

Dell Red Hat OpenStack Cloud Solution Overcloud Validation Guide



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-  A **Note** indicates important information that helps you make better use of your system.
-  A **Caution** indicates potential damage to hardware or loss of data if instructions are not followed.
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Overview

This guide provides instructions for configuring and running the Tempest test suite to validate the Dell Red Hat OpenStack Cloud Solution.

Intended Audience

This guide is written for OpenStack administrators or deployment engineers who are responsible for installation and ongoing operation of OpenStack clusters. It assumes that the reader is familiar with:

- OpenStack
- Red Hat Enterprise Linux (RHEL)
- Red Hat OpenStack Platform (RHOSP) documentation
- Networking and system administration

Tempest Testing Configuration

To configure Tempest on the Director Node:

1. Create OpenStack networks for use by Tempest by:
 - a. SSH into the Director Node as the user defined during the Director installation process.
 - b. Execute the *Creating the Networks* section of Appendix C in the *Dell Red Hat Cloud Solutions Deployment Guide*.
 - c. Add an additional route from the Director Node to the public network, created above in Appendix C, so tempest can communicate with instances created by tests.

```
$ sudo ip route add [public_network_ip]/24 dev [interface_name]
```

For example:

```
$ sudo ip route add 192.168.191.0/24 dev eth4
```

2. Check that the heat_stack_owner role exists in your Overcloud:

```
$ source ~/overcloudrc
$ openstack role list
```

ID	Name
6226a517204846d1a26d15aae1af208f	swiftoperator
7c7eb03955e545dd86bbfeb73692738b	heat_stack_owner

If the role does not exist, create it:

```
$ keystone role-create --name heat_stack_owner
```

3. Set up a tempest directory in your stack user's home directory and install a local version of the Tempest suite:

```
$ mkdir ~/tempest
$ cd ~/tempest
$ /usr/share/openstack-tempest-liberty/tools/configure-tempest-directory
```

This creates a local version of the Tempest tool set. After the Overcloud creation process completed, the director created a file named `~/tempest-deployer-input.conf`. This file provides a set of Tempest configuration options relevant to your Overcloud.

4. Again SSH into the Director Node. Change directory to the tempest install directory:

```
$ cd ~/tempest
```

5. Configure the Tempest instance for the environment.

- a. The following Tempest configuration script (`~/tempest/tools/config_tempest.py`) can be used to generate the required *tempest.conf* file.



Note: Be sure to use the Virtual IP address (VIP) of the Keystone endpoint. The syntax below overrides the command syntax from the Red Hat documentation.

```
$ tools/config_tempest.py --create --deployer-input ~/tempest-deployer-
input.conf service_available.swift False object-storage-feature-
enabled.discoverability False identity.uri [keystone_endpoint] identity-
```

```
feature-enabled.api_v3 False identity.admin_username [os_admin_username]
identity.admin_password [os_admin_password] identity.admin_tenant_name
[admin_tenant_name]
```

For example:

```
$ tools/config_tempest.py --create --deployer-input ~/tempest-deployer-
input.conf service_available.swift False object-storage-feature-
enabled.discoverability False identity.uri http://10.148.44.200:5000/
v2.0 identity-feature-enabled.api_v3 False identity.admin_username admin
identity.admin_password mypassword identity.admin_tenant_name admin
```

6. Initialize the Tempest cleanup utility by executing the following command.



Note: Prior to running Tempest you must initialize the cleanup utility, which will capture the existing state of your OpenStack deployment prior to running any tests. This will allow the cleanup utility to restore your deployment to where it was prior to running Tempest, should any failed tests leave data behind.

```
$ cd ~/tempest
$ tempest cleanup --init-saved-state
```

This will create a file named *~/tempest/saved_state.json*. You can edit the file and remove the *admin*, *demo*, and *alt_demo* tenants and users, as the cleanup utility has logic that handles these particular users and tenants.

Running Tempest Tests and Post-run Cleanup

To run Tempest tests:

1. To run the full suite of Tempest tests use following command:

```
$ tools/run-tests.sh --concurrency=4
```



Note: The full Tempest test suite might take hours. Alternatively, run part of the tests using the `.*smoke` option.

```
$ tools/run-tests.sh '.*smoke'
```

Each test runs against the Overcloud, and the subsequent output displays each test and its result. You can see more information about each test in the `tempest.log` file generated in the same directory. For example, the output might show the following failed test:

```
{2} tempest.api.compute.servers.test_servers.  
ServersTestJSON.test_create_specify_keypair [18.305114s] ... FAILED
```

2. Once the Tempest run is complete you can use the cleanup utility to delete any objects left over by Tempest.

- a. Execute the cleanup utility in *dry-run* mode, which creates a file named *dry_run.json*. This file contains all of the objects that will be deleted when you run the cleanup utility in *standard mode*.

```
$ cd ~/tempest  
$ tempest cleanup --dry-run
```

- b. Review *dry_run.json* and be sure that you intend to delete all the objects listed prior to running the tool in *standard mode*.
- c. Execute the cleanup utility in *standard mode* to permanently delete the objects contained in *dry_run.json*:

```
$ cd ~/tempest  
$ tempest cleanup
```

At this point your deployment should have deleted any objects left behind by Tempest.



Note: Full documentation for the cleanup utility can be found at <http://docs.openstack.org/developer/tempest/cleanup.html>.

Please refer to `/usr/share/openstack-tempest-liberty/README.rpm` on your Director Node for additional information about the Tempest installation package.

In addition to this document complete documentation for Tempest can be found at <http://docs.openstack.org/developer/tempest/>.

Tempest source code and additional technical information can be found on Github at <https://github.com/redhat-openstack/tempest>.

References

Additional information can be obtained at <http://www.dell.com/en-us/work/learn/openstack-cloud> or by e-mailing openstack@dell.com.

If you need additional services or implementation help, please contact your Dell sales representative.

To Learn More

For more information on the Dell Red Hat® OpenStack Cloud Solution visit <http://www.dell.com/learn/us/en/04/solutions/red-hat-openstack>.

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