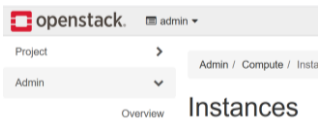
OpenStack Lab 6

Manage instances

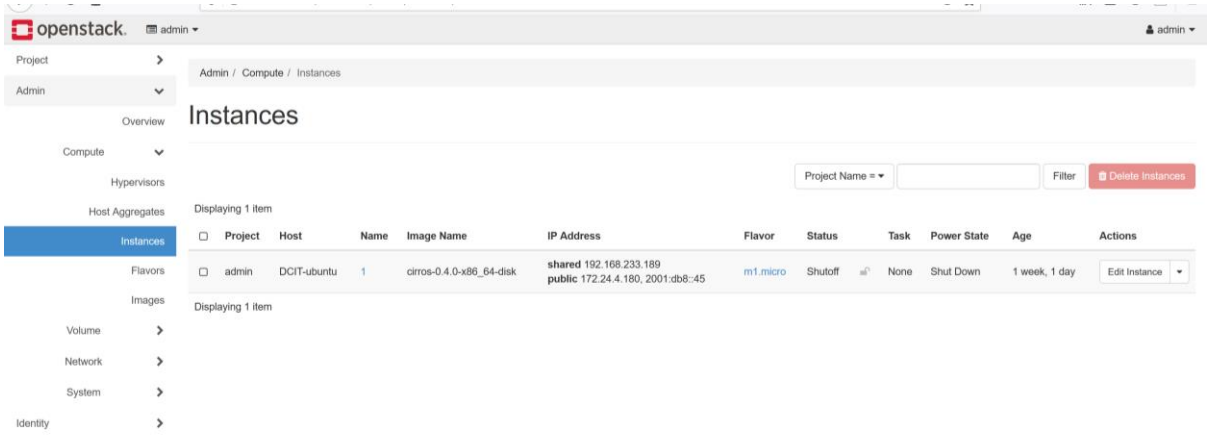
As an administrative user, you can manage instances for users in various projects. You can view, terminate, edit, perform a soft or hard reboot, create a snapshot from, and migrate instances. You can also view the logs for instances or launch a VNC console for an instance.

Create instance snapshots

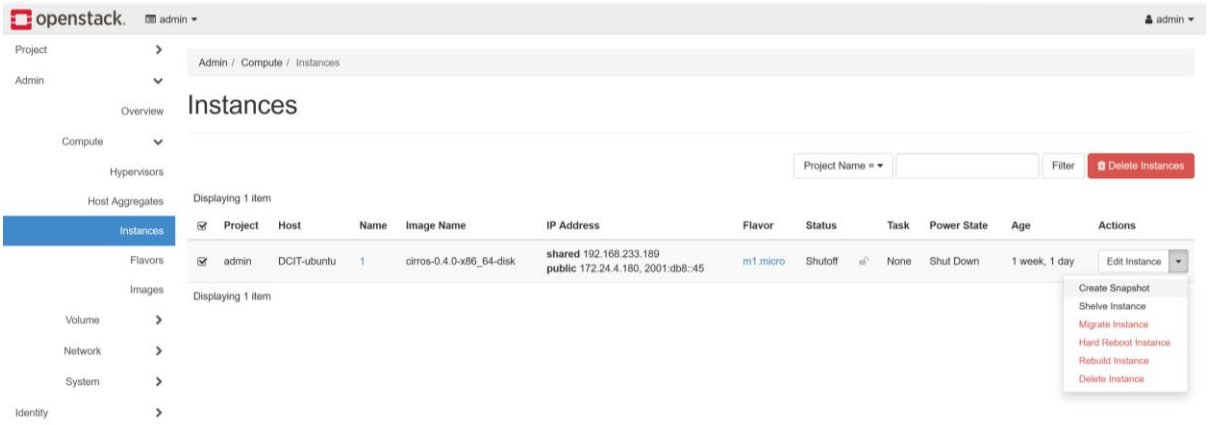
1. Log in to the Dashboard and select the admin project from the drop-down list.



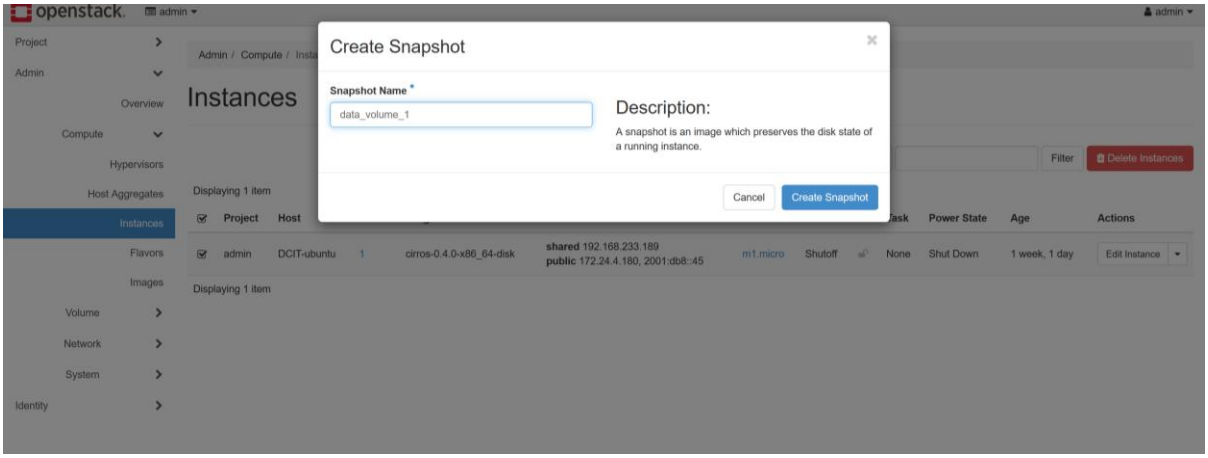
2. On the Admin tab, open the Compute tab and click the Instances category.



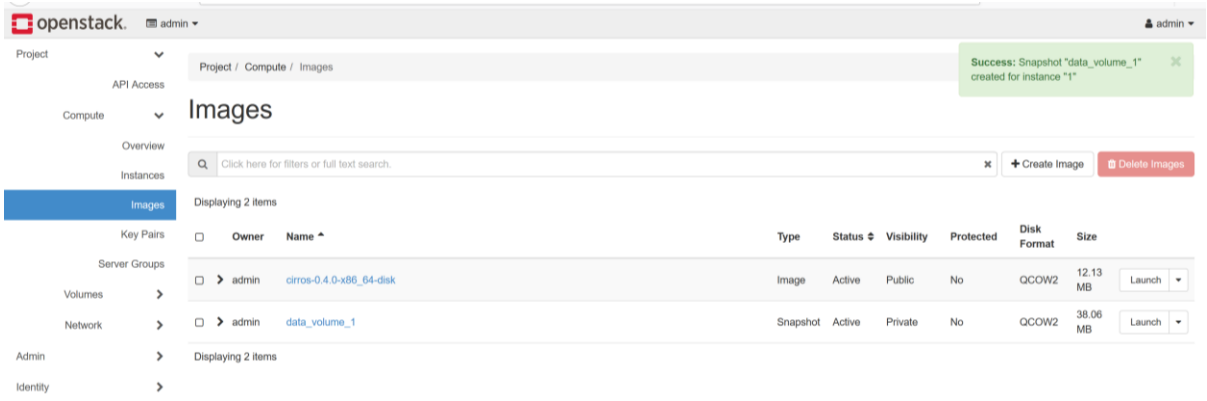
3. Select an instance to create a snapshot from it. From the Actions drop-down list, select Create Snapshot.



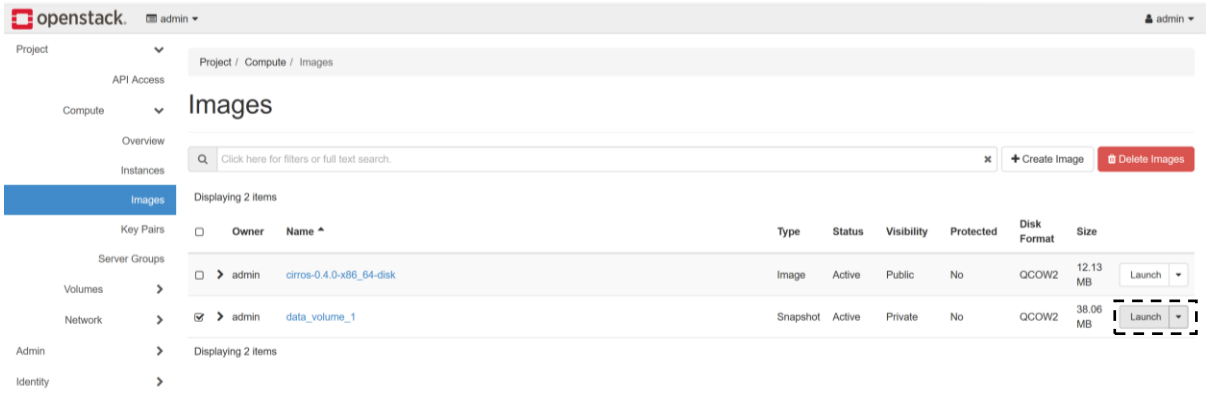
4. In the Create Snapshot window, enter a name for the snapshot.



5. Click Create Snapshot. The Dashboard shows the instance snapshot in the Images category.

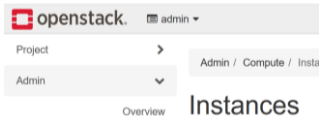


6. To launch an instance from the snapshot, select the snapshot and click Launch.

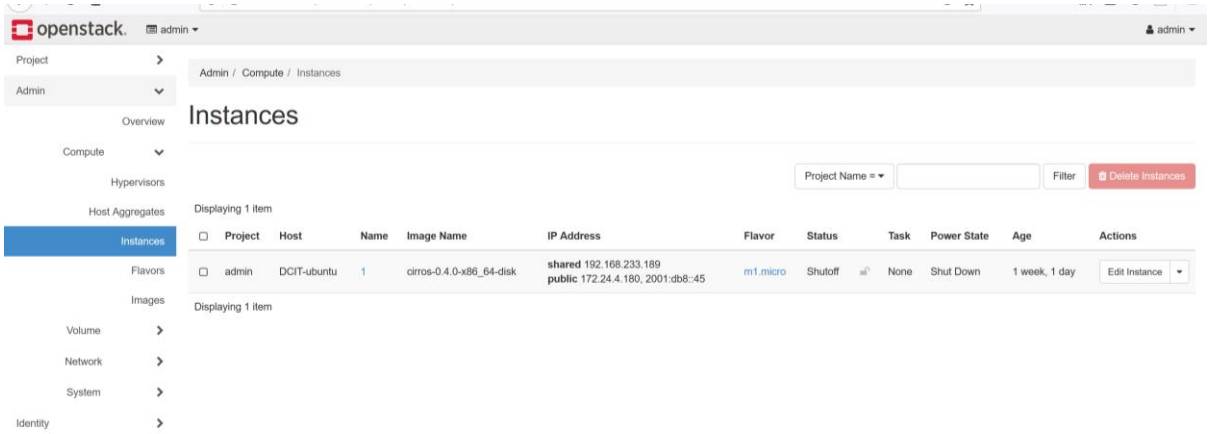


Control the state of an instance

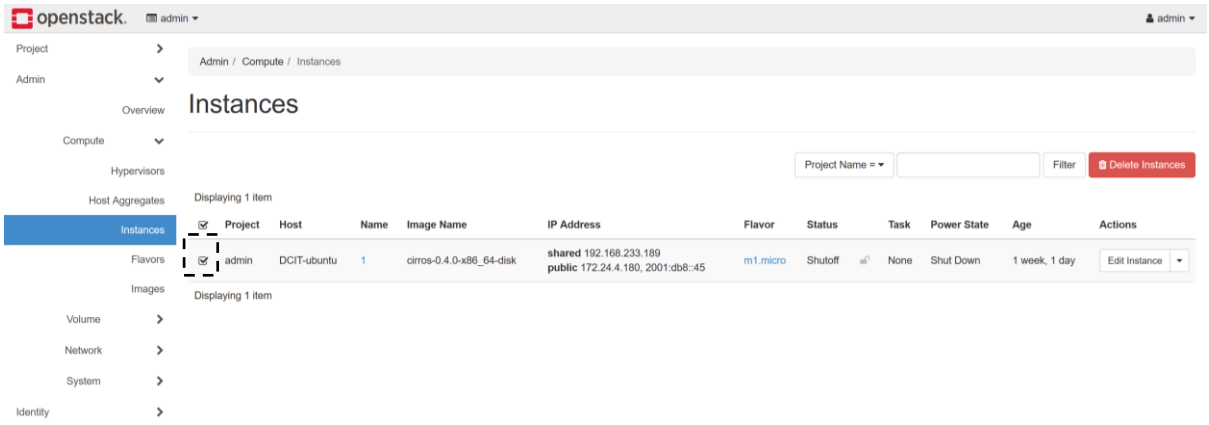
1. Log in to the Dashboard and select the admin project from the drop-down list.



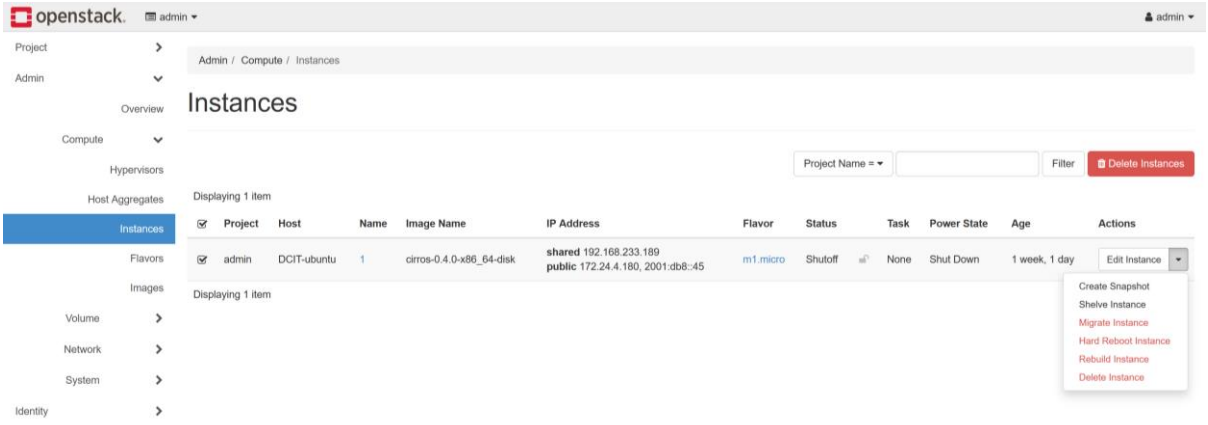
2. On the Admin tab, open the Compute tab and click the Instances category.



3. Select the instance for which you want to change the state.



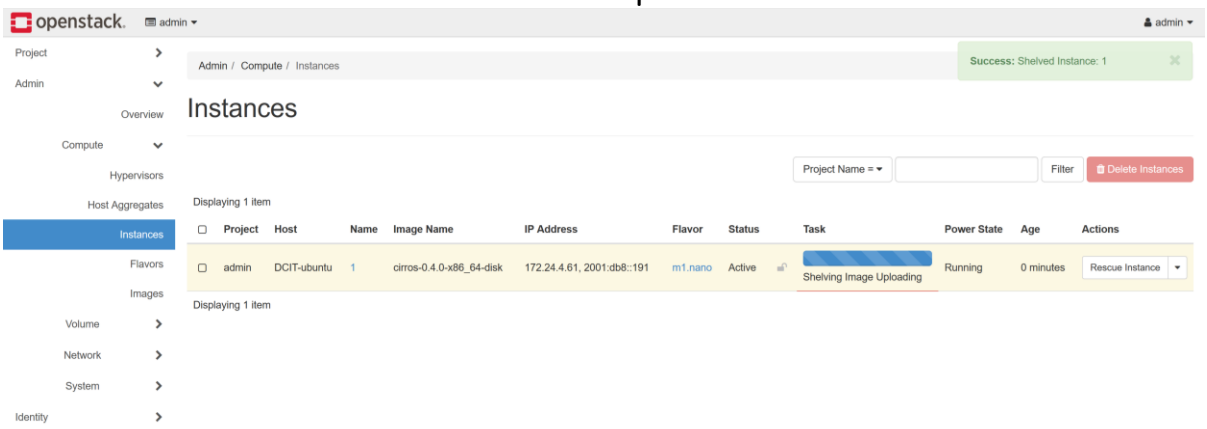
4. From the drop-down list in the Actions column, select the state.

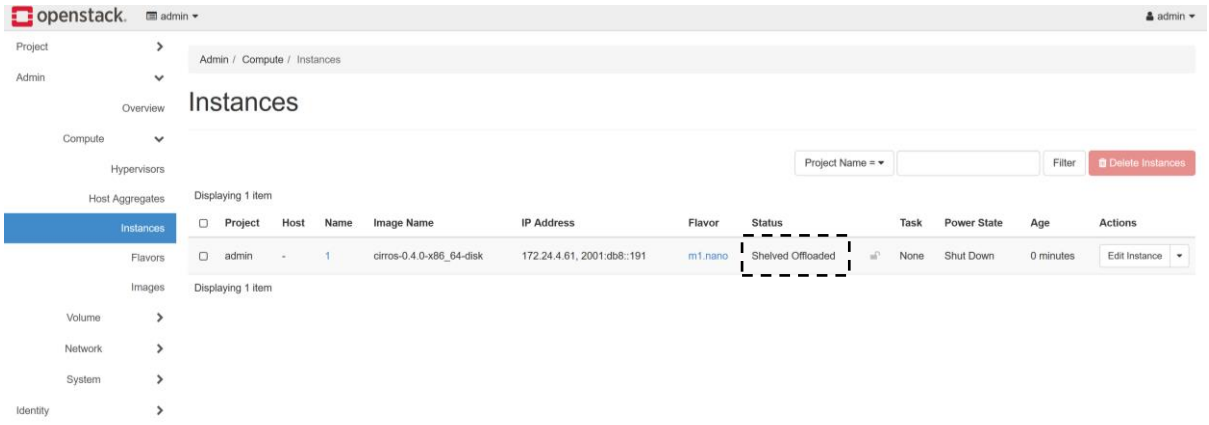


Depending on the current state of the instance, you can perform various actions on the instance. For example, create, shelve, migrate, hard reboot, rebuild and delete (actions in red are dangerous).

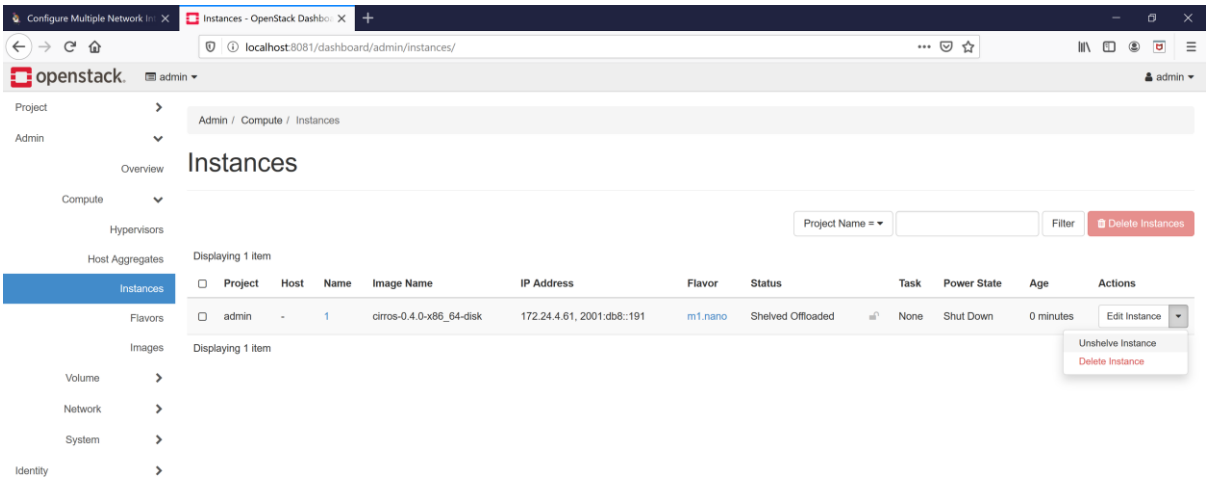
Shelving is useful if you have an instance that you are not using but would like retain in your list of servers. For example, you can stop an instance at the end of a work week, and resume work again at the start of the next week. All associated data and resources are kept; however, anything still in memory is not retained. If a shelved instance is no longer needed, it can also be entirely removed.

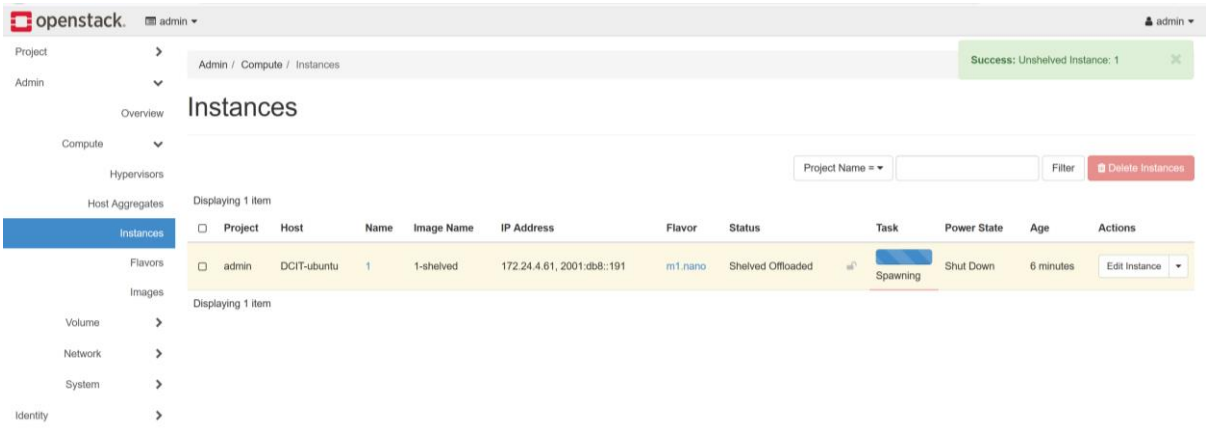
5. Select Shelve instance from the drop-down list in the Actions column.

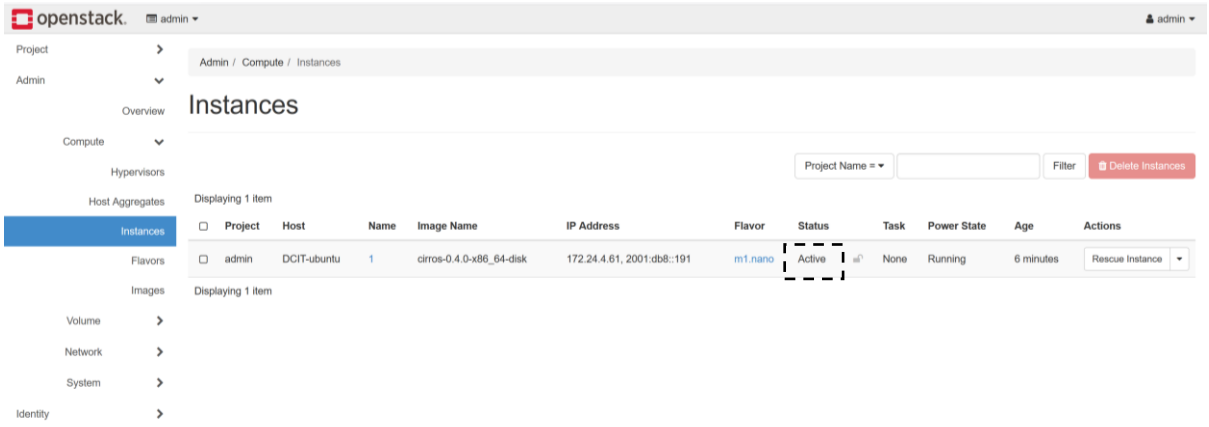




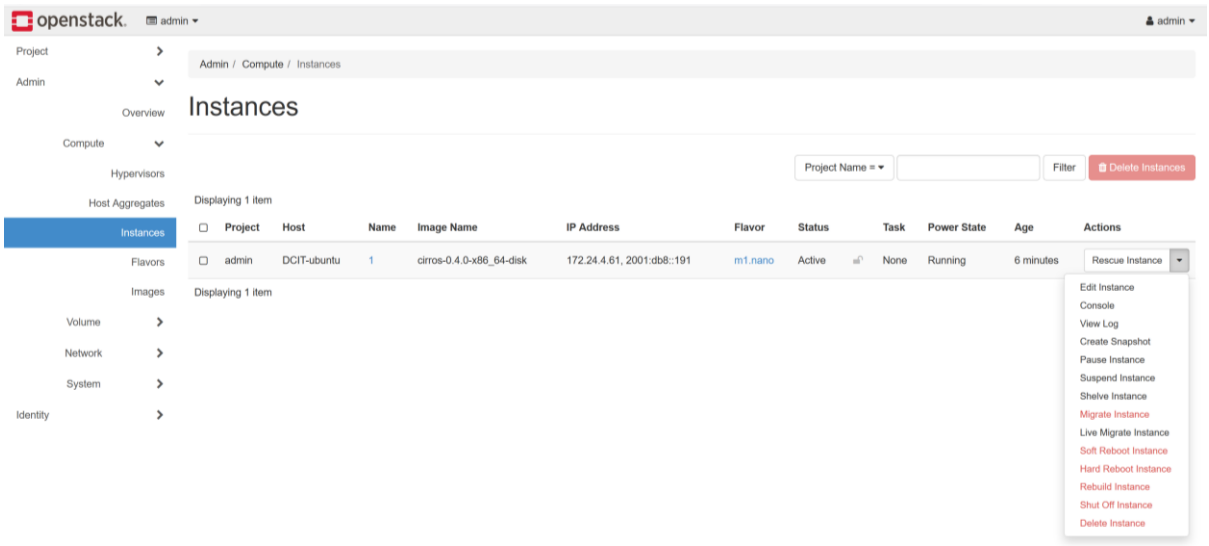
6. Now select Unshelve Instance from the drop-down list in the Actions column.







7. In the drop-down list in the Actions column we now see a series of options available for managing the instance. They are Rescue Instance, Edit Instance, Console View Log, Create Snapshot, Pause Instance, Suspend Instance, Shelve Instance, Migrate Instance, Live Migrate Instance, Soft Reboot Instance, Hard Reboot Instance, Rebuild Instance, Shut Off Instance and Delete Instance (actions in red are dangerous).



The actions are described as follows:

Rescue an instance

Rescue mode provides a mechanism for access, even if an image renders the instance inaccessible. By default, it starts an instance from the initial image attaching the current boot disk as a secondary one.

Pause and unpause an instance

Stores the state of the VM in RAM. A paused instance continues to run in a frozen state.

Suspend and resume an instance

Initiates a hypervisor-level suspend operation.

Migrate Instance

When you want to move an instance from one compute host to another, you can use the openstack server migrate command. The scheduler chooses the destination compute host based on its settings. This process does not assume that the instance has shared storage available on the target host.

Live Migrate Instance

Live-migrating an instance means moving its virtual machine to a different OpenStack Compute server while the instance continues running.

Soft Reboot Instance

A soft reboot attempts a graceful shut down and restart of the instance. By default, when you reboot an instance, it is a soft reboot.

Hard Reboot Instance

A hard reboot power cycles the instance (turns it off and on).

Rebuild Instance

In particular the compute service, Nova, has a useful rebuild function that allows you to rebuild an instance from a fresh image while maintaining the same fixed and floating IP addresses, amongst other metadata.

Starting and Stopping OpenStack Instances

When you want to stop and restart OpenStack instances, there are four different options to consider.

First, admins can pause and unpause a Nova compute instance. When an instance is paused, the entire state of the instance is kept in RAM. Pausing an instance will disable access to that instance, but won't free up any of its resources.

Another option is to suspend, and then resume, an instance. Like paused OpenStack instances, a suspended instance keeps its current state, but it is written to storage. Suspension, which frees up an instance's resources, is a better choice for instances that an organization doesn't need for a longer period of time.

A third option is to shelve OpenStack instances. Where a suspended instance maintains all the information it currently has in RAM, this is not the case for a shelved instance. A shelved instance, however, does keep all of its associated resources. So if the instance uses ephemeral storage, it maintains that resource when an admins shelves it, and continues to use that resource when unshelved.

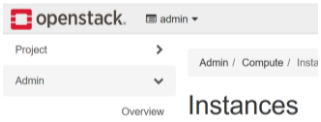
A shelved instance is actually shut down, which is not the case for suspended or paused instances. If admins decide they no longer need a shelved instance, they can remove it, which ensures that it doesn't maintain any hypervisor-level resources in use.

The last option is to stop an instance in Nova, which will disconnect all of its associated resources. This means admins can't restore a stopped instance to its previous state. This option is only useful for OpenStack instances that an organization no longer needs. In all other cases, admins should shelve, suspend or pause the instance.

Track usage for instances

You can track usage for instances for each project. You can track costs per month by showing meters like number of vCPUs, disks, RAM, and uptime for all your instances.

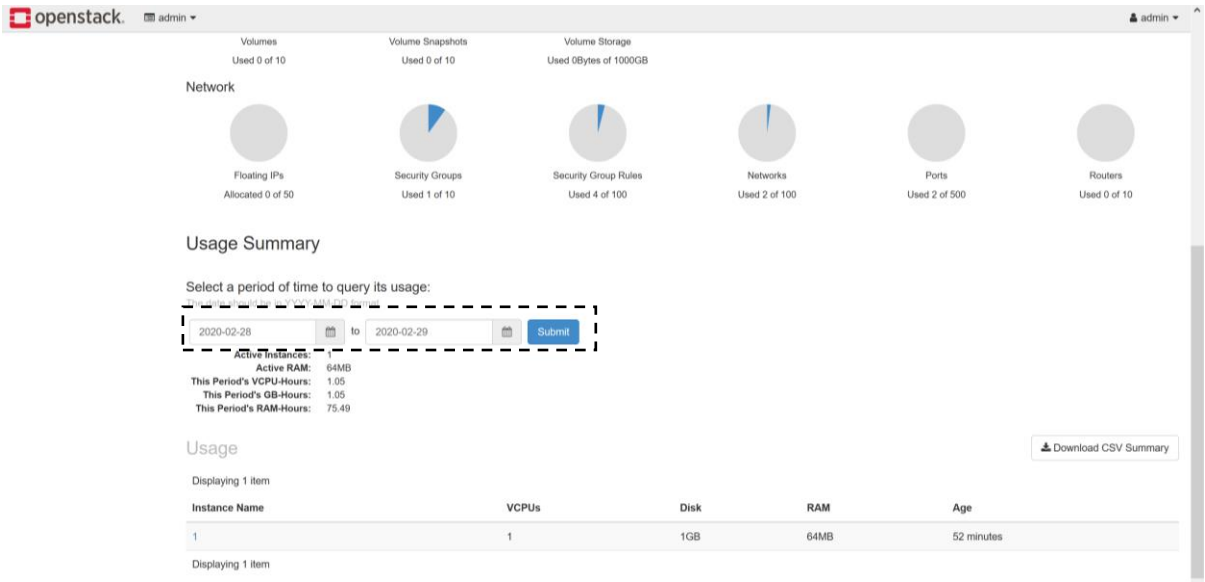
1. Log in to the dashboard.



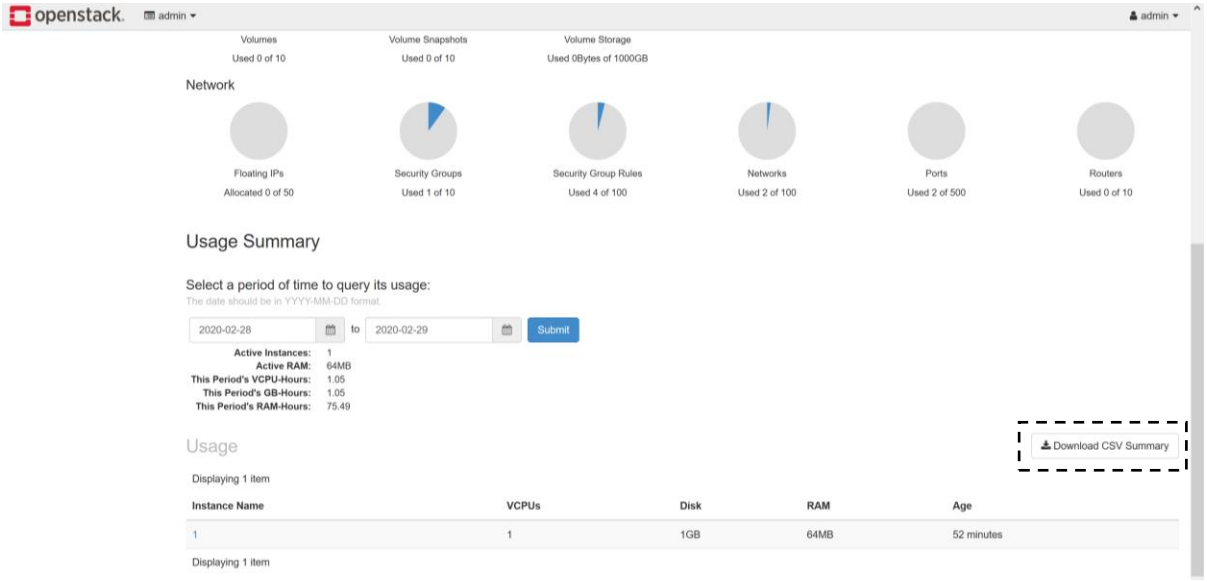
2. Select the appropriate project from the drop-down menu at the top left.

3. On the Project tab, open the Compute tab and click Overview category.

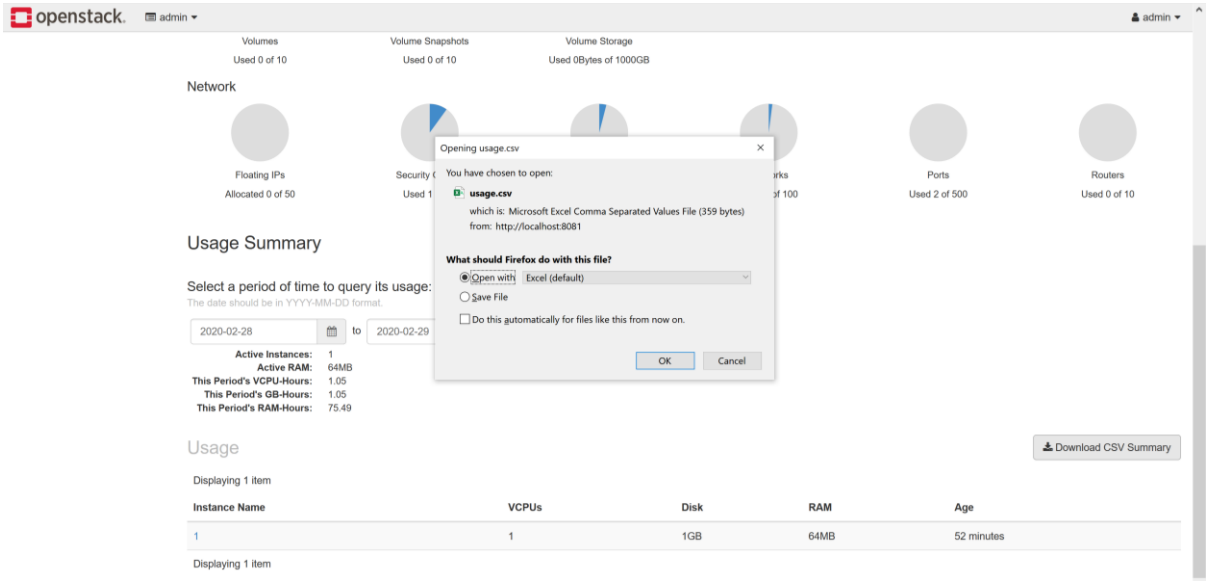
4. To query the instance usage for a month, select a month and click Submit.



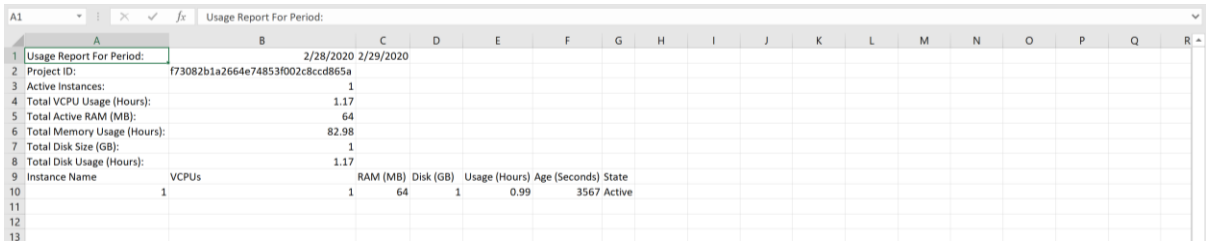
5. To download a summary, click Download CSV Summary.



6. Select OK from the dialog box.



7. View the results.



	A	B	C	D	E	F	G
1	Usage Report For Period:	2/28/2020	2/29/2020				
2	Project ID:	f73082b1a2664e74853f002c8ccd865a					
3	Active Instances:	1					
4	Total VCPU Usage (Hours):	1.17					
5	Total Active RAM (MB):	64					
6	Total Memory Usage (Hours):	82.98					
7	Total Disk Size (GB):	1					
8	Total Disk Usage (Hours):	1.17					
9	Instance Name	VCPUs	RAM (MB)	Disk (GB)	Usage (Hours)	Age (Seconds)	State
10	1	1	64	1	0.99	3567	Active
11							
12							
13							

END