INSTALLATION RUNBOOK FOR Tintri Cinder Driver

Product Name:	**Cinder Driver**
Product Version:	**2.0.0.1**
MOS Version:	**9.0**
OpenStack Version:	**Mitaka**
Product Type:	**Cinder Driver**

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Document History

Version	Revision Date	Description
0.1	09-02-2016	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

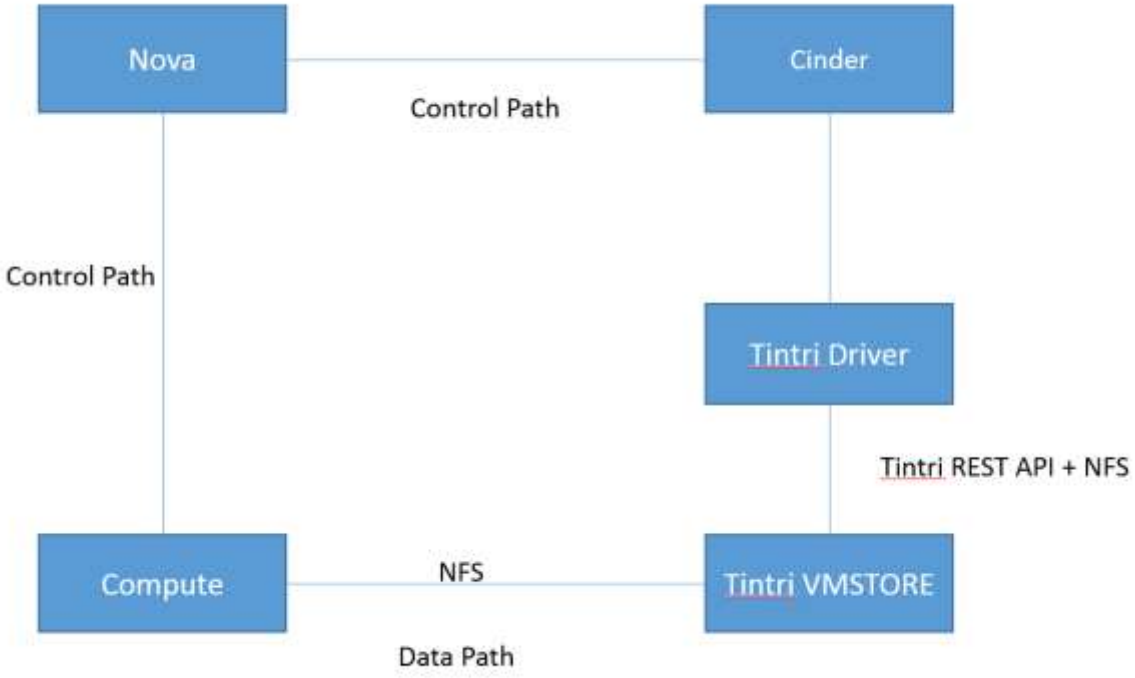
This document provides the details of the setup, configuration and tests run on Mirantis OpenStack with Tintri Cinder driver for the purpose of Unlocked OpenStack Driver Validation. To interpret the results, you must be familiar with:

- 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 Tintri eliminates LUNs and volumes—the markers of out-of-date, physical storage—instead using individual virtual machines as the unit of management.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



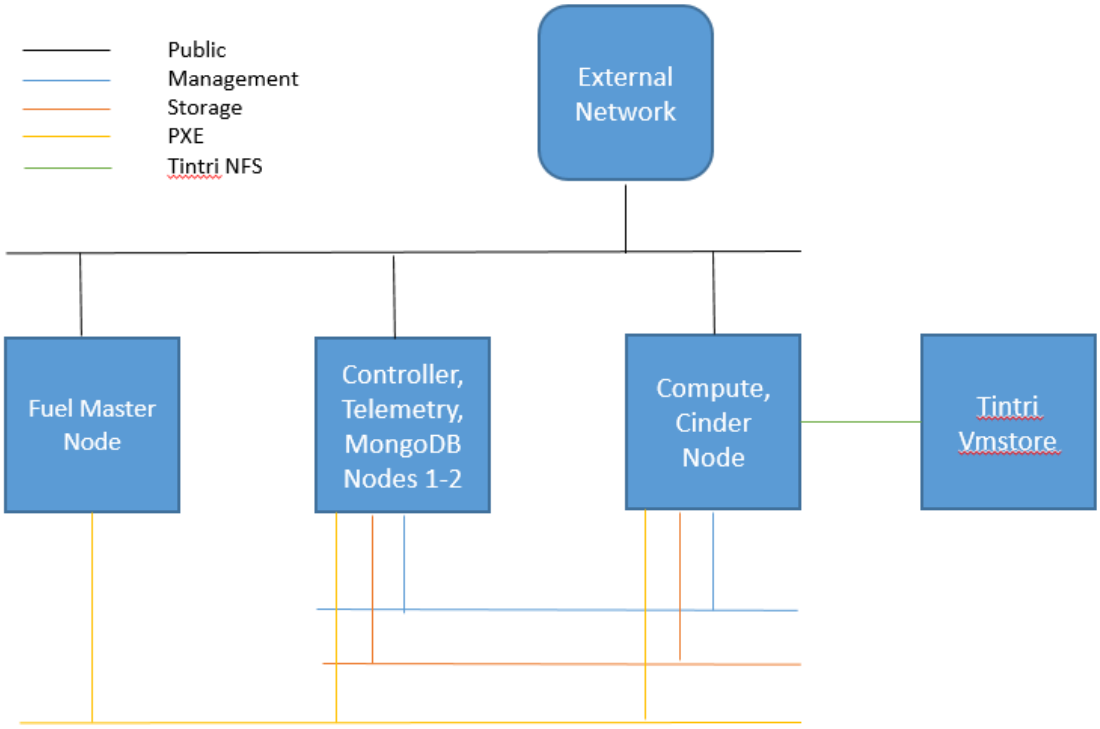
4. Physical & Logical network topology

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.

Please refer to Mirantis Openstack Documentation Center at https://docs.mirantis.com/openstack/fuel/fuel-9.0 for detail information on how to install Mirantis OpenStack environment, including Fuel master and other nodes.

5.2 MOS Installation

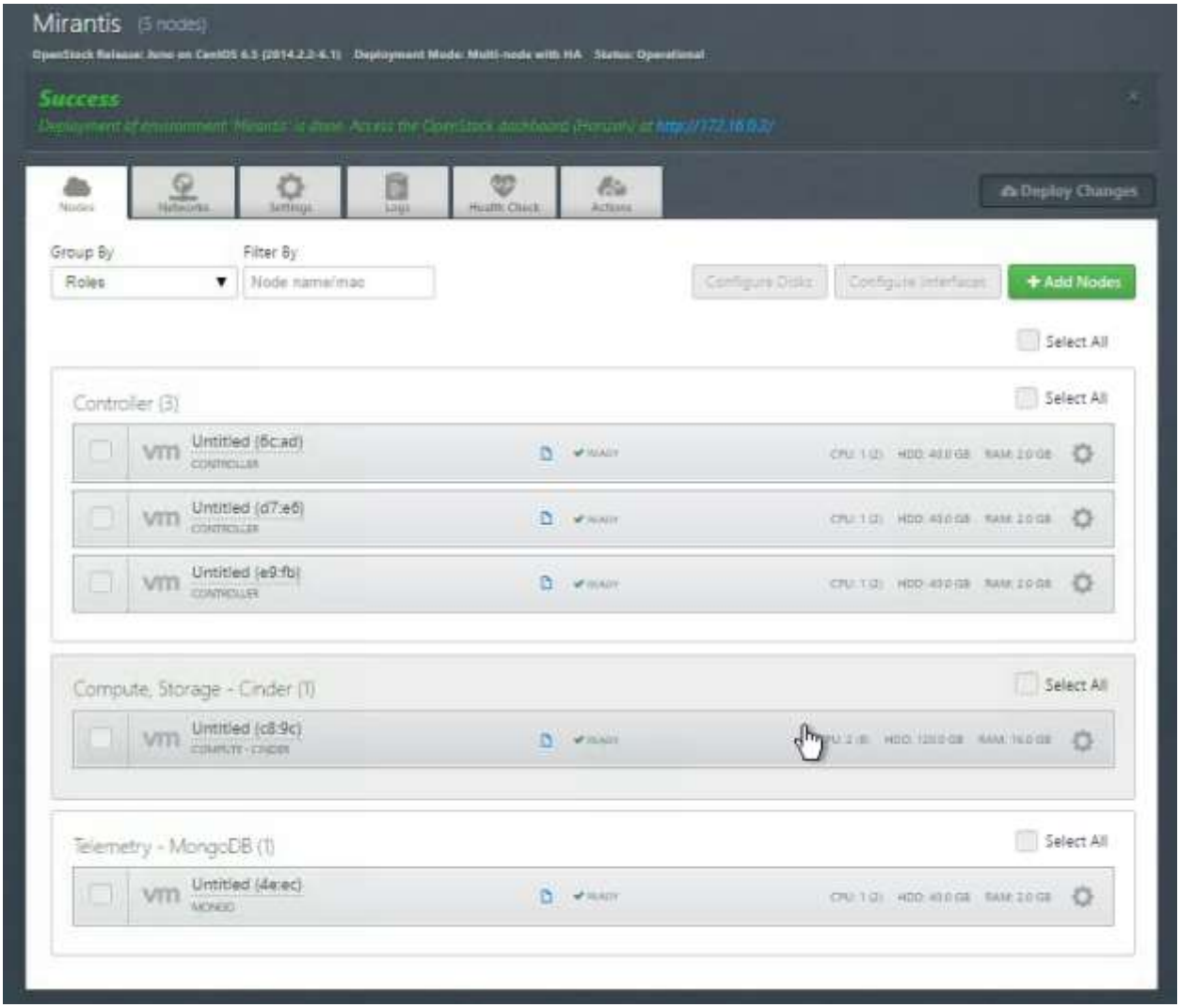
Creation of OpenStack environment

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 Envirnment (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.

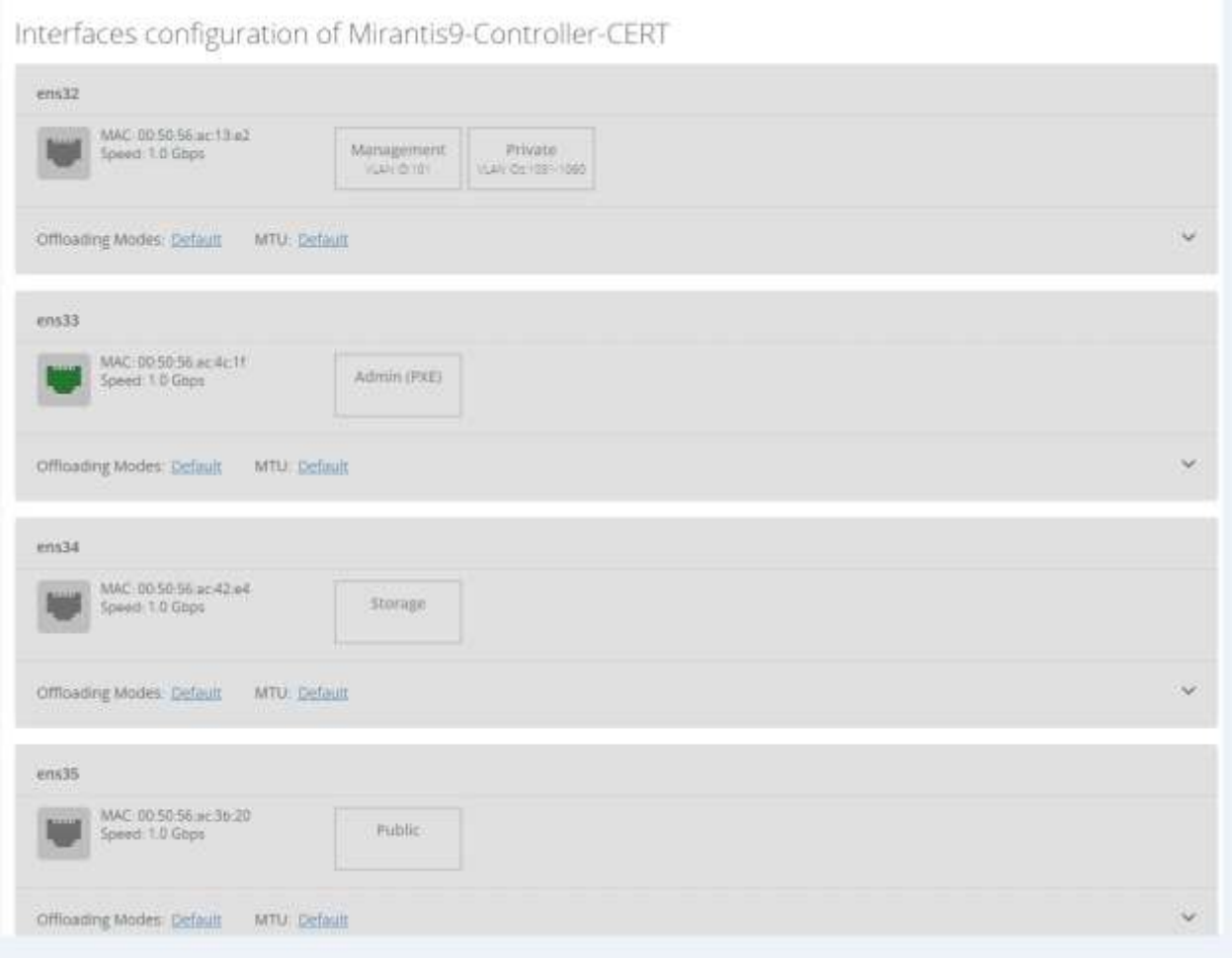
All the nodes (Physical or Virtual) should have access to the Mirantis PXE network(on the same isolated VLAN or switch). Boot the nodes and wait until they show up on the fuel UI. Add the nodes to the environment and start the deployment.

MOS Deployment

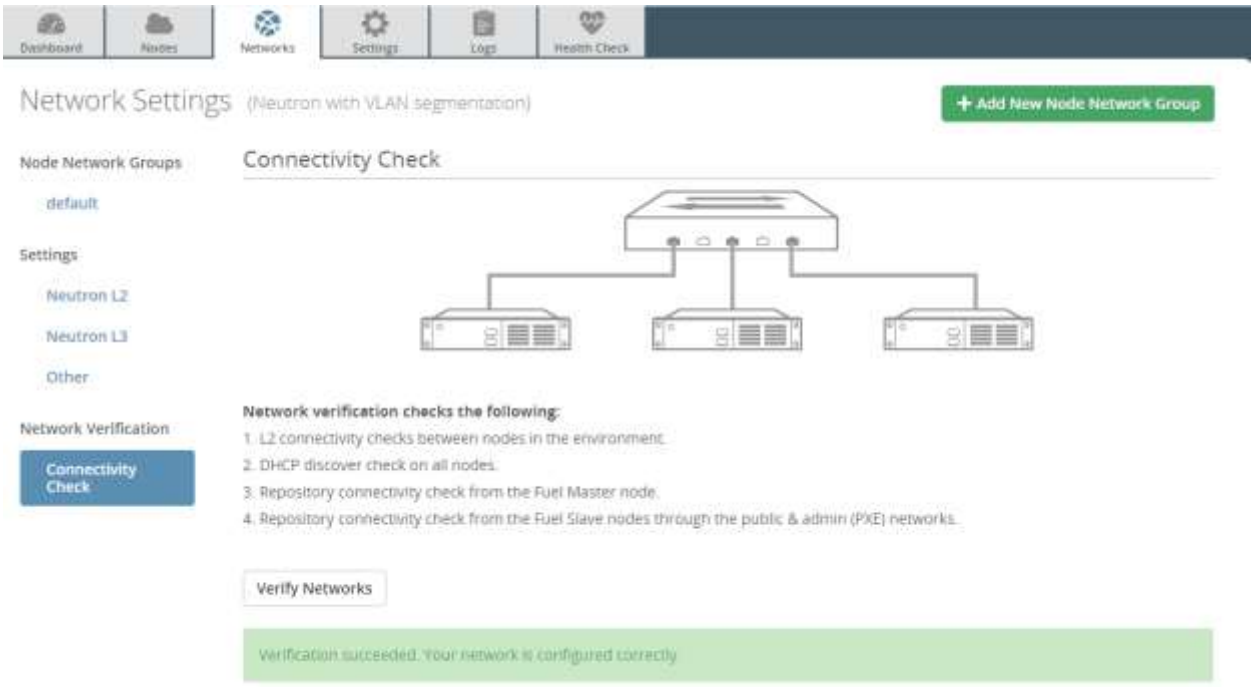
Once all the nodes have booted up through PXE, they appear on the Fuel UI. Configure controllers, cinder and compute. Have multiple controllers in the setup (3 controllers are recommended).



Configure interfaces on the machines. And set networks for Management, Storage, Private and Public networks.

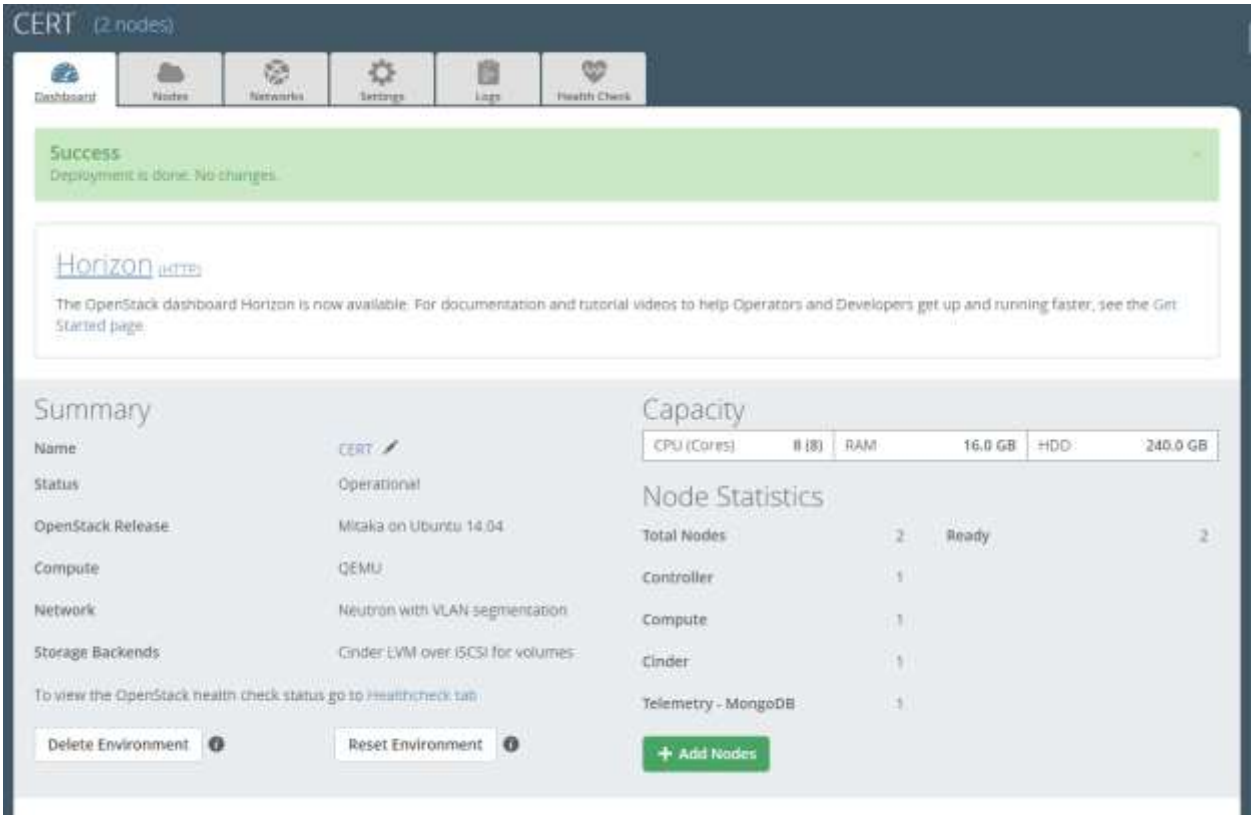


After configuring the nodes, run “Verify Networks” under Networks tab. The test should pass.



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 (2 nodes)
Dashboard
Nodes
Networks
Settings
Logs
Health Check
Success
Deployment is done. No changes.
Horizon (HTTP)
The OpenStack dashboard Horizon is now available. For documentation and tutorial videos to help Operators and Developers get up and running faster, see the Get Started page
Summary
Name
CERT
Status
Operational
OpenStack Release
Mitaka on Ubuntu 14.04
Compute
QEMU
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
Capacity
CPU (Cores) 8 (8)
RAM 16.0 GB
HDD 240.0 GB
Node Statistics
Total Nodes 2
Ready 2
Controller 1
Compute 1
Cinder 1
Telemetry - MongoDB 1
+ Add Nodes

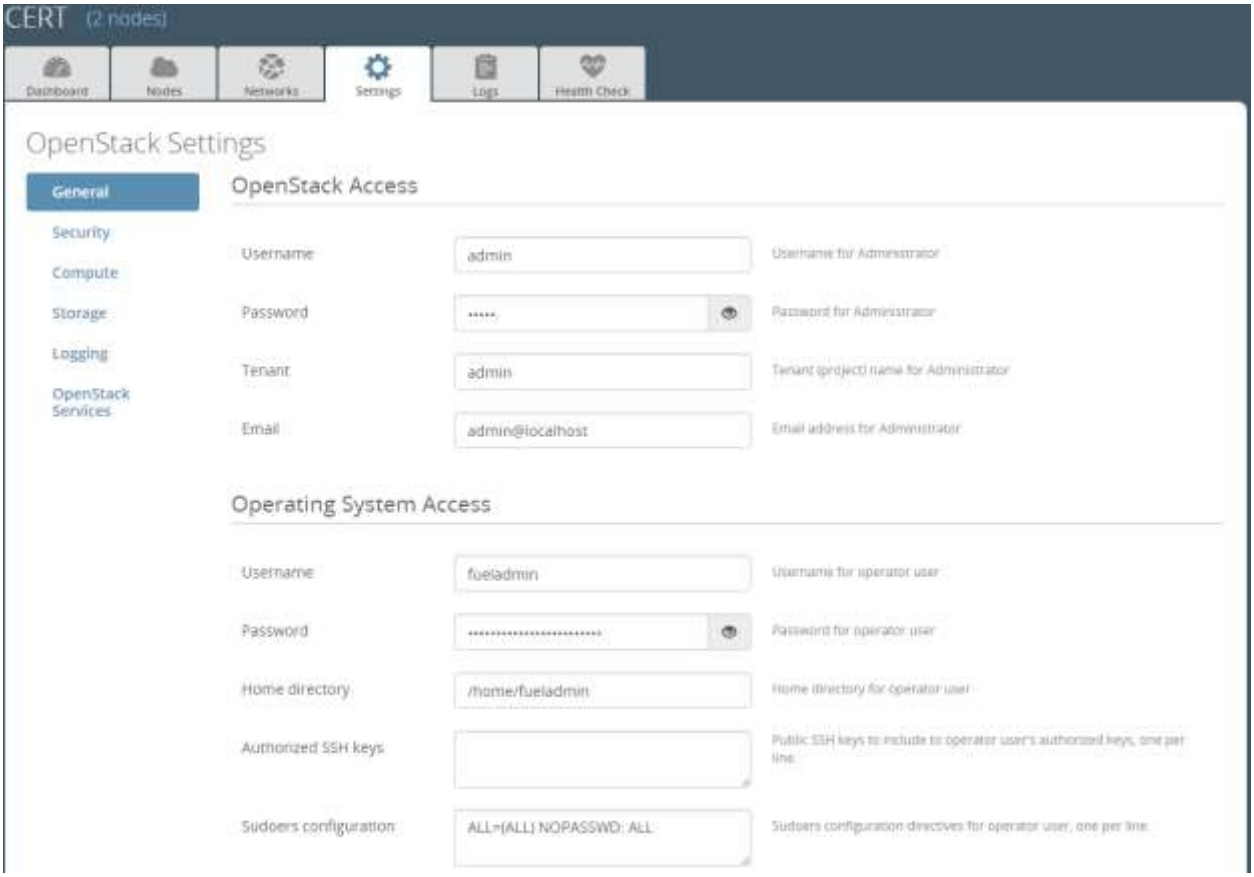
Sanity tests. Duration 30 sec - 2 min	Expected Duration	Actual Duration	Status
Ceilometer test to list meters, alarms, resources and events	180 s.	6.0	✔
Request flavor list	20 s.	0.3	✔
Request image list using Nova	20 s.	0.3	✔
Request instance list	20 s.	0.2	✔
Request absolute limits list	20 s.	0.0	✔
Request snapshot list	20 s.	0.4	✔
Request volume list	20 s.	0.1	✔
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.	0.1	✔
Request user list	20 s.	0.1	✔
Check that required services are running	180 s.	1.9	✔
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.	0.1	✔

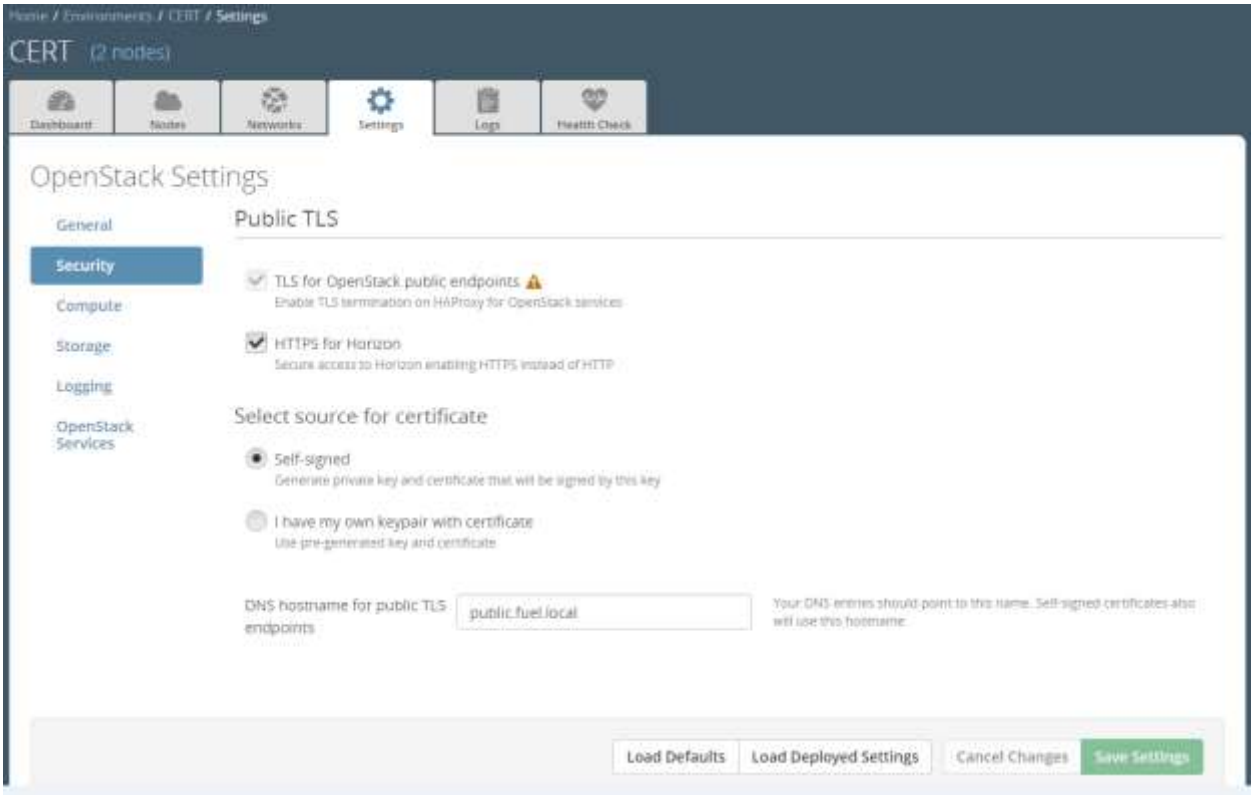
Functional tests. Duration 3 min - 14 min	Expected Duration	Actual Duration	Status
Create instance flavor	30 s.	0.4	✔
Check create, update and delete image actions using Glance v2	70 s.	2.6	✔
Create volume and boot instance from it	350 s.	48.5	✔
Create volume and attach it to instance	350 s.	68.1	✔
Check network connectivity from instance via floating IP	300 s.	101.2	✔
Create keypair	25 s.	0.5	✔
Create security group	25 s.	0.8	✔
Check network parameters	50 s.	0.1	✔
Launch instance	200 s.	22.8	✔
Launch instance with file injection	200 s.	60.5	✔
Launch instance, create snapshot, launch instance from snapshot	300 s.	57.7	✔
Create user and authenticate with it.	80 s.	0.5	✔

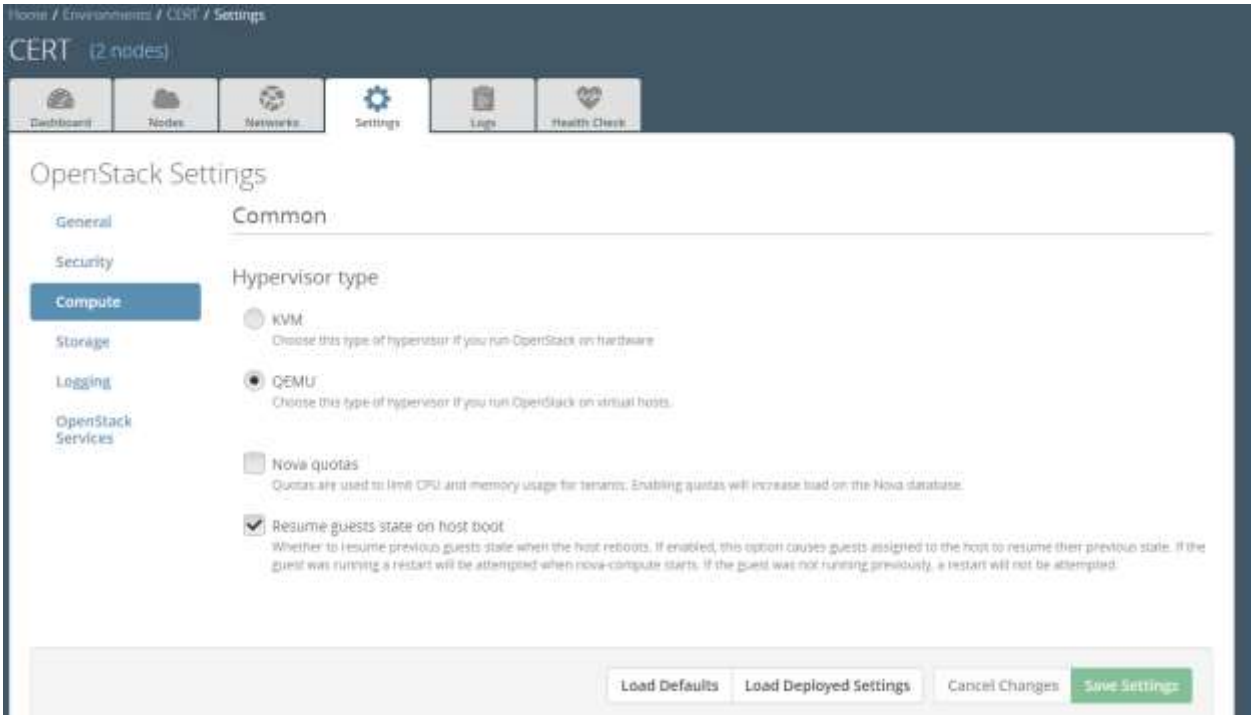
Platform services functional tests. Duration 3 min - 60 min	Expected Duration	Actual Duration	Status
Ceilometer test to check alarm state and get Nova notifications	90 s.	40.0	✔
Ceilometer test to check events and traits	40 s.	42.0	✔
Ceilometer test to check notifications from Glance	5 s.	4.7	✔
Ceilometer test to check notifications from Keystone	5 s.	8.5	✔
Ceilometer test to check notifications from Neutron	40 s.	11.6	✔
Ceilometer test to check events from Cinder	150 s.	78.2	✔
Ceilometer test to create, check and list samples	5 s.	2.7	✔
Ceilometer test to create, update, check and delete alarm	120 s.	65.6	✔
Typical stack actions: create, delete, show details, etc.	720 s.	46.3	✔
Advanced stack actions: suspend, resume and check	900 s.	73.9	✔
Check stack rollback	470 s.	101.5	✔
Update stack actions: inplace, replace and update whole template	1300 s.	107.4	✔

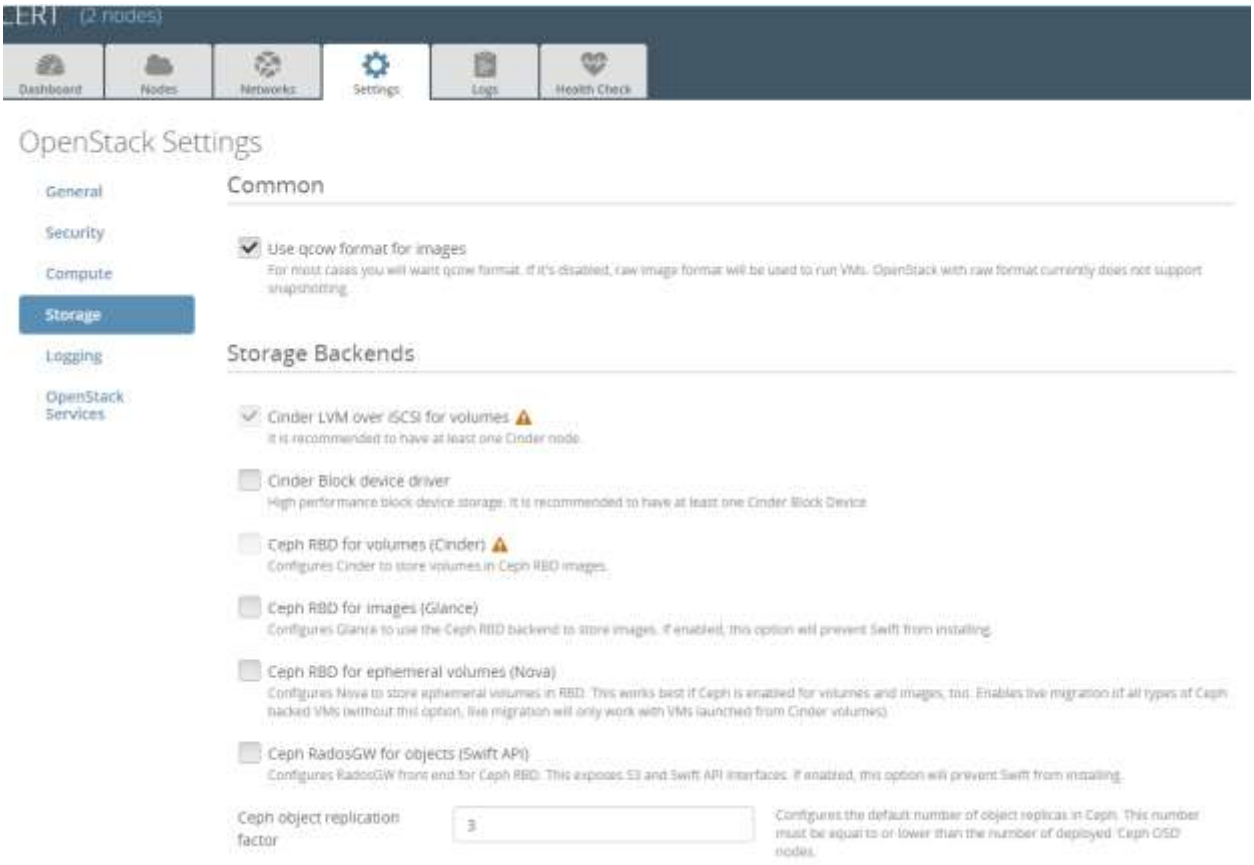
Cloud validation tests. Duration 30 sec - 2 min	Expected Duration	Actual Duration	Status
Check disk space outage on controller and compute nodes	20 s.	0.6	✔
Check log rotation configuration on all nodes	20 s.	0.6	✔

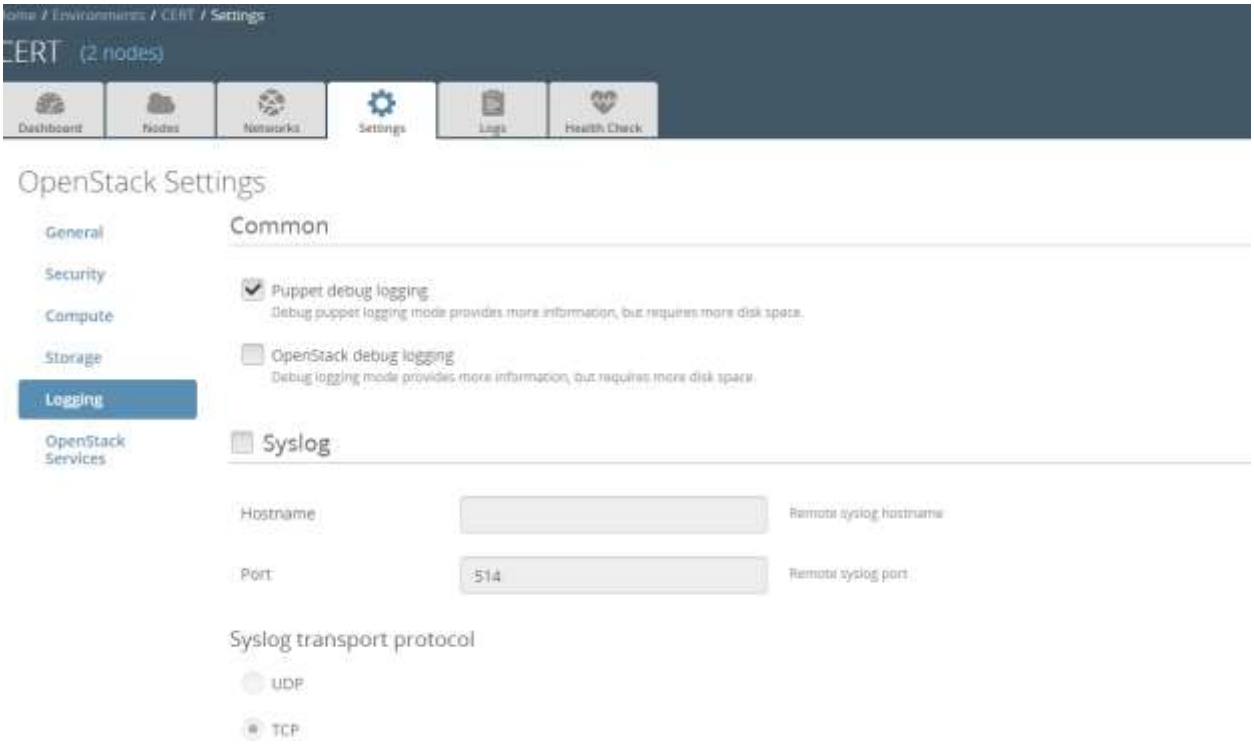
Configuration tests. Duration 30 sec - 2 min	Expected Duration	Actual Duration	Status
Check if default credentials for OpenStack cluster have changed	20 s.	0.1	✔
Check usage of default credentials for keystone on master node	20 s.	0.1	✔

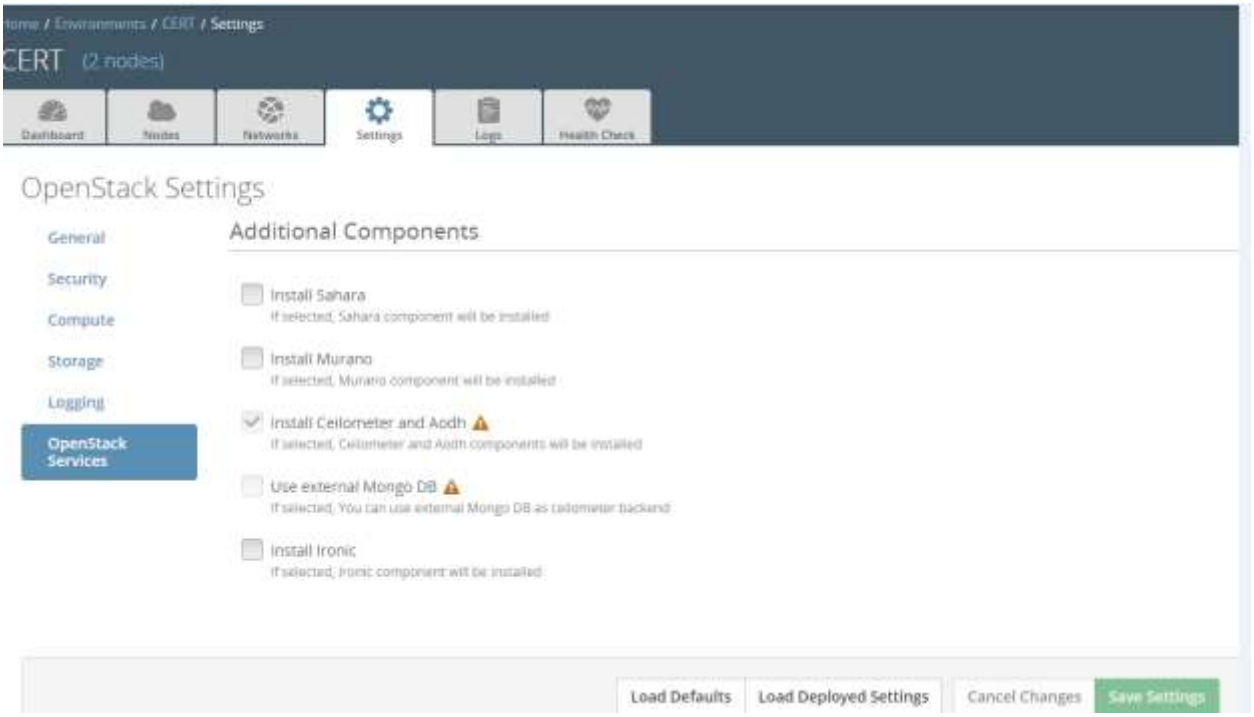



Home / Environments / CERT / Settings
CERT (2 nodes)
Dashboard
Nodes
Networks
Settings
Logs
Health Check
OpenStack Settings
General
Security
Compute
Storage
Logging
OpenStack Services
Public TLS
TLS for OpenStack public endpoints
Enable TLS termination on HAProxy for OpenStack services
HTTPS for Horizon
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
Load Defaults
Load Deployed Settings
Cancel Changes
Save Settings


Home / Environments / CERT / Settings
CERT (2 nodes)
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
Load Deployed Settings
Cancel Changes
Save Settings


CERT (2 nodes)
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 Cinder node.
Cinder Block device driver
High performance block device storage. It is recommended to have at least one 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 'Ceph OSD' nodes.


Home / Environments / CERT / Settings
CERT (2 nodes)
Dashboard
Nodes
Networks
Settings
Logs
Health Check
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
514
Remote syslog port
Syslog transport protocol
UDP
TCP



5.3 Tintri Cinder Driver installation steps

Tintri Cinder driver is already included in Openstack Mitaka 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-9.0 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.

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-9.0

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-9.0

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

5.5.2 Test results

{3} tempest.api.compute.volumes.test_volumes_get.VolumesGetTestJSON.test_volume_create_get_delete [8.808912s] ... ok
{2} tempest.api.compute.volumes.test_volume_snapshots.VolumesSnapshotsTestJSON.test_volume_snapshot_create_get_list_delete [9.928892s] ... ok
{2} tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_create_volume_with_invalid_size [0.302430s] ... ok
{2} tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_create_volume_with_out_passing_size [0.025594s] ... ok
{2} tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_create_volume_with_size_zero [0.042799s] ... ok

{2}
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_delete_invalid_volume_id [0.323653s] ... ok
{2}
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_delete_volume_without_passing_volume_id [0.018744s] ... ok
{2}
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_get_invalid_volume_id [0.023559s] ... ok
{2}
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_get_volume_without_passing_volume_id [0.020964s] ... ok
{2}
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_volume_delete_nonexistent_volume_id [0.079948s] ... ok
{2}
tempest.api.compute.volumes.test_volumes_negative.VolumesNegativeTest.test_volume_get_nonexistent_volume_id [0.210141s] ... ok
{2}
tempest.api.volume.admin.test_volume_hosts.VolumeHostsAdminV1TestsJSON.test_list_hosts [0.155722s] ... ok
{0}
tempest.api.compute.servers.test_delete_server.DeleteServersTestJSON.test_delete_server_while_in_attached_volume [19.595964s] ... ok
{2}
tempest.api.volume.admin.test_volume_quotas_negative.BaseVolumeQuotasNegativeV2TestJSON.test_quota_volume_gigabytes [1.040716s] ... ok
{2}
tempest.api.volume.admin.test_volume_quotas_negative.BaseVolumeQuotasNegativeV2TestJSON.test_quota_volumes [0.116658s] ... ok
{3}
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV1Test.test_backend_name_distinction [0.669131s] ... ok
{3}
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV1Test.test_backend_name_distinction_with_prefix [0.825568s] ... ok
{3}
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV1Test.test_backend_name_reporting [0.713623s] ... ok
{3}
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV1Test.test_backend_name_reporting_with_prefix [0.930346s] ... ok

{2}
tempest.api.volume.admin.test_volume_services.VolumesServicesV2TestJSON.test_get_service_by_host_name [0.332342s] ... ok
{2}
tempest.api.volume.admin.test_volume_services.VolumesServicesV2TestJSON.test_get_service_by_service_and_host_name [0.148111s] ... ok
{2}
tempest.api.volume.admin.test_volume_services.VolumesServicesV2TestJSON.test_get_service_by_service_binary_name [0.019743s] ... ok
{2}
tempest.api.volume.admin.test_volume_services.VolumesServicesV2TestJSON.test_list_services [0.020664s] ... ok
{0} tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list [0.241722s] ... ok
{0}
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list_param_limit [0.090507s] ... ok
{0}
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list_param_offset_and_limit [0.234976s] ... ok
{0}
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list_with_detail_param_limit [0.079545s] ... ok
{0}
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list_with_detail_param_offset_and_limit [0.165663s] ... ok
{0}
tempest.api.compute.volumes.test_volumes_list.VolumesTestJSON.test_volume_list_with_details [0.073362s] ... ok
{2}
tempest.api.volume.admin.test_volume_snapshot_quotas_negative.VolumeSnapshotQuotasNegativeV2TestJSON.test_quota_volume_gigabytes_snapshots [2.064753s] ... ok
{2}
tempest.api.volume.admin.test_volume_snapshot_quotas_negative.VolumeSnapshotQuotasNegativeV2TestJSON.test_quota_volume_snapshots [0.107562s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_reset_snapshot_status [0.588689s] ... ok
{2}
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV2Test.test_volume_type_extra_spec_create_get_delete [0.363024s] ... ok
{2}
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV2Test.test_volume_type_extra_specs_list [0.073029s] ... ok

{2}
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV2Test.test_volume_type_extra_specs_update [0.212591s] ... ok
{2} tempest.api.volume.test_extensions.ExtensionsV2TestJSON.test_list_extensions [0.249558s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_snapshot_force_delete_when_snapshot_is_creating [5.422655s] ... ok
{0}
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV2Test.test_backend_name_distinction [0.519707s] ... ok
{0}
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV2Test.test_backend_name_distinction_with_prefix [0.618056s] ... ok
{0}
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV2Test.test_backend_name_reporting [0.520528s] ... ok
{0}
tempest.api.volume.admin.test_multi_backend.VolumeMultiBackendV2Test.test_backend_name_reporting_with_prefix [0.543730s] ... ok
{1}
tempest.api.compute.servers.test_server_rescue_negative.ServerRescueNegativeTestJSON.test_rescued_vm_attach_volume [14.625919s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_snapshot_force_delete_when_snapshot_is_deleting [5.899822s] ... ok
{2}
tempest.api.volume.test_snapshot_metadata.SnapshotV1MetadataTestJSON.test_create_get_delete_snapshot_metadata [1.063015s] ... ok
{2}
tempest.api.volume.test_snapshot_metadata.SnapshotV1MetadataTestJSON.test_update_snapshot_metadata [0.811984s] ... ok
{2}
tempest.api.volume.test_snapshot_metadata.SnapshotV1MetadataTestJSON.test_update_snapshot_metadata_item [0.734430s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_snapshot_force_delete_when_snapshot_is_error [5.181116s] ... ok
{0}
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_delete_quota [2.651239s] ... ok
{0}
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_list_default_quotas [0.261534s] ... ok

{0}
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_list_quotas [0.630915s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_snapshot_force_delete_when_snapshot_is_error_deleting [4.787765s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV1Test.test_update_snapshot_status [0.327200s] ... ok
{2}
tempest.api.volume.test_volume_metadata.VolumesV1MetadataTest.test_create_get_delete_volume_metadata [1.160718s] ... ok
{0}
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_quota_usage [3.479694s] ... ok
{2}
tempest.api.volume.test_volume_metadata.VolumesV1MetadataTest.test_update_volume_metadata [1.173089s] ... ok
{0}
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_show_quota_usage [0.833663s] ... ok
{2}
tempest.api.volume.test_volume_metadata.VolumesV1MetadataTest.test_update_volume_metadata_item [1.186550s] ... ok
{0}
tempest.api.volume.admin.test_volume_quotas.VolumeQuotasAdminV1TestJSON.test_update_all_quota_resources_for_tenant [1.272960s] ... ok
{2} tempest.api.volume.test_volumes_extend.VolumesV1ExtendTest.test_volume_extend [4.540743s] ... ok
{0}
tempest.api.volume.admin.test_volume_quotas_negative.VolumeQuotasNegativeV1TestJSON.test_quota_volume_gigabytes [1.536233s] ... ok
{0}
tempest.api.volume.admin.test_volume_quotas_negative.VolumeQuotasNegativeV1TestJSON.test_quota_volumes [0.231604s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_reset_snapshot_status [0.712094s] ... ok
{0}
tempest.api.volume.admin.test_volume_services.VolumesServicesV1TestJSON.test_get_service_by_host_name [0.156674s] ... ok
{0}
tempest.api.volume.admin.test_volume_services.VolumesServicesV1TestJSON.test_get_service_by_service_and_host_name [0.026780s] ... ok

{0}
tempest.api.volume.admin.test_volume_services.VolumesServicesV1TestJSON.test_get_service_by_service_binary_name [0.030553s] ... ok
{0}
tempest.api.volume.admin.test_volume_services.VolumesServicesV1TestJSON.test_list_services [0.028838s] ... ok
{1}
tempest.api.compute.servers.test_server_rescue_negative.ServerRescueNegativeTestJSON.test_rescued_vm_detach_volume [28.388803s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_create_invalid_body [0.024914s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_create_none_body [0.141372s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_create_nonexistent_type_id [0.040648s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_delete_nonexistent_volume_type_id [0.167354s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_get_nonexistent_extra_spec_id [0.043924s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_get_nonexistent_volume_type_id [0.161980s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_list_nonexistent_volume_type_id [0.031131s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_update_multiple_extra_spec [0.033380s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_update_no_body [0.022951s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_update_none_extra_spec_id [0.027488s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV2Test.test_update_nonexistent_extra_spec_id [0.032809s] ... ok

{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_snapshot_force_delete_when_snapshot_is_creating [5.633133s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV1Test.test_create_with_empty_name [0.199496s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV1Test.test_create_with_nonexistent_volume_type [0.505106s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV1Test.test_delete_nonexistent_type_id [0.377704s] ... ok
{0}
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV1Test.test_get_nonexistent_type_id [0.143951s] ... ok
{2}
tempest.api.volume.test_volumes_get.VolumesV2GetTest.test_volume_create_get_update_delete [9.893362s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_snapshot_force_delete_when_snapshot_is_deleting [5.146763s] ... ok
{0} tempest.api.volume.test_extensions.ExtensionsV1TestJSON.test_list_extensions [0.445615s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_snapshot_force_delete_when_snapshot_is_error [5.236002s] ... ok
{0}
tempest.api.volume.test_volume_transfers.VolumesV1TransfersTest.test_create_get_list_accept_volume_transfer [5.322600s] ... ok
{2}
tempest.api.volume.test_volumes_get.VolumesV2GetTest.test_volume_create_get_update_delete_as_clone [11.690597s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_snapshot_force_delete_when_snapshot_is_error_deleting [5.287420s] ... ok
{3}
tempest.api.volume.admin.test_snapshots_actions.SnapshotsActionsV2Test.test_update_snapshot_status [0.361989s] ... ok
{0}
tempest.api.volume.test_volume_transfers.VolumesV1TransfersTest.test_create_list_delete_volume_transfer [5.141443s] ... ok
{3}
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_delete_quota [2.949335s] ... ok

{3}
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_list_default_quotas [1.066063s] ... ok
{3}
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_list_quotas [1.023291s] ... ok
{0}
tempest.api.volume.test_volume_transfers.VolumesV2TransfersTest.test_create_get_list_accept_volume_transfer [6.017841s] ... ok
{2}
tempest.api.volume.test_volumes_get.VolumesV2GetTest.test_volume_create_get_update_delete_from_image [14.481196s] ... ok
{1}
tempest.api.compute.volumes.test_attach_volume.AttachVolumeTestJSON.test_list_get_volume_attachments [24.953360s] ... ok
{3}
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_quota_usage [4.082982s] ... ok
{3}
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_show_quota_usage [1.138089s] ... ok
{3}
tempest.api.volume.admin.test_volume_quotas.BaseVolumeQuotasAdminV2TestJSON.test_update_all_quota_resources_for_tenant [1.818449s] ... ok
{0}
tempest.api.volume.test_volume_transfers.VolumesV2TransfersTest.test_create_list_delete_volume_transfer [5.881436s] ... ok
{1}
tempest.api.volume.admin.test_volume_hosts.VolumeHostsAdminV2TestsJSON.test_list_hosts [0.214980s] ... ok
{2} tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list [0.088691s] ... ok
{2} tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_by_name [0.068092s] ... ok
{2}
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_details_by_name [0.131440s] ... ok
{2}
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_param_display_name_and_status [0.186007s] ... ok
{2}
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_with_detail_param_display_name_and_status [0.144971s] ... ok

{2}
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_with_detail_param_metadata [0.068817s] ... ok
{2}
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_with_details [0.084721s] ... ok
{2}
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_with_param_metadata [0.090356s] ... ok
{2}
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volumes_list_by_availability_zone [0.112277s] ... ok
{2} tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volumes_list_by_status [0.129711s] ... ok
{2}
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volumes_list_details_by_availability_zone [0.064865s] ... ok
{2}
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volumes_list_details_by_status [0.066977s] ... ok
{3}
tempest.api.volume.admin.test_volume_snapshot_quotas_negative.VolumeSnapshotNegativeV1TestJSON.test_quota_volume_gigabytes_snapshots [0.975277s] ... ok
{3}
tempest.api.volume.admin.test_volume_snapshot_quotas_negative.VolumeSnapshotNegativeV1TestJSON.test_quota_volume_snapshots [0.086215s] ... ok
{1}
tempest.api.volume.admin.test_volume_types.VolumeTypesV1Test.test_volume_crud_with_volume_type_and_extra_specs [6.859968s] ... ok
{1}
tempest.api.volume.admin.test_volume_types.VolumeTypesV1Test.test_volume_type_create_get_delete [0.321529s] ... ok
{1}
tempest.api.volume.admin.test_volume_types.VolumeTypesV1Test.test_volume_type_encryption_create_get_delete [0.737316s] ... ok
{1} tempest.api.volume.admin.test_volume_types.VolumeTypesV1Test.test_volume_type_list [0.030619s] ... ok
{0}
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_attach_detach_volume_to_instance [2.405453s] ... ok
{0}
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_get_volume_attachment [3.215525s] ... ok

{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_create_invalid_body [0.200424s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_create_none_body [0.024584s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_create_nonexistent_type_id [0.182356s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_delete_nonexistent_volume_type_id [0.032365s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_get_nonexistent_extra_spec_id [0.047103s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_get_nonexistent_volume_type_id [0.147469s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_list_nonexistent_volume_type_id [0.036706s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_update_multiple_extra_spec [0.031923s] ... ok
{0}
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_reserve_unreserve_volume [1.414543s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_update_no_body [0.032009s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_update_none_extra_spec_id [0.038692s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_extra_specs_negative.ExtraSpecsNegativeV1Test.test_update_nonexistent_extra_spec_id [0.039323s] ... ok
{0} tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_volume_bootable [0.982375s] ... ok
{0}
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_volume_readonly_update [2.007686s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV2Test.test_create_with_empty_name [0.213927s] ... ok

{2}
tempest.api.volume.test_volumes_snapshots.VolumesV2SnapshotTestJSON.test_snapshot_create_get_list_update_delete [6.046796s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV2Test.test_create_with_nonexistent_volume_type [0.495726s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV2Test.test_delete_nonexistent_type_id [1.300259s] ... ok
{3}
tempest.api.volume.admin.test_volume_types_negative.VolumeTypesNegativeV2Test.test_get_nonexistent_type_id [0.048860s] ... ok
{1}
tempest.api.volume.admin.test_volume_types.VolumeTypesV2Test.test_volume_crud_with_volume_type_and_extra_specs [11.061108s] ... ok
{1}
tempest.api.volume.admin.test_volume_types.VolumeTypesV2Test.test_volume_type_create_get_delete [0.801534s] ... ok
{3}
tempest.api.volume.test_availability_zone.AvailabilityZoneV2TestJSON.test_get_availability_zone_list [0.601120s] ... ok
{1}
tempest.api.volume.admin.test_volume_types.VolumeTypesV2Test.test_volume_type_encryption_create_get_delete [0.846039s] ... ok
{1} tempest.api.volume.admin.test_volume_types.VolumeTypesV2Test.test_volume_type_list [0.075521s] ... ok
{1}
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV1Test.test_volume_type_extra_spec_create_get_delete [0.553672s] ... ok
{1}
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV1Test.test_volume_type_extra_specs_list [0.543074s] ... ok
{1}
tempest.api.volume.admin.test_volume_types_extra_specs.VolumeTypesExtraSpecsV1Test.test_volume_type_extra_specs_update [1.270263s] ... ok
{3} tempest.api.volume.test_qos.QosSpecsV1TestJSON.test_associate_disassociate_qos [8.977839s] ... ok
{3}
tempest.api.volume.test_qos.QosSpecsV1TestJSON.test_create_delete_qos_with_back_end_consumer [0.571769s] ... ok
{3}
tempest.api.volume.test_qos.QosSpecsV1TestJSON.test_create_delete_qos_with_both_consumer [3.312081s] ... ok

{3}
tempest.api.volume.test_qos.QosSpecsV1TestJSON.test_create_delete_qos_with_front_end_consumer [0.450762s] ... ok
{3} tempest.api.volume.test_qos.QosSpecsV1TestJSON.test_get_qos [0.067210s] ... ok
{3} tempest.api.volume.test_qos.QosSpecsV1TestJSON.test_list_qos [0.034548s] ... ok
{3} tempest.api.volume.test_qos.QosSpecsV1TestJSON.test_set_unset_qos_key [0.478365s] ... ok
{0} tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_volume_upload [30.778709s] ... ok
{2}
tempest.api.volume.test_volumes_snapshots.VolumesV2SnapshotTestJSON.test_snapshot_create_with_volume_in_use [33.722337s] ... ok
{1}
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV1Test.test_volume_force_delete_when_volume_is_attaching [4.494301s] ... ok
{3}
tempest.api.volume.test_snapshot_metadata.SnapshotV2MetadataTestJSON.test_create_get_delete_snapshot_metadata [0.806936s] ... ok
{3}
tempest.api.volume.test_snapshot_metadata.SnapshotV2MetadataTestJSON.test_update_snapshot_metadata [1.186638s] ... ok
{3}
tempest.api.volume.test_snapshot_metadata.SnapshotV2MetadataTestJSON.test_update_snapshot_metadata_item [0.931793s] ... ok
{1}
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV1Test.test_volume_force_delete_when_volume_is_creating [4.316872s] ... ok
{2}
tempest.api.volume.test_volumes_snapshots.VolumesV2SnapshotTestJSON.test_snapshots_list_details_with_params [4.831629s] ... ok
{1}
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV1Test.test_volume_force_delete_when_volume_is_error [4.111976s] ... ok
{1}
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV1Test.test_volume_reset_status [0.555362s] ... ok
{2}
tempest.api.volume.test_volumes_snapshots.VolumesV2SnapshotTestJSON.test_snapshots_list_with_params [5.182463s] ... ok
{0}
tempest.api.volume.v2.test_volumes_list.VolumesV2ListTestJSON.test_volume_list_details_with_multiple_params [0.204542s] ... ok
{3} tempest.api.volume.test_volumes_extend.VolumesV2ExtendTest.test_volume_extend [4.747321s] ... ok

{2}
tempest.api.volume.test_volumes_snapshots.VolumesV2SnapshotTestJSON.test_volume_from_snapshot [8.135609s] ... ok
{1}
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV2Test.test_volume_force_delete_when_volume_is_attaching [3.844843s] ... ok
{2}
tempest.api.volume.test_volumes_snapshots_negative.VolumesV1SnapshotNegativeTestJSON.test_create_snapshot_with_nonexistent_volume_id [0.410141s] ... ok
{2}
tempest.api.volume.test_volumes_snapshots_negative.VolumesV1SnapshotNegativeTestJSON.test_create_snapshot_without_passing_volume_id [0.440621s] ... ok
{1}
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV2Test.test_volume_force_delete_when_volume_is_creating [4.557433s] ... ok
{2}
tempest.api.volume.test_volumes_snapshots_negative.VolumesV2SnapshotNegativeTestJSON.test_create_snapshot_with_nonexistent_volume_id [0.286186s] ... ok
{2}
tempest.api.volume.test_volumes_snapshots_negative.VolumesV2SnapshotNegativeTestJSON.test_create_snapshot_without_passing_volume_id [0.323304s] ... ok
{3}
tempest.api.volume.test_volumes_get.VolumesV1GetTest.test_volume_create_get_update_delete [10.769266s] ... ok
{1}
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV2Test.test_volume_force_delete_when_volume_is_error [4.288081s] ... ok
{1}
tempest.api.volume.admin.test_volumes_actions.VolumesActionsV2Test.test_volume_reset_status [0.459844s] ... ok
{1}
tempest.api.volume.test_availability_zone.AvailabilityZoneV1TestJSON.test_get_availability_zone_list [0.254642s] ... ok
{1} tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_associate_disassociate_qos [1.511650s] ... ok
{1}
tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_create_delete_qos_with_back_end_consumer [0.175819s] ... ok
{1}
tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_create_delete_qos_with_both_consumer [0.149539s] ... ok
{1}
tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_create_delete_qos_with_front_end_consumer [0.143333s] ... ok

{1} tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_get_qos [0.025849s] ... ok
{1} tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_list_qos [0.026161s] ... ok
{1} tempest.api.volume.test_qos.QosSpecsV2TestJSON.test_set_unset_qos_key [0.185961s] ... ok
{3} tempest.api.volume.test_volumes_get.VolumesV1GetTest.test_volume_create_get_update_delete_as_clone [11.029053s] ... ok
{1} tempest.api.volume.test_volume_metadata.VolumesV2MetadataTest.test_create_get_delete_volume_metadata [1.102475s] ... ok
{1} tempest.api.volume.test_volume_metadata.VolumesV2MetadataTest.test_update_volume_metadata [1.317266s] ... ok
{1} tempest.api.volume.test_volume_metadata.VolumesV2MetadataTest.test_update_volume_metadata_item [0.986226s] ... ok
{3} tempest.api.volume.test_volumes_get.VolumesV1GetTest.test_volume_create_get_update_delete_from_image [11.730046s] ... ok
{1} tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_attach_detach_volume_to_instance [2.722245s] ... ok
{1} tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_get_volume_attachment [2.233113s] ... ok
{1} tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_reserve_unreserve_volume [0.908337s] ... ok
{1} tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_volume_bootable [0.721337s] ... ok
{3} tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_attach_volumes_with_nonexistent_volume_id [6.911933s] ... ok
{3} tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_invalid_size [0.020889s] ... ok
{3} tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_nonexistent_snapshot_id [0.037794s] ... ok
{3} tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_nonexistent_source_volid [0.065136s] ... ok

{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_nonexistent_volume_type [0.179230s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_without_passing_size [0.050215s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_size_negative [0.017975s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_create_volume_with_size_zero [0.023303s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_delete_invalid_volume_id [0.071739s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_delete_volume_without_passing_volume_id [0.018576s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_detach_volumes_with_invalid_volume_id [0.144048s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_get_invalid_volume_id [0.025832s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_get_volume_without_passing_volume_id [0.035806s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_list_volumes_detail_with_invalid_status [0.131018s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_list_volumes_detail_with_nonexistent_name [0.071290s] ... ok
{1}
tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_volume_readonly_update [1.286138s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_list_volumes_with_invalid_status [0.235906s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_list_volumes_with_nonexistent_name [0.048665s] ... ok

{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_reserve_volume_with_negative_volume_status [0.641786s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_reserve_volume_with_nonexistent_volume_id [0.086936s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_unreserve_volume_with_nonexistent_volume_id [0.070247s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_update_volume_with_empty_volume_id [0.037617s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_update_volume_with_invalid_volume_id [0.019999s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_update_volume_with_nonexistent_volume_id [0.084789s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_delete_nonexistent_volume_id [0.098728s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_extend_with_None_size [0.064922s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_extend_with_non_number_size [0.078117s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_extend_with_nonexistent_volume_id [0.062497s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_extend_with_size_smaller_than_original_size [0.074053s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_extend_without_passing_volume_id [0.072778s] ... ok
{3}
tempest.api.volume.test_volumes_negative.VolumesV1NegativeTest.test_volume_get_nonexistent_volume_id [0.076065s] ... ok
{1} tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_volume_upload [25.644011s] ... ok
{0}
tempest.scenario.test_shelve_instance.TestShelveInstance.test_shelve_volume_backed_instance [74.076413s] ... ok

{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list [0.093943s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_by_name [0.072157s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_details_by_name [0.085670s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_param_display_name_and_status [0.057642s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_with_detail_param_display_name_and_status [0.070200s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_with_detail_param_metadata [0.083721s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_with_details [0.080991s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list_with_param_metadata [0.079127s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volumes_list_by_availability_zone [0.174983s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volumes_list_by_status [0.147099s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volumes_list_details_by_availability_zone [0.104175s] ... ok
{1} tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volumes_list_details_by_status [0.102597s] ... ok
{1} tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_attach_volumes_with_nonexistent_volume_id [5.426221s] ... ok
{1} tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_invalid_size [0.142943s] ... ok
{1} tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_nonexistent_snapshot_id [0.040264s] ... ok

{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_nonexistent_source_volid [0.049805s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_nonexistent_volume_type [0.028660s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_without_passing_size [0.035734s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_size_negative [0.018081s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_create_volume_with_size_zero [0.016539s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_delete_invalid_volume_id [0.058698s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_delete_volume_without_passing_volume_id [0.012301s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_detach_volumes_with_invalid_volume_id [0.059232s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_get_invalid_volume_id [0.010707s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_get_volume_without_passing_volume_id [0.012487s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_list_volumes_detail_with_invalid_status [0.079518s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_list_volumes_detail_with_nonexistent_name [0.072347s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_list_volumes_with_invalid_status [0.058479s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_list_volumes_with_nonexistent_name [0.051837s] ... ok

{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_reserve_volume_with_negative_volume_status [0.456206s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_reserve_volume_with_nonexistent_volume_id [0.064351s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_unreserve_volume_with_nonexistent_volume_id [0.052150s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_update_volume_with_empty_volume_id [0.016869s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_update_volume_with_invalid_volume_id [0.020860s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_update_volume_with_nonexistent_volume_id [0.061765s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_delete_nonexistent_volume_id [0.070662s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_extend_with_None_size [0.069179s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_extend_with_non_number_size [0.055573s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_extend_with_nonexistent_volume_id [0.071588s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_extend_with_size_smaller_than_original_size [0.071181s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_extend_without_passing_volume_id [0.054897s] ... ok
{1}
tempest.api.volume.test_volumes_negative.VolumesV2NegativeTest.test_volume_get_nonexistent_volume_id [0.051715s] ... ok
{1}
tempest.api.volume.test_volumes_snapshots.VolumesV1SnapshotTestJSON.test_snapshot_create_get_list_update_delete [4.759455s] ... ok

{1}
tempest.api.volume.test_volumes_snapshots.VolumesV1SnapshotTestJSON.test_snapshot_create_with_volume_in_use [14.279053s] ... ok
{1}
tempest.api.volume.test_volumes_snapshots.VolumesV1SnapshotTestJSON.test_snapshots_list_details_with_params [4.551113s] ... ok
{1}
tempest.api.volume.test_volumes_snapshots.VolumesV1SnapshotTestJSON.test_snapshots_list_with_params [4.568968s] ... ok
{1}
tempest.api.volume.test_volumes_snapshots.VolumesV1SnapshotTestJSON.test_volume_from_snapshot [7.653138s] ... ok
{1}
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPatternV2.test_create_ebs_image_and_check_boot [27.208171s] ... ok
{1}
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPatternV2.test_volume_boot_pattern [158.189342s] ... ok
{3}
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPattern.test_create_ebs_image_and_check_boot [29.519468s] ... ok
{3}
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPattern.test_volume_boot_pattern [96.482946s] ... ok