to check notifications from Glance	5 s.	5.9	✓
☐	Cellometer test to check notifications from Keystone	5 s.	8.1	✓
☐	Cellometer test to check notifications from Neutron	40 s.	9.3	✓
☐	Cellometer test to check events from Cinder	150 s.	81.0	✓
☐	Cellometer test to create, check and list samples	5 s.	2.5	✓
☐	Cellometer test to create, update, check and delete alarm	120 s.	108.8	✓
☐	Typical stack actions: create, delete, show details, etc.	560 s.	40.8	✓
☐	Advanced stack actions: suspend, resume and check	660 s.	68.9	✓
☐	Check stack autoscaling	2200 s.	1164.5	✓
☐	Check stack rollback	310 s.	106.9	✓
☐	Cloud validation tests. Duration 30 sec - 2 min	Expected Duration	Actual Duration	Status
☐	Check disk space outage on controller and compute nodes	20 s.	0.9	✓
☐	Check log rotation configuration on all nodes	20 s.	0.8	✓

5.3 Tintri Cinder Driver installation steps

Tintri Cinder driver is already included in Openstack Liberty release and no driver installation is required. However, the “cinder.conf” file still has to be modified to point to Tintri VMStore device as described below.

The below procedure should be performed on the cinder nodes to use Tintri Cinder volume.

Edit /etc/cinder/cinder.conf and add the following configuration for all cinder backends you wish to create – In the below example (tintri5 and tintri6)

```
[cinder_tintri_5]
nfs_shares_config=/etc/cinder/tintri_shares_5
volume_driver=cinder.volume.drivers.tintri.TintriDriver
volume_backend_name=tintri5
nfs_mount_options=vers=3,lookupcache=none
tintri_server_hostname=<x.x.x.x>
tintri_server_username=<username>
tintri_server_password=<password>
```

```
[cinder_tintri_6]
nfs_shares_config=/etc/cinder/tintri_shares_6
volume_driver=cinder.volume.drivers.tintri.TintriDriver
volume_backend_name=tintri6
nfs_mount_options=vers=3,lookupcache=none
tintri_server_hostname=<x.x.x.x>
tintri_server_username=<username>
tintri_server_password=<password>
```

NOTE: Replace hostname, username, and password fields above with following values. Please contact your system administrator to obtain these values.

tintri_server_hostname : This is IP address of the admin network of tintri vmstore which can be obtained from hardware tab in vmstore administration UI.

tintri_server_username: This is username to login to admin network interface of tintri vmstore

tintri_server_password: This is password to login to admin network interface of tintri vmstore

Have the backends specified in “enabled_backends” under [DEFAULT]
enabled_backends=cinder_tintri_5,cinder_tintri_6

Create files mentioned in nfs_shares_config and add the location of the shares in the below format.

<Data IP of VMstore>:<Path to the share>

Example –

```
$ cat /etc/cinder/tintri_shares_5  
10.200.161.18:/tintri/cinder5
```

NOTE: Replace data IP and Path fields above with following values. Please contact your system administrator to obtain these values.

Data IP of VMstore: This is IP address of data network of tintri vmstore which can be obtained from hardware tab in vmstore administration UI.

Path to the share: This is the path to share on tintri vmstore where volumes will be created. “/tintri” in example above is always a constant and need not be changed as tintri vmstore always exposes the share as “/tintri”. “cinder5” in example above is a folder that must already exist inside the share. Please contact your system administrator to obtain values for these fields.

Restart the cinder-volume service.

NOTE: You can use the following command to restart cinder volume service:

```
service cinder-volume restart
```

On the Nova nodes where instances(that needs to access Tintri volumes) are hosted, make the following changes.

Note that most of the new nfs clients default to NFS4 which causes failure mounting NFS3. The NFS version should be specified in nova.conf under [libvirt] as follows.

```
nfs_mount_options=vers=3,proto=tcp
```

Restart the nova-compute service.

NOTE: you can use the following command to restart nova service:

```
service nova-compute restart
```

The following commands can be run on the cinder nodes to create volume types.

If multiple backends are present and the user wants to create cinder type, the following commands can be used to associate volume types to the backend.

```
$ cinder type-create backend5  
$ cinder type-key backend5 set volume_backend_name=tintri5
```

5.4 Limitations

Please refer to Mirantis Openstack Planning Guide at <https://docs.mirantis.com/openstack/fuel/fuel-8.0/#guides> for detail information on how to install Mirantis OpenStack environment, requirements, and limitations.

5.5 Testing

5.5.1 Test cases

Fuel UI health check

Tempest Volume Tests (<http://docs.openstack.org/developer/tempest/overview.html>)

Test Tool	Purpose
Fuel health check	Functional/acceptance testing
OpenStack Tempest test suite	Functional testing

Please refer to Openstack Tempest Testing Project site at <http://docs.openstack.org/developer/tempest/> for details on tempest and related information.

Note that cinder-backup functionality is not supported on Tintri cinder driver and hence these tests are excluded from the test runs.

5.5.2 Test results

Test Name	Test Result
tempest.api.compute.volumes.test_volumes_get.VolumesGetTestJSON.test_volume_create_get_delete [8.808912s]	Pass
tempest.api.compute.volumes.test_volume_snapshots.VolumesSnapshotsTestJSON.test_volume_snapshot_create_get_list_delete	Pass
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_create_volume_with_invalid_size [0.302430s]	Pass
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_create_volume_with_out_passing_size	Pass
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_create_volume_with_size_zero	Pass
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_delete_invalid_volume_id	Pass

tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_delete_volume_without_passing_volume_id	Pass
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_get_invalid_volume_id	Pass
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_get_volume_without_passing_volume_id	Pass
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_volume_delete_nonexistent_volume_id	Pass
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_volume_get_nonexistent_volume_id	Pass
tempest.api.volume.admin.test_volume_hosts.VolumeHostsAdminV1TestsJSON.test_list_hosts	Pass
tempest.api.compute.servers.test_delete_server.DeleteServersTestJSON.test_delete_server_while_in_attached_volume	Pass
tempest.api.volume.admin.test_volume_quotas_negative.BaseVolumeQuotasNegativeV2TestJSON.test_quota_volume_gigabytes	Pass
tempest.api.volume.admin.test_volume_quotas_negative.BaseVolumeQuotasNegativeV2TestJSON.test_quota_volumes	Pass
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV1Test.test_backend_name_distinction	Pass
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV1Test.test_backend_name_distinction_with_prefix	Pass
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV1Test.test_backend_name_reporting	Pass
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV1Test.test_backend_name_reporting_with_prefix	Pass
tempest.api.volume.admin.test_volume_services.VolumesServicesV2TestJSON.test_get_service_by_host_name	Pass
tempest.api.volume.admin.test_volume_services.VolumesServicesV2TestJSON.test_get_service_by_service_and_host_name	Pass
tempest.api.volume.admin.test_volume_services.VolumesServicesV2TestJSON.test_get_service_by_service_binary_name	Pass
tempest.api.volume.admin.test_volume_services.VolumesServicesV2TestJSON.test_list_services	Pass
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list	Pass
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list_param_limit	Pass
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list_param_offset_and_limit	Pass
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list_with_detail_param_limit	Pass
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list_with_detail_param_offset_and_limit	Pass
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list_with_details	Pass
tempest.api.volume.admin.test_volume_snapshot_quotas_negative.VolumeSnapshotQuotasNegativeV2TestJSON.test_quota_volume_gigabytes_snapshots	Pass
tempest.api.volume.admin.test_volume_snapshot_quotas_negative.VolumeSnapshotQuotasNegativeV2TestJSON.test_quota_volume_snapshots	Pass

tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_reset_snapshot_status	Pass
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV2Test.test_volume_type_extra_spec_create_get_delete	Pass
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV2Test.test_volume_type_extra_specs_list	Pass
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV2Test.test_volume_type_extra_specs_update	Pass
tempest.api.volume.test_extensions.ExtensionsV2TestJSON.test_list_extensions	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_snapshot_force_delete_when_snapshot_is_creating	Pass
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV2Test.test_backend_name_distinction	Pass
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV2Test.test_backend_name_distinction_with_prefix	Pass
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV2Test.test_backend_name_reporting	Pass
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV2Test.test_backend_name_reporting_with_prefix	Pass
tempest.api.compute.servers.test_server_rescue_negative.ServerRescueNegativeTestJSON.test_rescued_vm_attach_volume	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_snapshot_force_delete_when_snapshot_is_deleting	Pass
tempest.api.volume.test_snapshot_metadata.SnapshotV1MetadataTestJSON.test_create_get_delete_snapshot_metadata	Pass
tempest.api.volume.test_snapshot_metadata.SnapshotV1MetadataTestJSON.test_update_snapshot_metadata	Pass
tempest.api.volume.test_snapshot_metadata.SnapshotV1MetadataTestJSON.test_update_snapshot_metadata_item	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_snapshot_force_delete_when_snapshot_is_error	Pass
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_delete_quota	Pass
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_list_default_quotas	Pass
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_list_quotas	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_snapshot_force_delete_when_snapshot_is_error_deleting	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_update_snapshot_status	Pass
tempest.api.volume.test_volume_metadata.VolumesV1MetadataTest.test_create_get_delete_volume_metadata	Pass
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_quota_usage	Pass
tempest.api.volume.test_volume_metadata.VolumesV1MetadataTest.test_update_volume_metadata	Pass
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_show_quota_usage	Pass
tempest.api.volume.test_volume_metadata.VolumesV1MetadataTest.test_update	Pass

volume_metadata_item	
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_update_all_quota_resources_for_tenant	Pass
tempest.api.volume.test_volumes_extend.VolumesV1ExtendTest.test_volume_extend	Pass
tempest.api.volume.admin.test_volume_quotas_negative.VolumeQuotasNegativeV1TestJSON.test_quota_volume_gigabytes	Pass
tempest.api.volume.admin.test_volume_quotas_negative.VolumeQuotasNegativeV1TestJSON.test_quota_volumes	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_reset_snapshot_status	Pass
tempest.api.volume.admin.test_volume_services.VolumesServicesV1TestJSON.test_get_service_by_host_name	Pass
tempest.api.volume.admin.test_volume_services.VolumesServicesV1TestJSON.test_get_service_by_service_and_host_name	Pass
tempest.api.volume.admin.test_volume_services.VolumesServicesV1TestJSON.test_get_service_by_service_binary_name	Pass
tempest.api.volume.admin.test_volume_services.VolumesServicesV1TestJSON.test_list_services	Pass
tempest.api.compute.servers.test_server_rescue_negative.ServerRescueNegativeTestJSON.test_rescued_vm_detach_volume	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_create_invalid_body	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_create_none_body	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_create_nonexistent_type_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_delete_nonexistent_volume_type_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_get_nonexistent_extra_spec_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_get_nonexistent_volume_type_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_list_nonexistent_volume_type_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_update_multiple_extra_spec	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_update_no_body	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_update_none_extra_spec_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_update_nonexistent_extra_spec_id	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_snapshot_force_delete_when_snapshot_is_creating	Pass
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV1Test.test_create_with_empty_name	Pass
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV1Test.test_create_with_nonexistent_volume_type	Pass
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV1Test	Pass

est.test_delete_nonexistent_type_id	
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV1Test.test_get_nonexistent_type_id	Pass
tempest.api.volume.test_volumes_get.VolumesV2GetTest.test_volume_create_get_update_delete	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_snapshot_force_delete_when_snapshot_is_deleting	Pass
tempest.api.volume.test_extensions.ExtensionsV1TestJSON.test_list_extensions	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_snapshot_force_delete_when_snapshot_is_error	Pass
tempest.api.volume.test_volume_transfers.VolumesV1TransfersTest.test_create_get_list_accept_volume_transfer	Pass
tempest.api.volume.test_volumes_get.VolumesV2GetTest.test_volume_create_get_update_delete_as_clone	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_snapshot_force_delete_when_snapshot_is_error_deleting	Pass
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_update_snapshot_status	Pass
tempest.api.volume.test_volume_transfers.VolumesV1TransfersTest.test_create_list_delete_volume_transfer	Pass
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_delete_quota	Pass
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_list_default_quotas	Pass
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_list_quotas	Pass
tempest.api.volume.test_volume_transfers.VolumesV2TransfersTest.test_create_get_list_accept_volume_transfer	Pass
tempest.api.volume.test_volumes_get.VolumesV2GetTest.test_volume_create_get_update_delete_from_image	Pass
tempest.api.compute.volumes.test_attach_volume.AttachVolumeTestJSON.test_list_get_volume_attachments	Pass
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_quota_usage	Pass
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_show_quota_usage	Pass
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_update_all_quota_resources_for_tenant	Pass
tempest.api.volume.test_volume_transfers.VolumesV2TransfersTest.test_create_list_delete_volume_transfer	Pass
tempest.api.volume.admin.test_volume_hosts.VolumeHostsAdminV2TestsJSON.test_list_hosts	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_by_name	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_details_by_name	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_param_display_name_and_status	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_w	Pass

ith_detail_param_display_name_and_status	
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_w_ith_detail_param_metadata	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_w_ith_details	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_w_ith_param_metadata	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volumes_list_by_availability_zone	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volumes_list_by_status	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volumes_list_details_by_availability_zone	Pass
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volumes_list_details_by_status	Pass
tempest.api.volume.admin.test_volume_snapshot_quotas_negative.VolumeSnapshotNegativeV1TestJSON.test_quota_volume_gigabytes_snapshots	Pass
tempest.api.volume.admin.test_volume_snapshot_quotas_negative.VolumeSnapshotNegativeV1TestJSON.test_quota_volume_snapshots	Pass
tempest.api.volume.admin.test_volume_types.VolumeTypesV1Test.test_volume_create_with_volume_type_and_extra_specs	Pass
tempest.api.volume.admin.test_volume_types.VolumeTypesV1Test.test_volume_type_create_get_delete	Pass
tempest.api.volume.admin.test_volume_types.VolumeTypesV1Test.test_volume_type_encryption_create_get_delete	Pass
tempest.api.volume.admin.test_volume_types.VolumeTypesV1Test.test_volume_type_list	Pass
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_attach_detach_volume_to_instance	Pass
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_get_volume_attachment	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_create_invalid_body	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_create_none_body	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_create_nonexistent_type_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_delete_nonexistent_volume_type_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_get_nonexistent_extra_spec_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_get_nonexistent_volume_type_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_list_nonexistent_volume_type_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_update_multiple_extra_spec	Pass
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_reserve_unreserve_volume	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_create_invalid_body	Pass

negativeV1Test.test_update_no_body	
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_update_none_extra_spec_id	Pass
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_update_nonexistent_extra_spec_id	Pass
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_volume_bootable	Pass
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_volume_readonly_update	Pass
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV2Test.test_create_with_empty_name	Pass
tempest.api.volume.test_volumes_snapshots.VolumesV2SnapshotTest.JSON.test_snapshot_create_get_list_update_delete	Pass
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV2Test.test_create_with_nonexistent_volume_type	Pass
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV2Test.test_delete_nonexistent_type_id	Pass
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV2Test.test_get_nonexistent_type_id	Pass
tempest.api.volume.admin.test_volume_types.VolumeTypesV2Test.test_volume_create_with_volume_type_and_extra_specs	Pass
tempest.api.volume.admin.test_volume_types.VolumeTypesV2Test.test_volume_type_create_get_delete	Pass
tempest.api.volume.test_availability_zone.AvailabilityZoneV2Test.JSON.test_get_availability_zone_list	Pass
tempest.api.volume.admin.test_volume_types.VolumeTypesV2Test.test_volume_type_encryption_create_get_delete	Pass
tempest.api.volume.admin.test_volume_types.VolumeTypesV2Test.test_volume_type_list	Pass
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV1Test.test_volume_type_extra_spec_create_get_delete	Pass
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV1Test.test_volume_type_extra_specs_list	Pass
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV1Test.test_volume_type_extra_specs_update	Pass
tempest.api.volume.test_qos.QosSpecsV1Test.JSON.test_associate_disassociate_qos	Pass
tempest.api.volume.test_qos.QosSpecsV1Test.JSON.test_create_delete_qos_with_back_end_consumer	Pass
tempest.api.volume.test_qos.QosSpecsV1Test.JSON.test_create_delete_qos_with_both_consumer	Pass
tempest.api.volume.test_qos.QosSpecsV1Test.JSON.test_create_delete_qos_with_front_end_consumer	Pass
tempest.api.volume.test_qos.QosSpecsV1Test.JSON.test_get_qos	Pass
tempest.api.volume.test_qos.QosSpecsV1Test.JSON.test_list_qos	Pass
tempest.api.volume.test_qos.QosSpecsV1Test.JSON.test_set_unset_qos_key	Pass
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_volume_upload	Pass
tempest.api.volume.test_volumes_snapshots.VolumesV2SnapshotTest.JSON.test_snapshot_create_with_volume_in_use	Pass

tempest.api.volume.admin.test_volumes_actions.VolumesActionsV1Test.test_volume_force_delete_when_volume_is_attaching	Pass
tempest.api.volume.test_snapshot_metadata.SnapshotV2MetadataTestJSON.test_create_get_delete_snapshot_metadata	Pass
tempest.api.volume.test_snapshot_metadata.SnapshotV2MetadataTestJSON.test_update_snapshot_metadata	Pass
tempest.api.volume.test_snapshot_metadata.SnapshotV2MetadataTestJSON.test_update_snapshot_metadata_item	Pass
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV1Test.test_volume_force_delete_when_volume_is_creating	Pass
tempest.api.volume.test_volumes_snapshots.VolumesV2SnapshotTestJSON.test_snapshots_list_details_with_params	Pass
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV1Test.test_volume_force_delete_when_volume_is_error	Pass
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV1Test.test_volume_reset_status	Pass
tempest.api.volume.test_volumes_snapshots.VolumesV2SnapshotTestJSON.test_snapshots_list_with_params	Pass
tempest.api.volume.v2.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_details_with_multiple_params	Pass
tempest.api.volume.test_volumes_extend.VolumesV2ExtendTest.test_volume_extend	Pass
tempest.api.volume.test_volumes_snapshots.VolumesV2SnapshotTestJSON.test_volume_from_snapshot	Pass
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV2Test.test_volume_force_delete_when_volume_is_attaching	Pass
tempest.api.volume.test_volumes_snapshots_negative.VolumesV1SnapshotNegativeTestJSON.test_create_snapshot_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_snapshots_negative.VolumesV1SnapshotNegativeTestJSON.test_create_snapshot_without_passing_volume_id	Pass
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV2Test.test_volume_force_delete_when_volume_is_creating	Pass
tempest.api.volume.test_volumes_snapshots_negative.VolumesV2SnapshotNegativeTestJSON.test_create_snapshot_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_snapshots_negative.VolumesV2SnapshotNegativeTestJSON.test_create_snapshot_without_passing_volume_id	Pass
tempest.api.volume.test_volumes_get.VolumesV1GetTest.test_volume_create_get_update_delete	Pass
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV2Test.test_volume_force_delete_when_volume_is_error	Pass
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV2Test.test_volume_reset_status	Pass
tempest.api.volume.test_availability_zone.AvailabilityZoneV1TestJSON.test_get_availability_zone_list	Pass
tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_associate_disassociate_qos	Pass
tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_create_delete_qos_with_back_end_consumer	Pass
tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_create_delete_qos_with_both_consumer	Pass

tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_create_delete_qos_with_front_end_consumer	Pass
tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_get_qos	Pass
tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_list_qos	Pass
tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_set_unset_qos_key	Pass
tempest.api.volume.test_volumes_get.VolumesV1GetTest.test_volume_create_get_update_delete_as_clone	Pass
tempest.api.volume.test_volume_metadata.VolumesV2MetadataTest.test_create_get_delete_volume_metadata	Pass
tempest.api.volume.test_volume_metadata.VolumesV2MetadataTest.test_update_volume_metadata	Pass
tempest.api.volume.test_volume_metadata.VolumesV2MetadataTest.test_update_volume_metadata_item	Pass
tempest.api.volume.test_volumes_get.VolumesV1GetTest.test_volume_create_get_update_delete_from_image	Pass
tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_attach_detach_volume_to_instance	Pass
tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_get_volume_attachment	Pass
tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_reserve_unreserve_volume	Pass
tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_volume_bootable	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_attach_volumes_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_invalid_size	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_nonexistent_snapshot_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_nonexistent_source_valid	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_nonexistent_volume_type	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_out_passing_size	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_size_negative	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_size_zero	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_delete_invalid_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_delete_volume_without_passing_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_detach_volumes_with_invalid_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_get_invalid_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_get_volume_without_passing_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_list_volumes	Pass

mes_detail_with_invalid_status	
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_list_volumes_detail_with_nonexistent_name	Pass
tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_volume_readdonly_update	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_list_volumes_with_invalid_status	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_list_volumes_with_nonexistent_name	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_reserve_volume_with_negative_volume_status	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_reserve_volume_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_unreserve_volume_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_update_volume_with_empty_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_update_volume_with_invalid_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_update_volume_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_delete_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_extend_with_None_size	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_extend_with_non_number_size	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_extend_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_extend_with_size_smaller_than_original_size	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_extend_without_passing_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_get_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_volume_upload	Pass
tempest.scenario.test_shelve_instance.TestShelveInstance.test_shelve_volume_backed_instance	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_by_name	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_details_by_name	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_param_display_name_and_status	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_with_detail_param_display_name_and_status	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_with_detail_param_metadata	Pass

tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_with_details	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_with_param_metadata	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volumes_list_by_availability_zone	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volumes_list_by_status	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volumes_list_details_by_availability_zone	Pass
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volumes_list_details_by_status	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_attach_volumes_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_invalid_size	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_nonexistent_snapshot_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_nonexistent_source_valid	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_nonexistent_volume_type	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_out_passing_size	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_size_negative	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_size_zero	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_delete_invalid_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_delete_volume_without_passing_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_detach_volumes_with_invalid_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_get_invalid_id_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_get_volume_without_passing_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_list_volumes_detail_with_invalid_status	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_list_volumes_detail_with_nonexistent_name	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_list_volumes_with_invalid_status	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_list_volumes_with_nonexistent_name	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_reserve_volume_with_negative_volume_status	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_reserve_volume_with_nonexistent_volume_id	Pass

tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_unreserve_volume_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_update_volume_with_empty_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_update_volume_with_invalid_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_update_volume_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_delete_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_extend_with_None_size	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_extend_with_non_number_size	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_extend_with_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_extend_with_size_smaller_than_original_size	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_extend_without_passing_volume_id	Pass
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_get_nonexistent_volume_id	Pass
tempest.api.volume.test_volumes_snapshots.VolumesV1SnapshotTestJSON.test_snapshot_create_get_list_update_delete	Pass
tempest.api.volume.test_volumes_snapshots.VolumesV1SnapshotTestJSON.test_snapshot_create_with_volume_in_use	Pass
tempest.api.volume.test_volumes_snapshots.VolumesV1SnapshotTestJSON.test_snapshots_list_details_with_params	Pass
tempest.api.volume.test_volumes_snapshots.VolumesV1SnapshotTestJSON.test_snapshots_list_with_params	Pass
tempest.api.volume.test_volumes_snapshots.VolumesV1SnapshotTestJSON.test_volume_from_snapshot	Pass
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPatternV2.test_create_ebs_image_and_check_boot	Pass
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPatternV2.test_volume_boot_pattern	Pass
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPattern.test_create_ebs_image_and_check_boot	Pass
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPattern.test_volume_boot_pattern	Pass

6.0 Troubleshooting

For more details on troubleshooting health check test failures, refer to “What To Do When A Test Fails” section in Mirantis User guide at:

<https://docs.mirantis.com/openstack/fuel/fuel-8.0/#guides>

For more details on Mirantis health check tests, isolating and debugging failures, and other details, refer to “Details Of Health Checks” and “Troubleshooting” sections of Mirantis Operations Guide at:

<https://docs.mirantis.com/openstack/fuel/fuel-8.0/#guides>

Openstack services (cinder, nova, neutron, etc.) log files are located in “/var/log” directory.