Cloud Application Development

Week 3

Horizon Dashboard

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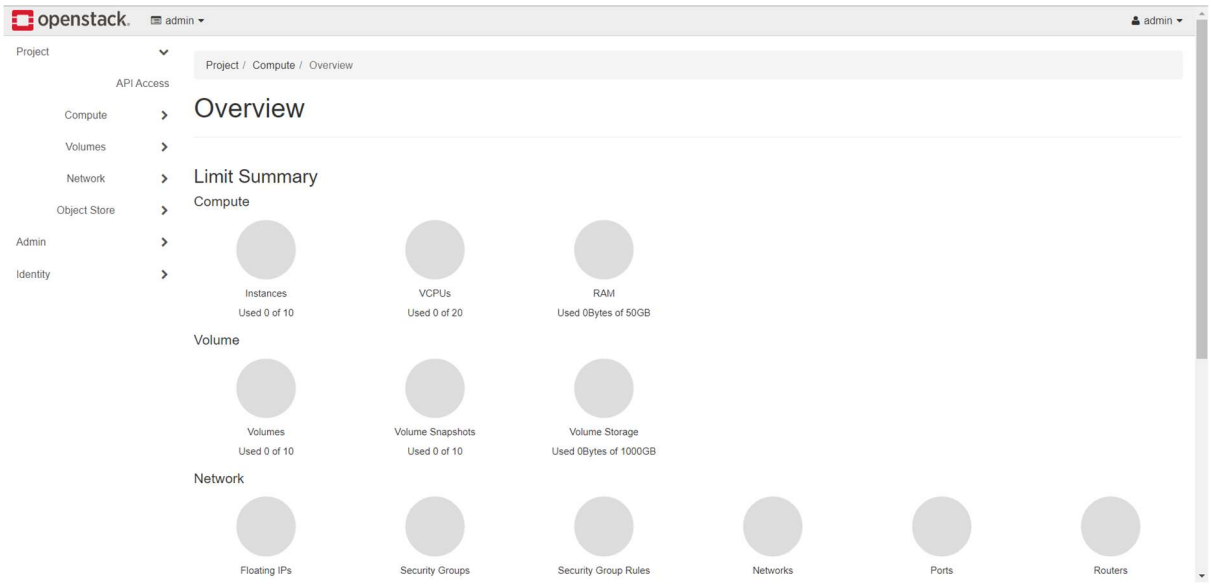
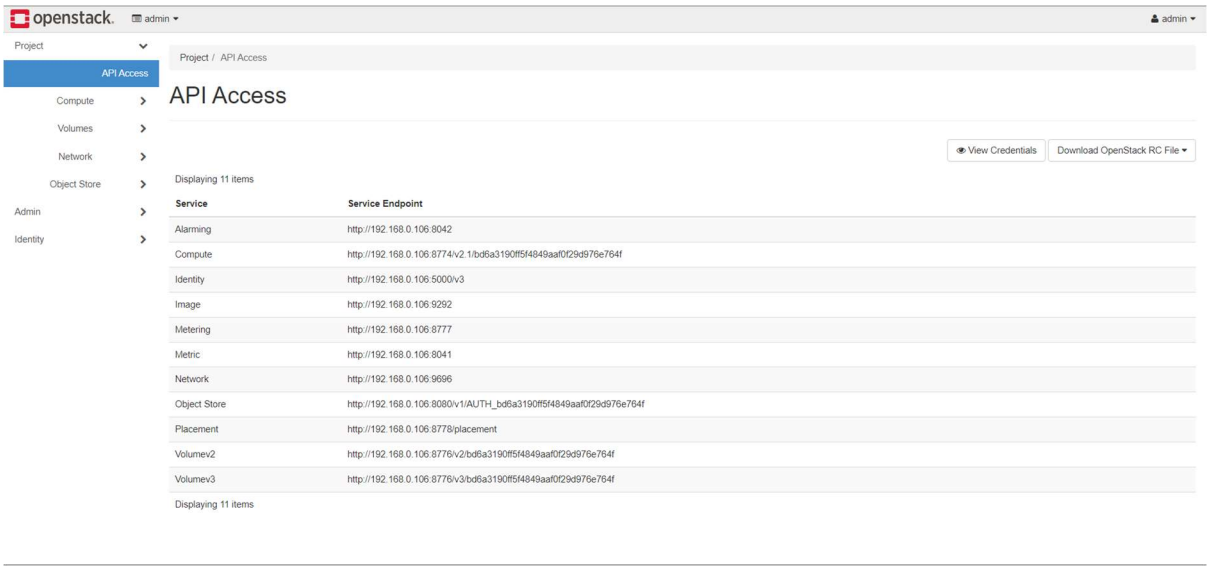
The Project Tab

The management tab in OpenStack horizon provides a graphical interface for the project administrators to manage the various resources and users of the project like compute, volumes, network, Object storage, etc.

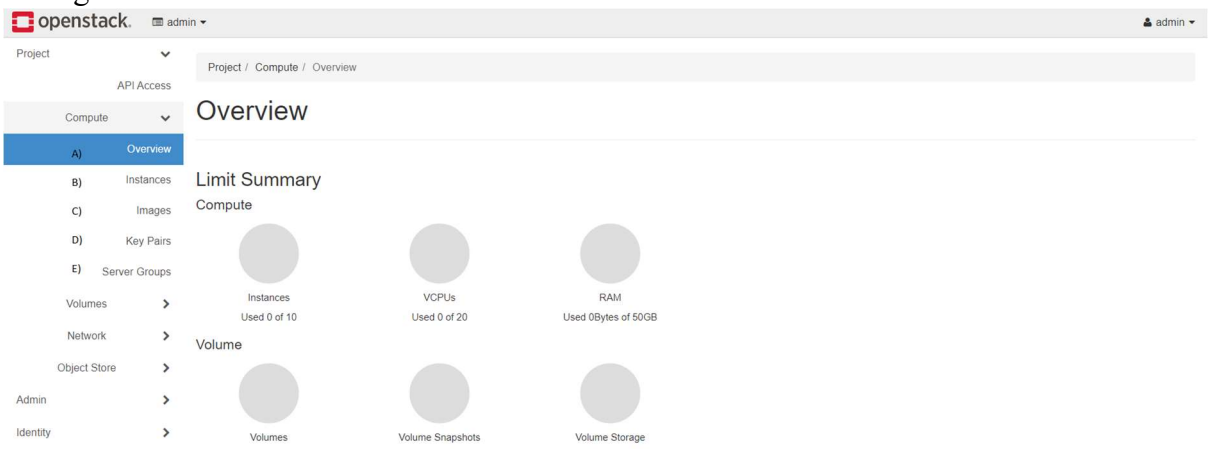


Different components inside the project tab: -

1) API Access: - OpenStack provides the access to APIs for managing OpenStack projects and resources. These APIs allow the administrator to perform various tasks like creating, modifying, and deleting projects, as well as managing resources such as virtual machines, storage, and networking.

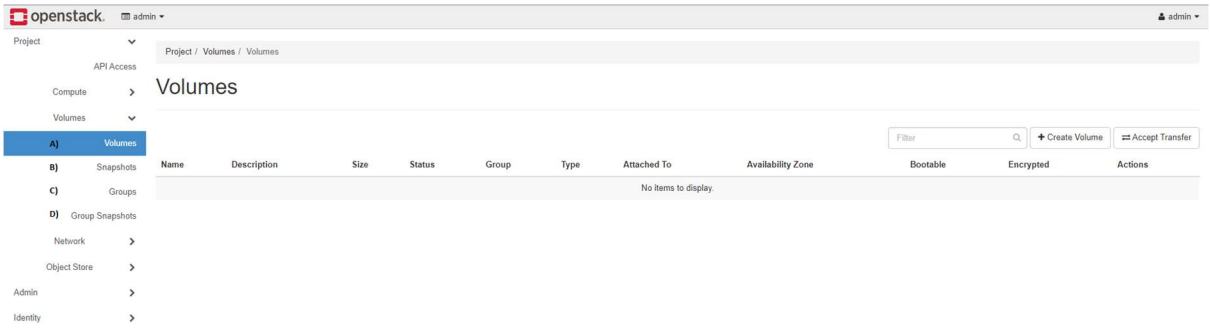


2) Compute: - The compute option in OpenStack is a graphical interface for the OpenStack nova service (Compute service). This option allows the user to create, manage and delete the virtual machine.



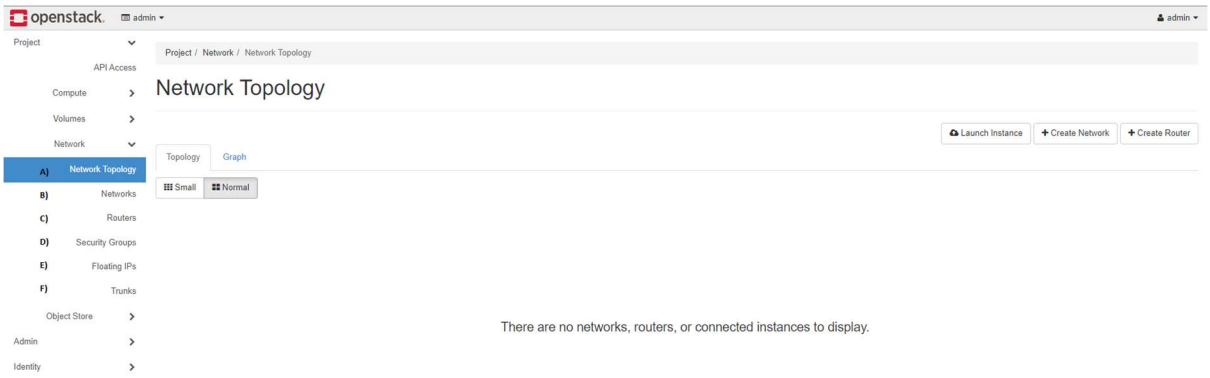
a) Overview: -This option shows the summary of all the virtual machines running in the project. This option shows all the aspects of the VM like VCPUs, RAM, Volume and Network.
b) Instances: - This option provides the user option to create new VMs, manage the VMs, Monitor VMs performance, connect to VMs and Manage the security group.
c) Images: -This is the graphical interface for the OpenStack service called Glance (Image Service). This option helps in managing the images used in the creation of VMs. In this, you can upload a new image, modify the existing image and delete the unwanted images.
d) Key Pairs: -This option provides the interface for creating, modifying and deleting the public and private keys which are used in establishing the connection to the VMs for secure access.
e) Server Groups: -This option provides the interface to manage the group of VMs in the OpenStack cloud. A Server group is a way to manage multiple VMs as a single unit.

3) Volumes: - The Volume option in OpenStack is a graphical interface for the OpenStack cinder service (block storage service). This option provides the user with the options for managing and monitoring the storage allocated to the project.



a) Volumes: - This option provides the list of all the storage volumes used in the project with their name size, type and status. This option allows you to create, attach and detach and delete volumes.
b) Snapshots: - This option shows the list of snapshots of the volume along with the option of creating, managing, restoring, deleting and monitoring the snapshots.
c) Groups: -This option allows the user to manage the group of volumes as a single entity. Tasks which can be done under the Groups are Creating groups, managing groups, adding volumes to groups, removing volumes to groups and the monitoring performance of volume groups
d) Group Snapshots: - This option is similar to the Snapshot option it just works for the groups

4) Network: - The Network option in OpenStack is a graphical interface for the OpenStack neutron service (networking service). This tab provides a management interface for configuring and managing the virtual network in the cloud.



a) Network Topology: -This option provides the user with the visual representation of virtual network topology. This option displays a graphical representation of the virtual network, router, subnets and connection between them. You can also add a network and router using this option.
b) Networks: -This option shows the list of all the virtual networks along with their information like name, subnets and status. You can also add, delete and modify the virtual network using this option.

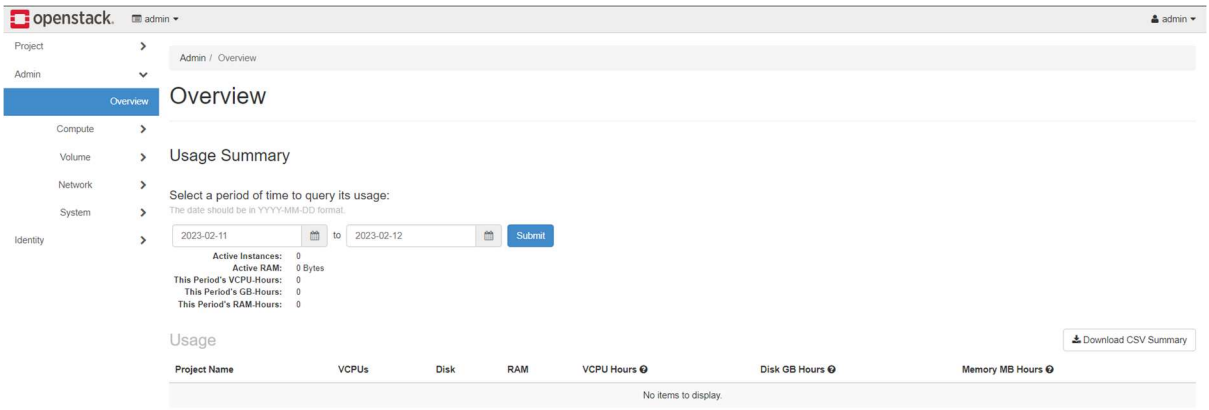
c) Routers: - This option shows the list of all the routers along with their information like name, status, no. of network and subnets attached to each router. You can also add, delete and modify the router using this option.
d) Security Group: - A security group is a collection of firewall rules that defines the type of network traffic allowed to reach the virtual machine. This option shows the list of Security groups and also provides the option to create, modify and delete the security group.
e) Floating Ips: - Floating IP addresses are public IP addresses that can be dynamically assigned to virtual machines, allowing them to communicate with the Internet. This option shows the list of floating Ips which are assigned to a VM along with the name.
f) Trunks: - Trunks are a type of virtual network that allows multiple virtual network interfaces (VNIs) to be combined into a single connection. This option helps the user to create and manage the trunks.

5) Object Storage: - The Object Storage option in OpenStack is a graphical interface for the OpenStack Swift service (Object storage service). This tab provides a management interface for configuring and managing the object storage of the project.

a) Containers: -This option provides an interface to the user that Allows users to manage and organize their files and data by creating and managing containers.

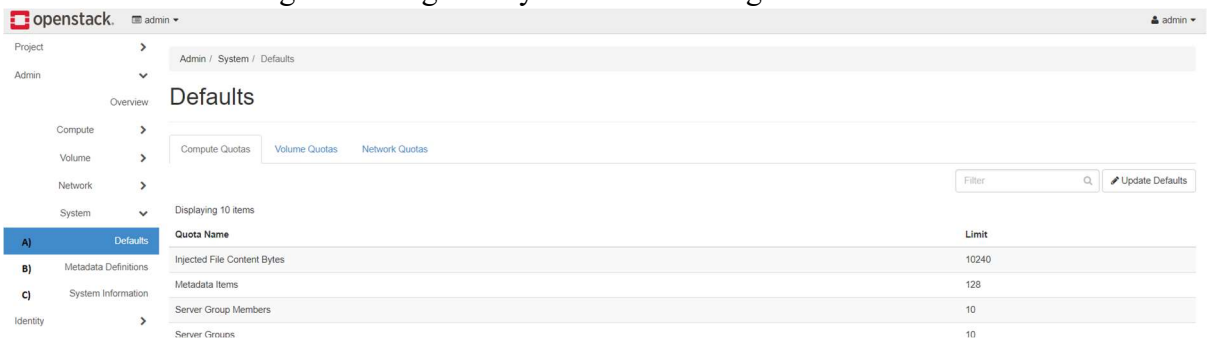
The Admin Tab

In OpenStack Horizon, the "Admin" tab is used by administrators to manage and modify numerous parts of the OpenStack cloud environment. It gives users access to settings and administrative features that are normally inaccessible to regular users.



Different components of the Admin tab: -

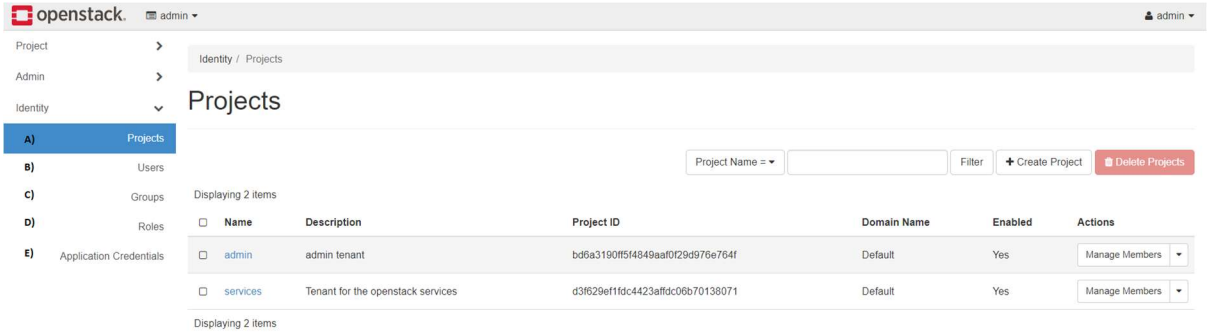
1) Overview: - This option shows the summary of all the virtual machines running in the cloud. This option shows all the aspects of the VM like VCPUs, RAM, Volume and Network.
2) Compute: - The compute option in OpenStack is a graphical interface for the OpenStack nova service (Compute service). This option allows the user to create, manage and delete the virtual machine.
3) Volume: - The Volume option in OpenStack is a graphical interface for the OpenStack cinder service (block storage service). This option provides the user with the options for managing and monitoring the storage allocated to the project.
4) Network: - The Network option in OpenStack is a graphical interface for the OpenStack neutron service (networking service). This tab provides a management interface for configuring and managing the virtual network in the cloud.
5) System: -This section of the admin tab provides administrators with the user interface which is used to change or manage the system-wide settings.



   a) Defaults: -The default section under the System tab provides administrators with a way to set the Default values to system-wide settings.
   b) Metadata Definitions: -This option in the System tab allows the administrators to define custom metadata fields that can be related to different OpenStack components like instances, images, and volumes.
   c) System information: -this section provides the administrators with the system information like system architecture, installed components, and configurations.

The Identity Tab

The identity tab is a centralized interface for managing the authentication and authorization aspects of Opentack. This tab allows administrators to manage users, projects, domains, roles, and other identity-related resources.



Different sections of the Identity tab are: -

1) Projects: -This section allows the administrators to create new projects, edit existing projects and manage project quotas.
2) Users: -This section allows the admin to create new users, delete or modify the existing users and assign new roles to users.
3) Groups: -This section allows the admins to create, modify, and add roles to the existing group, adding or removing users from the group. So that admin can treat multiple users as a single entity.
4) Roles: -This section allows admins to give or remove specific permissions to the user or the groups.
5) Application Credentials: - This section allows the admin to manage authentication credentials for OpenStack, including creating new credentials, editing existing credentials, and revoking credentials.