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EPIC UK LONDON

Test Report



Version 1.0

05/05/2017

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Table of contents

[Conclusion](#)

[New Issues Found](#)

[Solution Under Test](#)

[Test Result Details](#)

[Test Environment & Tools](#)

1. Conclusion

The solution under test is validated and verified according to the Test Plan and is **READY** for production deployment.

During the testing phase the following tests were executed:

- Smoke OSTF tests;
- Functional Tempest tests;
- Load Rally tests;
- HA tests;
- Simplified performance testing;
- Functional manual testing.

Full description of the tests that were ran during cloud validation is attached at the end of this test report.

2. New Issues Found

Brief description of the unexpected results, problems, or defects that occurred during the testing. Severity is defined by QA team based on the issue importance understanding.

JIRA link/Issue name	Severity	Summary	Comments
https://bugs.launchpad.net/cinder/+bug/1690263	Major	This issue leads to "Non bootable device"	When using netapp+image cache+copyoffload tool, volume created from cache is broken

3. Solution Under Test

Deployment Overview

Component	Configuration
Sizing and Segregation	23 nodes, 1 Region
OpenStack Release	MOS 8.0, Liberty on Ubuntu 14.04
Controller High Availability	HA, 4 controllers
Host OS	Ubuntu 14.04
Hypervisor type	KVM
Object storage configuration	Cinder LVM over iSCSI for volumes
Cinder configuration	Cinder and NetApp integration
NetApp storage family	Clustered data ONTAP
NetApp storage protocol	NFS
Additional components	Sahara, Murano
Tenant Network Isolation	Contrail
Networking model	Contrail 3.0.2
Keystone configuration	OpenLDAP
Glance configuration	Glance and NetApp integration
Number of Controllers	4 nodes
Number of Compute Nodes	13
Number of Storage Nodes	4
Other Nodes	3 x Contrail; 3 x LMA node; 4 x Barbican

Plugin & Component overview

Plugin/Component name	Version
contrail	contrail-4.0-4.0.0-1.noarch.rpm
glance-nfs	glance_nfs-1.0-1.0.3-1.noarch.rpm
cinder-netapp	cinder_netapp-4.2-4.2.2-1.noarch.rpm
apple-tuning	apple_tuning-1.0-1.0.9-1.noarch.rpm
elasticsearch-kibana	elasticsearch_kibana-0.9-0.9.0-1.noarch.rpm
influxdb-grafana	influxdb_grafana-0.9-0.9.0-1.noarch.rpm
lma-infrastructure-alerting	lma_infrastructure_alerting-0.9-0.9.0-1.noarch.rpm
lma-collector	lma_collector-0.9-0.9.0-1.noarch.rpm
ldap	ldap-1.0-1.0.13-1.noarch.rpm
barbican	barbican-1.0-1.0.7-1.noarch.rpm

Customer-specific extensions and integrations (not covered by Plugins)

Component	Extension
cinder-netapp	static uid and gid for cinder user implemented
ldap	POSIX group support

4. Test Result Details

Overall solution test status

Solution Feature / Requirement Tested	How tested	Status	Comments
Mirantis Openstack deployment	OSTF, Tempest, manual scenarios, Rally, SPT, HA	Accepted	-
cinder_netapp-4.2-4.2.2-1	Rally, Tempest, manual scenarios	Accepted	-
contrail-4.0-4.0.0-1	OSTF, Rally	Accepted	-

Status explanation:

ACCEPTED - critical tests passed successfully, functionality accepted; no unresolved major issues

NOT ACCEPTED - critical tests failed, functionality not accepted; there are unresolved major issues

BLOCKED - can't test because of blocking by other issues/functionality

Exit criteria

Criterion	Status	Comments
All planned functional test cases were executed	Yes	Tempest, Rally
All planned non-functional tests were performed	Yes	Manual testing
NetApp functionality was verified	Yes	Rally, manual testing
Solidfire functionality was verified	No	Solidfire functionality is not available

OSTF Health Check

Test Owner: Max Lvov

Test Date: 05/02/2017

Full list of performed test is attached at the end of the test report.

Passed	50
Failed	1
Skipped	0
TOTAL:	51

The table below summarizes the results of OSTF testing (only skipped and failed tests):

Area	Test ID & Description	Result	Comments
Configuration tests	Check if default credentials for OpenStack cluster have changed	Failed	Issue with OSTF test itself

Functional Tempest tests

Test Owner: Tetiana Korchak

Test Date: 05/03/2017

Full list of performed test is attached at the end of the test report.

Passed	100
Failed	3
Skipped	16
TOTAL:	119

The table below summarizes the results of Tempest testing (only skipped and failed tests):

Area	Test ID & Description	Result	Comments
tempest.scenario.test_network_basic_ops.TestNetworkBasicOps.test_network_basic_ops	Basic network operation test	Failed	https://bugs.launchpad.net/tempest/+bug/1586931
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPattern.test_volume_boot_pattern	Check that volume is bootable, validation is done with different conditions	Failed	https://bugs.launchpad.net/cinder/+bug/1690263
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPatternV2.test_volume_boot_pattern	Check that volume is bootable, validation is done with different conditions	Failed	https://bugs.launchpad.net/cinder/+bug/1690263

HA Tests

Test Owner: Tetiana Korchak

Test Date: 05/08/2017

Full list of performed test is attached at the end of the test report.

Passed	123
Failed	1
Skipped	1
TOTAL:	125

Performance Tests (SPT)

Test Owner: Tetiana Korchak

Test Date: 05/04/2017

Test name	Result
Glance upload	128.91MB/s
Glance download	210.75MB/s
Block Storage Write 4k	8.0MB/s
Block Storage Write 1M	331MB/s
Block Storage Write 1G	704MB/s
Number of nodes (during iperf HW to HW tests)	23
HW to HW (best)	9.9
HW to HW (best) - 10 Threads	9.91
HW to HW (worst)	0.491
HW to HW (worst) - 10 Threads	6.77
VM to VM - VMs on same node - via Private IP - 1 thread	29.5Gbits/sec
VM to VM - VMs on different HW nodes - via Private IP - 1 thread	9.00Gbits/sec
VM to VM - VMs on different HW nodes - via Private IP - MILTI 10 thread	8.31Gbits/sec
VM to VM - via Floating IP and VMs are on different nodes - 1 thread	8.06Gbits/sec
VM to VM - diff nodes, VMs connected to separate networks connected by vRouter - via Private IP - 1 thread	8.92Gbits/sec

Functional manual tests

Test Owner: Tetiana Korchak, Max Lvov

Test Date: 05/08/2017 - 05/10/2017

Manual tests were performed during issue investigation
(<https://bugs.launchpad.net/cinder/+bug/1690263>)

Rally load tests

Test Owner: Tetiana Korchak

Test Date: 05/04/2017

Full list of performed test is attached at the end of the test report.

Passed	104
Failed	1
Skipped	0
TOTAL:	105

The table below summarizes the results of Rally testing (only skipped and failed tests):

Area	Test ID & Description	Result	Comments
NeutronNetworks.create_and_update_ports	Test checks if it's possible to create port and update its information	Failed	Contrail doesn't allow to update fields "device_id" and "name"
HeatStacks.create_stack_and_scale	Test checks create stack and scale functionality	Passed	Failed due to timeout
NeutronNetworks.create_and_delete_subnets	Test checks create and delete subnets functionality	Passed	Fails caused by contrail
NovaServers.boot_server_from_volume_and_live_migrate	Live Migration failed: Migration complete but instance did not change host	Passed	Steps were checked manually and issue was not reproduced

5. Test Environment & Tools

Essential information about test environment, test framework and tools have been used during the testing.

Test Tools

Information about the tools used during the testing.

Tool name	Version	Test Type	Tool Configuration
OSTF	8.0	Smoke	Standard Fuel
SPT	latest	Performance	Acceptance testing to evaluate cloud performance
Tempest	15.0.0	Functional	Set of integration tests to be run against a live OpenStack cluster.
Rally	0.9.0	Load	Framework for performance analysis and benchmarking
HA	-	High availability	OpenStack HA testing during the hardware failovers

EPIC-UK (23 nodes)

- Dashboard
- Nodes
- Networks
- Settings
- Logs
- Health Check

OpenStack Health Check

Select All

Provide credentials

Run Tests

Sanity tests. Duration 30 sec - 2 min	Expected Duration	Actual Duration	Status
Request flavor list	20 s.	1.2	✓
Request image list using Nova	20 s.	0.8	✓
Request instance list	20 s.	0.7	✓
Request absolute limits list	20 s.	0.7	✓
Request snapshot list	20 s.	0.7	✓
Request volume list	20 s.	0.2	✓
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.	0.4	✓
Request user list	20 s.	0.1	✓
Check that required services are running	180 s.	2.2	✓
Check internet connectivity from a compute	100 s.	0.2	✓
Check DNS resolution on compute node	120 s.	0.5	✓
Create and delete Murano environment	10 s.	0.9	✓
Get list of Murano applications categories	10 s.	0.1	✓
Get list of Murano applications packages	10 s.	0.1	✓
Request list of networks	20 s.	0.5	✓
Sahara test for checking CRUD operations on HDP2 templates	80 s.	2.9	✓
Sahara test for checking CRUD operations on Vanilla2 templates	80 s.	2.5	✓

Functional tests. Duration 3 min - 14 min	Expected Duration	Actual Duration	Status
Create instance flavor	30 s.	2.4	✓
Check create, update and delete image actions using Glance v2	70 s.	5.0	✓
Create volume and boot instance from it	350 s.	47.7	✓
Create volume and attach it to instance	350 s.	75.1	✓
Check network connectivity from instance via floating IP	300 s.	43.5	✓
Create keypair	25 s.	1.2	✓
Create security group	25 s.	1.7	✓
Check network parameters	50 s.	0.1	✓
Launch instance	200 s.	27.5	✓
Launch instance with file injection	200 s.	40.9	✓
Launch instance, create snapshot, launch instance from snapshot	300 s.	61.2	✓
Create user and authenticate with it.	80 s.	6.9	✓
HA tests. Duration 30 sec - 8 min	Expected Duration	Actual Duration	Status
Check state of haproxy backends on controllers	10 s.	1.7	✓
Check data replication over mysql	10 s.	3.3	✓
Check if amount of tables in databases is the same on each node	10 s.	3.4	✓
Check galera environment state	10 s.	1.3	✓
Check pacemaker status	10 s.	1.8	✓
RabbitMQ availability	100 s.	10.6	✓
RabbitMQ replication	100 s.	25.5	✓
Platform services functional tests. Duration 3 min - 60 min	Expected Duration	Actual Duration	Status
Typical stack actions: create, delete, show details, etc.	560 s.	34.5	✓
Advanced stack actions: suspend, resume and check	660 s.	75.5	✓

Platform services functional tests. Duration 3 min - 60 min	Expected Duration	Actual Duration	Status
Check stack rollback	310 s.	18.0	✓
Update stack actions: inplace, replace and update whole template	950 s.	92.2	✓
Check that user can deploy Apache service in Murano environment	2140 s.	73.3	✓
Check that user can deploy application in Murano environment	1200 s.	74.0	✓
Check that user can deploy WordPress app in Murano environment	2140 s.	131.5	✓
Sahara test for launching a simple Vanilla2 cluster	1200 s.	333.5	✓
Cloud validation tests. Duration 30 sec - 2 min	Expected Duration	Actual Duration	Status
Check disk space outage on controller and compute nodes	20 s.	4.0	✓
Check log rotation configuration on all nodes	20 s.	4.0	✓
Configuration tests. Duration 30 sec - 2 min	Expected Duration	Actual Duration	Status
Check usage of default credentials on master node	20 s.	36.1	✓
Check if default credentials for OpenStack cluster have changed Default credentials values are used. We kindly recommend that you changed all defaults.	20 s.	0.0	✗
<div> Target component: Configuration Scenario: 1. Check if default credentials for OpenStack cluster have changed. </div>			
Check usage of default credentials for keystone on master node	20 s.	0.1	✓

Rally verification result

Verification UUID	Status	Started at	Finished at	Tests count	Tests duration, sec	success	skipped	expected failures	unexpected success	failures
90dc3213-dab6-45dd-838c-b3083f45e935	failed	2017-05-03 21:19:28	2017-05-03 21:22:13	119	156.755	100	16	0	0	3
Filter tests by status:						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Toggle Header

Toggle Tags

Toggle All Filters

Test name (shown 119) ▾

90dc3213-dab6-45dd-838c-b3083...

tempest.api.compute.security_groups.test_security_group_rules.SecurityGroupRulesTestJSON.test_security_group_rules_create	success 2.626
tempest.api.compute.security_groups.test_security_group_rules.SecurityGroupRulesTestJSON.test_security_group_rules_list	success 4.227
tempest.api.compute.security_groups.test_security_groups.SecurityGroupsTestJSON.test_security_groups_create_list_delete	success 7.577
tempest.api.compute.servers.test_attach_interfaces.AttachInterfacesTestJSON.test_add_remove_fixed_ip	success 12.192
tempest.api.compute.servers.test_create_server.ServersTestJSON.test_list_servers	success 0.111
tempest.api.compute.servers.test_create_server.ServersTestJSON.test_verify_server_details	success 0.001
tempest.api.compute.servers.test_create_server.ServersTestManualDisk.test_list_servers	success 0.103
tempest.api.compute.servers.test_create_server.ServersTestManualDisk.test_verify_server_details	success 0.001
tempest.api.compute.servers.test_server_actions.ServerActionsTestJSON.test_reboot_server_hard	success 6.658
tempest.api.compute.servers.test_server_addresses.ServerAddressesTestJSON.test_list_server_addresses	success 0.106
tempest.api.compute.servers.test_server_addresses.ServerAddressesTestJSON.test_list_server_addresses_by_network	success 0.210
tempest.api.identity.admin.v2.test_services.ServicesTestJSON.test_list_services	success 1.016
tempest.api.identity.admin.v2.test_users.UsersTestJSON.test_create_user	success 0.813
tempest.api.identity.admin.v3.test_credentials.CredentialsTestJSON.test_credentials_create_get_update_delete	success 0.539
tempest.api.identity.admin.v3.test_domains.DefaultDomainTestJSON.test_default_domain_exists	success 0.098
tempest.api.identity.admin.v3.test_domains.DomainsTestJSON.test_create_update_delete_domain	success 0.637
tempest.api.identity.admin.v3.test_endpoints.EndPointsTestJSON.test_update_endpoint	success 0.843
tempest.api.identity.admin.v3.test_groups.GroupsV3TestJSON.test_group_users_add_list_delete	success 2.733
tempest.api.identity.admin.v3.test_policies.PoliciesTestJSON.test_create_update_delete_policy	success 0.501
tempest.api.identity.admin.v3.test_regions.RegionsTestJSON.test_create_region_with_specific_id	success 0.300
tempest.api.identity.admin.v3.test_roles.RolesV3TestJSON.test_role_create_update_show_list	success 0.580
tempest.api.identity.admin.v3.test_services.ServicesTestJSON.test_create_update_get_service	success 0.505
tempest.api.identity.admin.v3.test_trusts.TrustsV3TestJSON.test_get_trusts_all	success 1.880
tempest.api.identity.v2.test_api_discovery.TestApiDiscovery.test_api_media_types	success 0.295
tempest.api.identity.v2.test_api_discovery.TestApiDiscovery.test_api_version_resources	success 0.189
tempest.api.identity.v2.test_api_discovery.TestApiDiscovery.test_api_version_statuses	success 0.089
tempest.api.identity.v3.test_api_discovery.TestApiDiscovery.test_api_media_types	success 0.086
tempest.api.identity.v3.test_api_discovery.TestApiDiscovery.test_api_version_resources	success 0.092
tempest.api.identity.v3.test_api_discovery.TestApiDiscovery.test_api_version_statuses	success 0.118
tempest.api.image.v2.test_images.BasicOperationsImagesTest.test_delete_image	success 2.735
tempest.api.image.v2.test_images.BasicOperationsImagesTest.test_register_upload_get_image_file	success 1.758
tempest.api.image.v2.test_images.BasicOperationsImagesTest.test_update_image	success 1.828
tempest.api.network.test_extensions.ExtensionsTestJSON.test_list_show_extensions	success 0.793
tempest.api.network.test_floating_ips.FloatingIPTestJSON.test_create_floating_ip_specifying_a_fixed_ip_address	success 2.417

Go Up

Rally verification result

Verification UUID	Status	Started at	Finished at	Tests count	Tests duration, sec	success	skipped	expected failures	unexpected success	failures
90dc3213-dab6-45dd-838c-b3083f45e935	failed	2017-05-03 21:19:28	2017-05-03 21:22:13	119	156.755	100	16	0	0	3
Filter tests by status:						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Toggle Header

Toggle Tags

Toggle All Filters

Test name (shown 119) ▼

90dc3213-dab6-45dd-838c-b3083...

tempest.api.network.test_networks.NetworksIpV6Test.test_list_subnets	success 0.350
tempest.api.network.test_networks.NetworksIpV6Test.test_show_network	success 0.392
tempest.api.network.test_networks.NetworksIpV6Test.test_show_subnet	success 0.140
tempest.api.network.test_networks.NetworksTest.test_create_update_delete_network_subnet	success 5.493
tempest.api.network.test_networks.NetworksTest.test_external_network_visibility	success 0.423
tempest.api.network.test_networks.NetworksTest.test_list_networks	success 0.378
tempest.api.network.test_networks.NetworksTest.test_list_subnets	success 0.230
tempest.api.network.test_networks.NetworksTest.test_show_network	success 0.323
tempest.api.network.test_networks.NetworksTest.test_show_subnet	success 0.548
tempest.api.network.test_ports.PortsIpV6TestJSON.test_create_port_in_allowed_allocation_pools	success 10.670
tempest.api.network.test_ports.PortsIpV6TestJSON.test_create_port_with_no_securitygroups	success 5.072
tempest.api.network.test_ports.PortsIpV6TestJSON.test_create_update_delete_port	success 2.530
tempest.api.network.test_ports.PortsIpV6TestJSON.test_list_ports	success 0.242
tempest.api.network.test_ports.PortsIpV6TestJSON.test_show_port	success 0.071
tempest.api.network.test_ports.PortsTestJSON.test_create_port_in_allowed_allocation_pools	success 6.423
tempest.api.network.test_ports.PortsTestJSON.test_create_port_with_no_securitygroups	success 6.344
tempest.api.network.test_ports.PortsTestJSON.test_create_update_delete_port	success 1.802
tempest.api.network.test_ports.PortsTestJSON.test_list_ports	success 0.248
tempest.api.network.test_ports.PortsTestJSON.test_show_port	success 0.098
tempest.api.network.test_routers.RoutersIpV6Test.test_add_multiple_router_interfaces	success 15.642
tempest.api.network.test_routers.RoutersIpV6Test.test_add_remove_router_interface_with_port_id	success 5.275
tempest.api.network.test_routers.RoutersIpV6Test.test_add_remove_router_interface_with_subnet_id	success 4.558
tempest.api.network.test_routers.RoutersIpV6Test.test_create_show_list_update_delete_router	success 2.481
tempest.api.network.test_routers.RoutersTest.test_add_multiple_router_interfaces	success 17.829
tempest.api.network.test_routers.RoutersTest.test_add_remove_router_interface_with_port_id	success 6.084
tempest.api.network.test_routers.RoutersTest.test_add_remove_router_interface_with_subnet_id	success 4.919
tempest.api.network.test_routers.RoutersTest.test_create_show_list_update_delete_router	success 1.086
tempest.api.network.test_security_groups.SecGroupIPV6Test.test_create_list_update_show_delete_security_group	success 5.693
tempest.api.network.test_security_groups.SecGroupIPV6Test.test_create_show_delete_security_group_rule	success 6.532
tempest.api.network.test_security_groups.SecGroupIPV6Test.test_list_security_groups	success 1.079
tempest.api.network.test_security_groups.SecGroupTest.test_create_list_update_show_delete_security_group	success 5.243
tempest.api.network.test_security_groups.SecGroupTest.test_create_show_delete_security_group_rule	success 5.554
tempest.api.network.test_security_groups.SecGroupTest.test_list_security_groups	success 0.718
tempest.api.network.test_subnetpools_extensions.SubnetPoolsTestJSON.test_create_list_show_update_delete_subnetpools	skip
tempest.api.network.test_versions.NetworksApiDiscovery.test_api_version_resources	success 0.033

Go Up

Rally verification result

Verification UUID	Status	Started at	Finished at	Tests count	Tests duration, sec	success	skipped	expected failures	unexpected success	failures
90dc3213-dab6-45dd-838c-b3083f45e935	failed	2017-05-03 21:19:28	2017-05-03 21:22:13	119	156.755	100	16	0	0	3
Filter tests by status:						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Toggle Header

Toggle Tags

Toggle All Filters

Test name (shown 119) ▼

90dc3213-dab6-45dd-838c-b3083...

tempest.api.object_storage.test_object_services.ObjectTest.test_get_object	skip
tempest.api.object_storage.test_object_services.ObjectTest.test_list_object_metadata	skip
tempest.api.object_storage.test_object_services.ObjectTest.test_update_object_metadata	skip
tempest.api.orchestration.stacks.test_resource_types.ResourceTypesTest.test_resource_type_list	success 0.394
tempest.api.orchestration.stacks.test_resource_types.ResourceTypesTest.test_resource_type_show	success 9.183
tempest.api.orchestration.stacks.test_resource_types.ResourceTypesTest.test_resource_type_template	success 0.061
tempest.api.orchestration.stacks.test_soft_conf.TestSoftwareConfig.test_get_deployment_list	success 1.026
tempest.api.orchestration.stacks.test_soft_conf.TestSoftwareConfig.test_get_deployment_metadata	success 0.634
tempest.api.orchestration.stacks.test_soft_conf.TestSoftwareConfig.test_get_software_config	success 0.657
tempest.api.orchestration.stacks.test_soft_conf.TestSoftwareConfig.test_software_deployment_create_validate	success 0.645
tempest.api.orchestration.stacks.test_soft_conf.TestSoftwareConfig.test_software_deployment_update_no_metadata_change	success 0.867
tempest.api.orchestration.stacks.test_soft_conf.TestSoftwareConfig.test_software_deployment_update_with_metadata_change	success 0.841
tempest.api.orchestration.stacks.test_stacks.StacksTestJSON.test_stack_crud_no_resources	success 4.250
tempest.api.orchestration.stacks.test_stacks.StacksTestJSON.test_stack_list_responds	success 0.065
tempest.api.volume.test_volumes_actions.VolumesV1ActionsTest.test_attach_detach_volume_to_instance	success 11.518
tempest.api.volume.test_volumes_actions.VolumesV2ActionsTest.test_attach_detach_volume_to_instance	success 10.482
tempest.api.volume.test_volumes_get.VolumesV1GetTest.test_volume_create_get_update_delete	success 9.515
tempest.api.volume.test_volumes_get.VolumesV1GetTest.test_volume_create_get_update_delete_from_image	success 16.220
tempest.api.volume.test_volumes_get.VolumesV2GetTest.test_volume_create_get_update_delete	success 8.726
tempest.api.volume.test_volumes_get.VolumesV2GetTest.test_volume_create_get_update_delete_from_image	success 16.511
tempest.api.volume.test_volumes_list.VolumesV1ListTestJSON.test_volume_list	success 0.088
tempest.api.volume.test_volumes_list.VolumesV2ListTestJSON.test_volume_list	success 0.080
tempest.scenario.test_network_basic_ops.TestNetworkBasicOps.test_network_basic_ops	fail 153.247
tempest.scenario.test_server_basic_ops.TestServerBasicOps.test_server_basic_ops	success 30.387
tempest.scenario.test_server_multinode.TestServerMultinode.test_schedule_to_all_nodes	skip
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPattern.test_volume_boot_pattern	fail 54.934
tempest.scenario.test_volume_boot_pattern.TestVolumeBootPatternV2.test_volume_boot_pattern	fail 56.745

Go Up

HA test results

Test scenario	Result
OpenStack HA testing during the hardware failovers	All tests passed
Test scenario I (Graceful shutdown): <ol style="list-style-type: none"> Gracefully shutdown one of the controller nodes. (Controller 1) <ol style="list-style-type: none"> (target controller): poweroff Boot 5 VMs and verify that they all are up and running. <ol style="list-style-type: none"> (other controller): nova boot --flavor 1 --image c3e392bb-1575-43bf-85fe-5ab9bb896caa --availability-zone nova --security-groups 3c1e8c5c-a84a-47ab-8c50-ccbff6fff2fb --nic net-id=22932033-e89e-477e-972f-4948c28672f9 --min-count 5 ha-test Turn on controller and wait until all services are up (Time limit 30 min) <ol style="list-style-type: none"> (IPMI): power on (other controller): pcs status Boot 5 VMs and verify that they all are up and running. <ol style="list-style-type: none"> (other controller): nova boot --flavor 1 --image TestVM --min-count 5 --nic net-id=<net04 ID> ha-test Return the cluster to initial state. <ol style="list-style-type: none"> (other controller): for uuid in `nova list grep ha-test awk '{print \$2}'`; do nova delete \$uuid; done 	uklon5-osc01cntl04 shutdown -h now uklon5-osc01cntl02 nova boot all controllers are online uklon5-osc01cntl03 nova boot uklon5-osc01cntl01 successfully deleted
Test scenario II (Hard power off): <ol style="list-style-type: none"> Hard power off one of the controller nodes. (Controller 2) <ol style="list-style-type: none"> (IPMI): power off Boot 5 VMs and verify that they all are up and running. <ol style="list-style-type: none"> (other controller): nova boot --flavor 1 --image TestVM --min-count 5 --nic net-id=<net04 ID> ha-test Turn on controller and wait until all services are up, but not longer than 30 min. <ol style="list-style-type: none"> (IPMI): power on (other controller): pcs status Boot 5 VMs and verify that they all are up and running. <ol style="list-style-type: none"> (other controller): nova boot --flavor 1 --image TestVM --min-count 5 --nic net-id=<net04 ID> ha-test Return the cluster to initial state. <ol style="list-style-type: none"> (other controller): for uuid in `nova list grep ha-test awk '{print \$2}'`; do nova delete \$uuid; done 	uklon5-osc01cntl03 uklon5-osc01cntl01 nova boot all controllers are online uklon5-osc01cntl04 nova boot uklon5-osc01cntl02 successfully deleted

<p>Test scenario III (Network cut):</p> <ol style="list-style-type: none"> 1. Cut network communication on one of the controller nodes. (Controller 3) <ol style="list-style-type: none"> a. (IPMI console): ip link set down <NIC> #For every physical NIC 2. Boot 5 VMs and verify that they all are up and running. <ol style="list-style-type: none"> a. (other controller): nova boot --flavor 1 --image TestVM --min-count 5 --nic net-id=<net04 ID> ha-test 3. Reboot controller <ol style="list-style-type: none"> a. (IPMI): power reset for i in {1..10}; do crm status head; sleep 5; done 4. Boot 5 VMs and verify that they all are up and running. <ol style="list-style-type: none"> a. (other controller): nova boot --flavor 1 --image TestVM --min-count 5 --nic net-id=<net04 ID> ha-test 5. Return the cluster to initial state. <ol style="list-style-type: none"> a. (other controller): for uuid in `nova list grep ha-test awk '{print \$2}'`; do nova delete \$uuid; done 	<pre>uklon5-osc01cntl02 ip l grep "en[os]" cut -d":" -f2 xargs -l{} ip link set down {} uklon5-osc01cntl04 nova boot uklon5-osc01cntl03 nova boot uklon5-osc01cntl02 successfully deleted</pre>
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Task overview

Scenario	Load duration (s)	Full duration (s)	Iterations	Runner	Errors 	Hooks	Success (SLA)
NeutronNetworks.create_and_update_ports	13.300	71.342	40	constant	40	0	✓
NovaAggregates.create_aggregate_add_host_and_boot_server	48.074	120.007	40	constant	40	0	✗
HeatStacks.create_stack_and_scale	139.165	179.370	40	constant	16	0	✓
NeutronNetworks.create_and_delete_subnets	19.671	80.291	40	constant	11	0	✓
NovaServers.boot_server_from_volume_and_live_migrate	306.885	352.208	40	constant	1	0	✓
KeystoneBasic.get_entities	26.748	44.207	40	constant	0	0	✓
CinderVolumeTypes.create_and_delete_volume_type	4.767	23.431	40	constant	0	0	✓
CinderVolumeTypes.create_and_list_encryption_type	19.807	43.658	40	constant	0	0	✓
CinderVolumes.create_and_accept_transfer	31.296	63.806	40	constant	0	0	✓
CinderVolumes.create_and_attach_volume	148.154	192.718	40	constant	0	0	✓
CinderVolumes.create_and_delete_snapshot	39.556	81.268	40	constant	0	0	✓
CinderVolumes.create_and_delete_volume	42.665	65.958	40	constant	0	0	✓
CinderVolumes.create_and_extend_volume	63.223	87.232	40	constant	0	0	✓
CinderVolumes.create_and_update_volume	26.518	61.081	40	constant	0	0	✓
CinderVolumes.create_and_upload_volume_to_image	495.218	525.411	40	constant	0	0	✓
CinderVolumes.create_from_volume_and_delete_volume	44.257	89.679	40	constant	0	0	✓
CinderVolumes.create_nested_snapshots_and_attach_volume	647.564	764.695	40	constant	0	0	✓
CinderVolumes.create_volume_and_clone	124.663	203.157	40	constant	0	0	✓
CinderVolumes.create_volume_and_update_readonly_flag	25.890	61.724	40	constant	0	0	✓
CinderVolumes.create_volume_from_snapshot	80.522	128.332	40	constant	0	0	✓
CinderVolumes.list_transfers	4.189	26.228	40	constant	0	0	✓
CinderVolumes.list_types	4.122	26.012	40	constant	0	0	✓
CinderVolumes.modify_volume_metadata	90.520	135.154	40	constant	0	0	✓
GlanceImages.create_and_delete_image	41.341	59.861	40	constant	0	0	✓
GlanceImages.create_image_and_boot_instances	96.275	154.517	40	constant	0	0	✓
GlanceImages.list_images	7.022	103.229	40	constant	0	0	✓
HeatStacks.create_and_delete_stack	165.793	186.884	40	constant	0	0	✓
HeatStacks.create_and_delete_stack-2	174.809	193.970	40	constant	0	0	✓
HeatStacks.create_and_delete_stack-3	224.109	242.515	40	constant	0	0	✓
HeatStacks.create_check_delete_stack	55.947	76.613	40	constant	0	0	✓
HeatStacks.create_snapshot_restore_delete_stack	83.614	106.018	40	constant	0	0	✓
HeatStacks.create_stack_and_list_output_via_API	54.863	95.595	40	constant	0	0	✓
Authenticate.keystone	1.526	17.817	40	constant	0	0	✓
HeatStacks.create_stack_and_show_output_via_API	57.490	91.644	40	constant	0	0	✓
HeatStacks.create_suspend_resume_delete_stack	78.613	100.596	40	constant	0	0	✓
HeatStacks.create_update_delete_stack	79.172	108.445	40	constant	0	0	✓
HeatStacks.create_update_delete_stack-2	114.246	145.146	40	constant	0	0	✓
HeatStacks.create_update_delete_stack-3	145.027	178.117	40	constant	0	0	✓
HeatStacks.create_update_delete_stack-4	117.171	149.898	40	constant	0	0	✓
HeatStacks.create_update_delete_stack-5	84.052	122.456	40	constant	0	0	✓
KeystoneBasic.add_and_remove_user_role	11.532	30.361	40	constant	0	0	✓
KeystoneBasic.authenticate_user_and_validate_token	9.471	19.553	40	constant	0	0	✓
KeystoneBasic.create_add_and_list_user_roles	9.007	28.107	40	constant	0	0	✓
KeystoneBasic.create_and_delete_ec2credential	6.966	39.060	40	constant	0	0	✓
KeystoneBasic.create_and_delete_role	9.900	20.519	40	constant	0	0	✓

Scenario	Load duration (s)	Full duration (s)	Iterations	Runner	Errors 	Hooks	Success (SLA)
KeystoneBasic.create_and_delete_service	7.692	17.902	40	constant	0	0	✓
KeystoneBasic.create_delete_user	13.073	23.870	40	constant	0	0	✓
KeystoneBasic.create_tenant_with_users	52.511	66.232	40	constant	0	0	✓
KeystoneBasic.create_update_and_delete_tenant	14.416	24.782	40	constant	0	0	✓
KeystoneBasic.create_user_set_enabled_and_delete	20.694	30.874	40	constant	0	0	✓
KeystoneBasic.create_user_set_enabled_and_delete-2	17.503	28.904	40	constant	0	0	✓
KeystoneBasic.create_user_update_password	15.651	26.343	40	constant	0	0	✓
Authenticate.validate_cinder	4.347	18.171	40	constant	0	0	✓
NeutronNetworks.create_and_delete_floating_ips	25.019	83.319	40	constant	0	0	✓
NeutronNetworks.create_and_delete_networks	17.018	67.645	40	constant	0	0	✓
NeutronNetworks.create_and_delete_ports	85.727	151.524	40	constant	0	0	✓
NeutronNetworks.create_and_delete_routers	46.184	112.820	40	constant	0	0	✓
Authenticate.validate_glance	5.739	20.025	40	constant	0	0	✓
NeutronNetworks.create_and_update_networks	10.841	51.756	40	constant	0	0	✓
Authenticate.validate_heat	3.585	17.630	40	constant	0	0	✓
NeutronNetworks.create_and_update_routers	36.197	120.239	40	constant	0	0	✓
NeutronNetworks.create_and_update_subnets	22.612	91.249	40	constant	0	0	✓
NeutronNetworks.list_agents	6.619	23.543	40	constant	0	0	✓
NeutronSecurityGroup.create_and_delete_security_groups	11.427	49.251	40	constant	0	0	✓
NeutronSecurityGroup.create_and_update_security_groups	10.737	50.019	40	constant	0	0	✓
NovaAgents.list_agents	6.811	14.173	40	constant	0	0	✓
NovaAggregates.create_aggregate_add_and_remove_host	11.427	37.027	40	constant	0	0	✓
Authenticate.validate_neutron	5.437	19.522	40	constant	0	0	✓
NovaAggregates.create_and_delete_aggregate	5.973	23.145	40	constant	0	0	✓
NovaAggregates.create_and_update_aggregate	9.637	39.101	40	constant	0	0	✓
NovaAvailabilityZones.list_availability_zones	8.237	15.654	40	constant	0	0	✓
NovaFlavors.create_and_delete_flavor	7.474	28.758	40	constant	0	0	✓
NovaFlavors.create_flavor_and_add_tenant_access	7.519	32.370	40	constant	0	0	✓
NovaFlavors.create_flavor_and_set_keys	8.373	34.290	40	constant	0	0	✓
NovaHosts.list_and_get_hosts	16.644	36.859	40	constant	0	0	✓
NovaHypervisors.list_and_get_uptime_hypervisors	20.820	38.556	40	constant	0	0	✓
NovaHypervisors.list_and_search_hypervisors	14.475	32.380	40	constant	0	0	✓
NovaHypervisors.statistics_hypervisors	7.355	24.777	40	constant	0	0	✓
NovalImages.list_images	19.330	80.265	40	constant	0	0	✓
NovaKeypair.boot_and_delete_server_with_keypair	71.246	124.914	40	constant	0	0	✓
NovaKeypair.create_and_delete_keypair	9.560	60.056	40	constant	0	0	✓
NovaSecGroup.boot_and_delete_server_with_secgroups	245.314	319.025	40	constant	0	0	✓
NovaSecGroup.create_and_update_secgroups	43.509	109.182	40	constant	0	0	✓
NovaServerGroups.create_and_list_server_groups	9.629	67.928	40	constant	0	0	✓
NovaServers.boot_and_bounce_server	518.554	573.966	40	constant	0	0	✓
NovaServers.boot_and_delete_multiple_servers	76.616	126.986	40	constant	0	0	✓
NovaServers.boot_and_get_console_output	47.667	105.827	40	constant	0	0	✓
NovaServers.boot_and_live_migrate_server	134.014	183.470	40	constant	0	0	✓
NovaServers.boot_and_migrate_server	161.804	209.127	40	constant	0	0	✓
NovaServers.boot_and_rebuild_server	142.586	191.692	40	constant	0	0	✓
NovaServers.boot_and_update_server	44.129	100.729	40	constant	0	0	✓
NovaServers.boot_lock_unlock_and_delete	65.520	104.127	40	constant	0	0	✓
NovaServers.boot_server_associate_and_dissociate_floating_ip	106.251	188.520	40	constant	0	0	✓

Scenario	Load duration (s)	Full duration (s)	Iterations	Runner	Errors ▼	Hooks	Success (SLA)
NovaServers.boot_server_attach_created_volume_and_resize	256.710	297.192	40	constant	0	0	✓
NovaServers.boot_server_from_volume_and_delete	246.323	308.048	40	constant	0	0	✓
Authenticate.validate_nova	4.167	17.241	40	constant	0	0	✓
NovaServers.boot_server_from_volume_and_resize	413.407	471.373	40	constant	0	0	✓
NovaServers.boot_server_from_volume_snapshot	261.821	351.610	40	constant	0	0	✓
NovaServers.list_servers	11.392	147.527	40	constant	0	0	✓
NovaServers.pause_and_unpause_server	111.852	171.767	40	constant	0	0	✓
NovaServers.resize_shutoff_server	225.700	279.371	40	constant	0	0	✓
NovaServers.shelve_and_unshelve_server	270.091	329.032	40	constant	0	0	✓
NovaServers.snapshot_server	190.902	236.038	40	constant	0	0	✓
NovaServers.suspend_and_resume_server	132.880	188.918	40	constant	0	0	✓
NovaServices.list_services	7.437	16.737	40	constant	0	0	✓

Task overview

Input file

▼ NovaAggregates

create_aggregate_add_host_and_boot_s...

Task overview

Scenario ▲	Load duration (s)	Full duration (s)	Iterations	Runner	Errors	Hooks	Success (SLA)
NovaAggregates.create_aggregate_add_host_and_boot_server	55.915	120.160	40	constant	0	0	✓

Simplified Performance Testing Results

128.91MB/s <-- Glance upload
210.75MB/s <-- Glance download
8.0MB/s <-- Block Storage Write 4k
331MB/s <-- Block Storage Write 1M
704MB/s <-- Block Storage Write 1G
23 <-- Number of nodes (during iperf HW to HW tests)
9.9 <-- HW to HW (best)
9.91 <-- HW to HW (best) - 10 Threads
0.491 <-- HW to HW (worst)
6.77 <-- HW to HW (worst) - 10 Threads
29.5Gbits/sec <-- VM to VM - VMs on same node - via Private IP - 1 thread
9.00Gbits/sec <-- VM to VM - VMs on different HW nodes - via Private IP - 1 thread
8.31Gbits/sec <-- VM to VM - VMs on different HW nodes - via Private IP - MILTI 10 thread
8.06Gbits/sec <-- VM to VM - via Floating IP and VMs are on different nodes - 1 thread
8.92Gbits/sec <-- VM to VM - diff nodes, VMs connected to separate networks connected by
vRouter - via Private IP - 1 thread

128.91 210.75 8.0 331.0 704.0 23 9.9 9.91 0.491 6.77 29.5 9.0 8.31 8.06 8.92