

# IST198

# OpenStack

# Administration

Version 6: 2017-08-15

These exercises will guide the student through the concepts and topics learned in chapter 2, manage OpenStack Projects and Users

## Manage OpenStack Projects, Users and Quotas.



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## Attributions:



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## Introduction

You have been hired as an intern with CLOUDTech Inc. CLOUDTech is a Cloud Computing consulting firm and Cloud Provider supporting thousands of clients in the region. The company provides a wide range of services to support migrating client Information Technology infrastructure to a Private, Hybrid or Public Cloud environment. You learned that the company has multiple departments and you will start your internship working with the Cloud hosting department customer support team.

The Cloud hosting department provides multiple platform and vendor Cloud hosting services for Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS) and many other as a service offerings. The support team is responsible for helping customers with any issues related to their Cloud infrastructure hosted at and provided by CLOUDTech.

You will perform hands-on exercises to learn about the OpenStack Cloud implementation CLOUDTech uses to host customer Cloud environments.

### Service Models

#### Infrastructure as a Service (IaaS)

IaaS provides virtualized computing resources over the internet.

#### Platform as a Service (PaaS)

PaaS provides the platform for customers to develop and manage applications.

#### Software as a Service (SaaS)

SaaS hosts applications and makes them available to customers.

## Lab Objectives

### Learner will be able to:

- Manage OpenStack Projects, Users and Quotas

## Labs 3-5

These labs will guide the student through managing OpenStack Projects, Users and Quotas

**(Note: This lab is designed to be completed on an NDG NETLAB System with the IST198\_OpenStack\_HXXX POD installed. The labs can also be completed on a physical machine with the appropriate software packages installed, or a PC that has VMware Workstation installed with the appropriate virtual machines configured).**

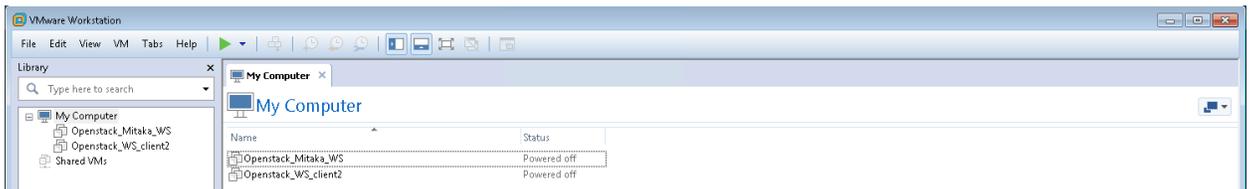
Note: If the Openstack VMware Workstation environment is not configured for you, please refer to the OpenStack VMware Workstation setup instructions included with the OVF files.



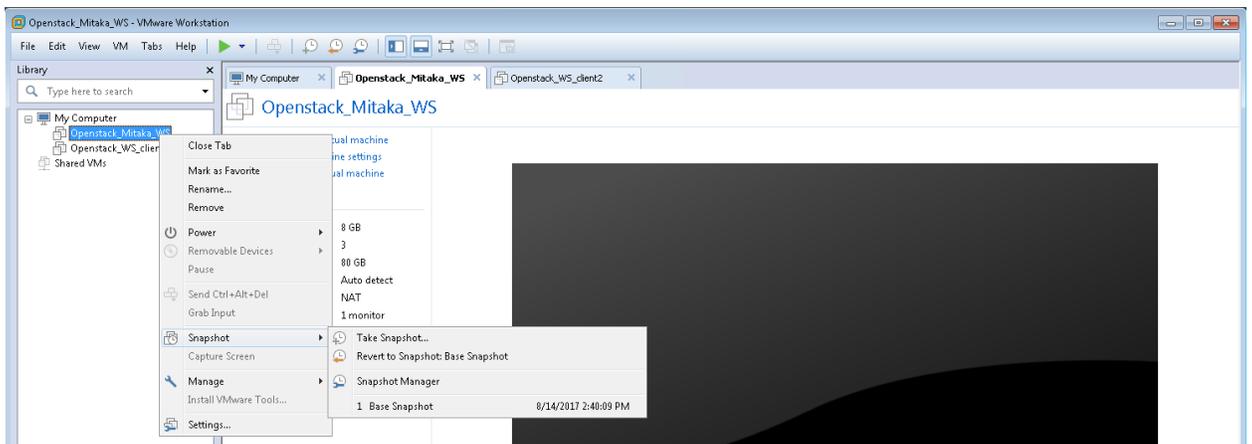
## Prepare the OpenStack Virtual Machines



1. Launch the VMware Workstation Pro application

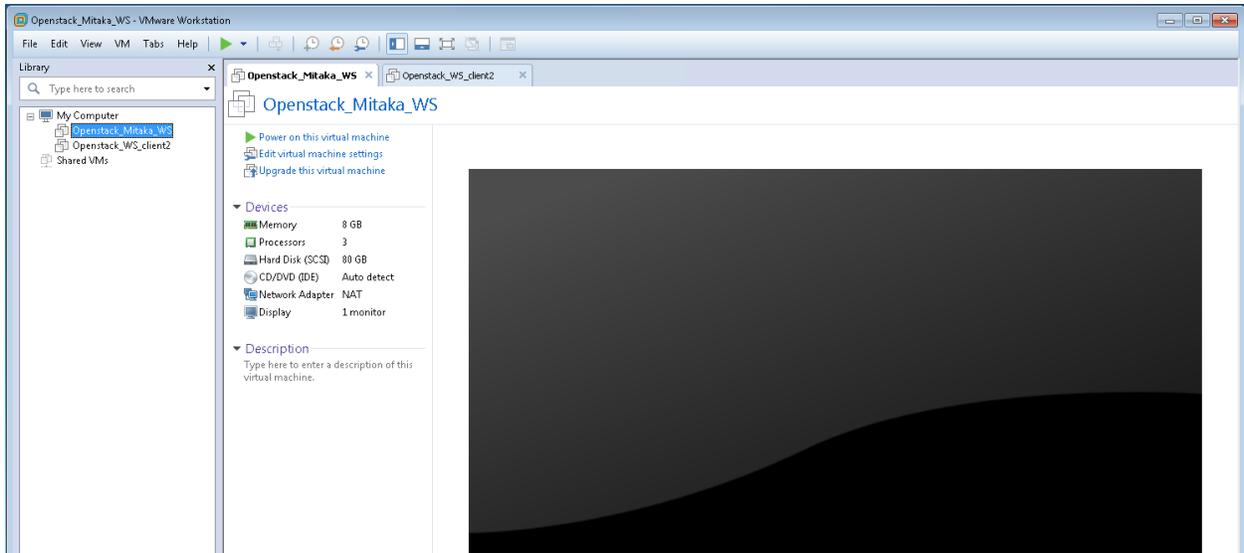


2. Workstation should have two virtual machines (VM) installed; Openstack\_Mitaka\_WS and Openstack\_WS\_client2.



3. Ensure that the Openstack\_Mitaka\_WS is at the correct starting point by reverting to the base snapshot. Right Click on Openstack\_Mitaka\_WS then Snapshot>Base Snapshot. Repeat for the Openstack\_WS\_client2 VM.

## Module 2: Manage Projects, Users and Quotas



4. **Power on** both VMs by selecting one of the two VMs and **clicking on Power on this virtual**

## Lab Scenario

As part of CLOUDTech's customer support team, you will learn to manage projects, users and quotas in preparation for your first field visit to XYZ Company.

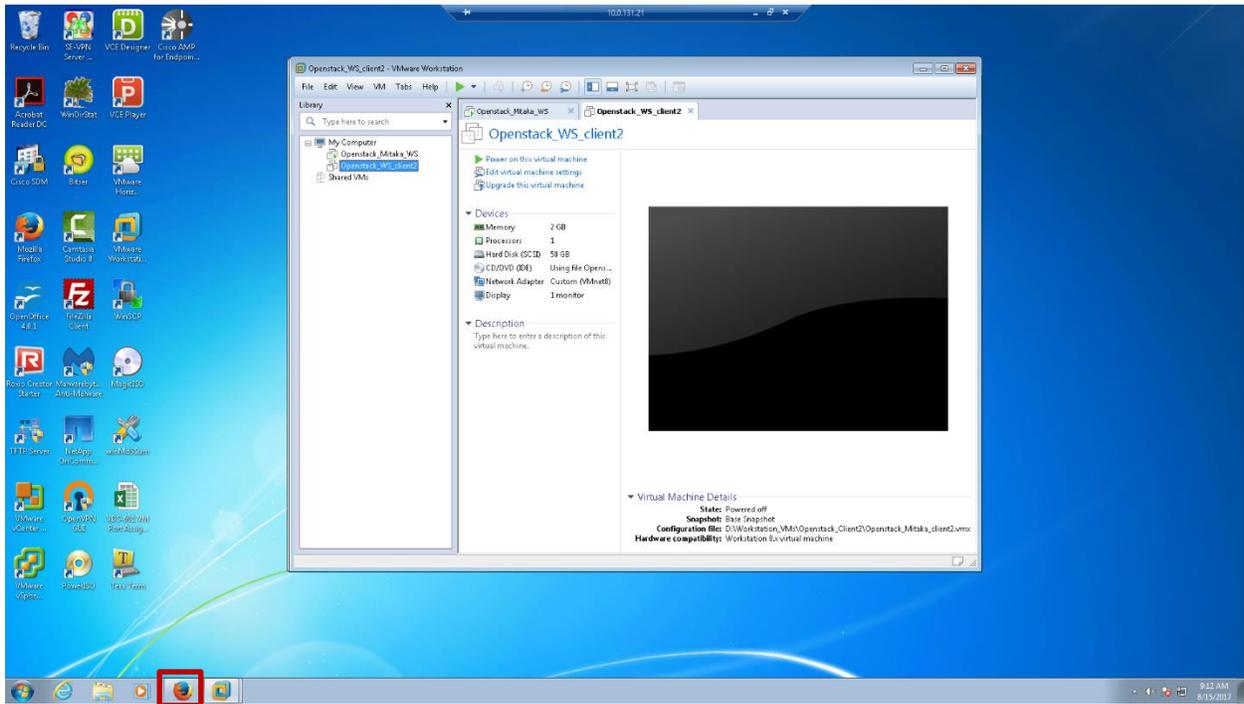
## Lab Settings

The information in the table below will be needed in order to complete the labs. The task sections that follow provide details on the use of this information

Virtual Machine (VM)	IP ADDRESS	Account	Password	VM Type
Client2	10.220.0.2	Student	P@ssword	CentOS 7 Client
Server1	10.220.0.30	root	P@ssword	OpenStack Mitaka
OpenStack Dashboard	10.220.0.30	Student	P@ssword	Web Page Login credentials

Note: In this OpenStack VMware Workstation environment, the two VMs can be reverted back to their base snapshot at any time. This means that you can explore or experiment without fear of permanently damaging the OpenStack environment. If you make a mistake that you can't recover from, then stop and revert the appropriate VM to the base snapshot and everything will be back to a known good starting point.

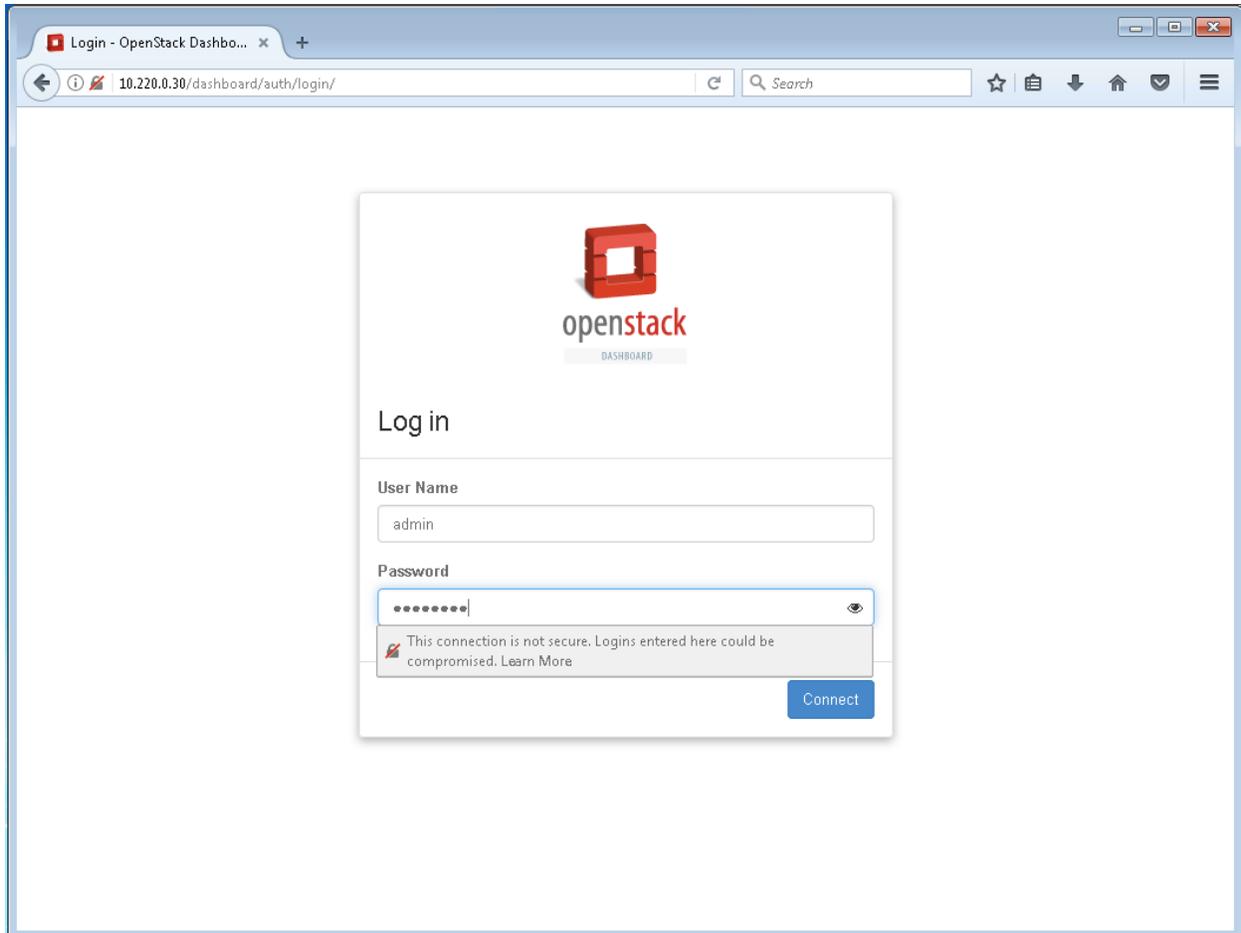
## Access the OpenStack Dashboard



1. On your Windows host PC, open an internet browser

Note: Openstack\_WS\_client2 is a CentOS 7 desktop VM that you can use as an alternate to the host to accomplish all of the labs, unless specifically noted in the instructions.

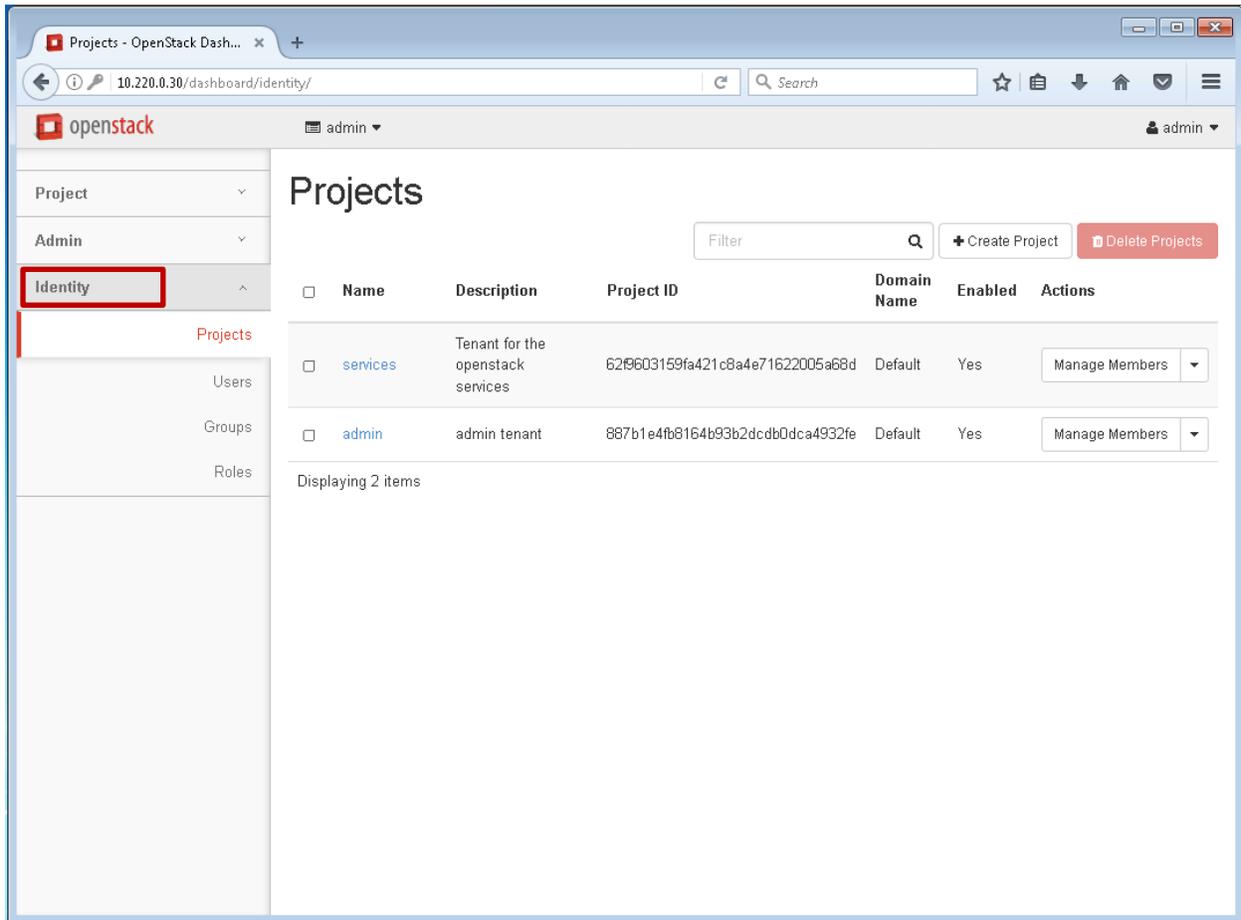
## Module 2: Manage Projects, Users and Quotas



2. **Navigate** to **http://10.220.0.30/dashboard**. **Login** to the OpenStack Dashboard with the username **admin** and **P@ssword** and press **enter** or **click Connect**

Note: User Name entries are not case sensitive, passwords are.

## Lab 3: Manage OpenStack Projects

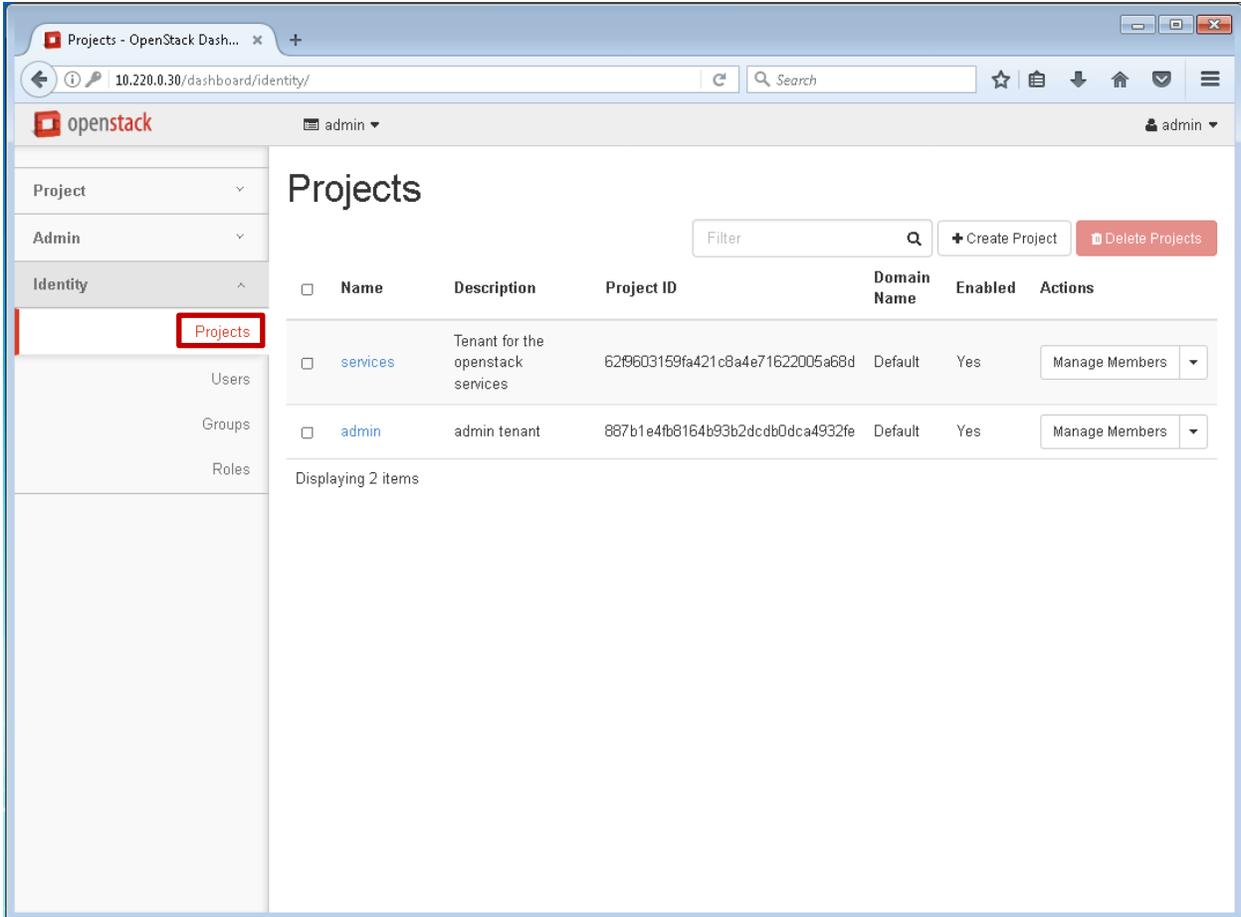


1. Click on the **Identity** tab.

### Identity

An OpenStack Dashboard tab used to manage Projects, Users, Groups, and Roles

## Module 2: Manage Projects, Users and Quotas



The screenshot shows the OpenStack dashboard interface. The browser address bar indicates the URL is `10.220.0.30/dashboard/identity/`. The dashboard header includes the OpenStack logo and the user name 'admin'. The left sidebar contains navigation tabs: 'Project', 'Admin', 'Identity', and 'Projects' (which is highlighted with a red box). The main content area is titled 'Projects' and features a search filter, '+ Create Project' button, and '- Delete Projects' button. Below these are two project entries in a table:

<input type="checkbox"/>	Name	Description	Project ID	Domain Name	Enabled	Actions
<input type="checkbox"/>	services	Tenant for the openstack services	629603159fa421c8a4e71622005a68d	Default	Yes	Manage Members
<input type="checkbox"/>	admin	admin tenant	887b1e4fb8164b93b2dcdb0dca4932fe	Default	Yes	Manage Members

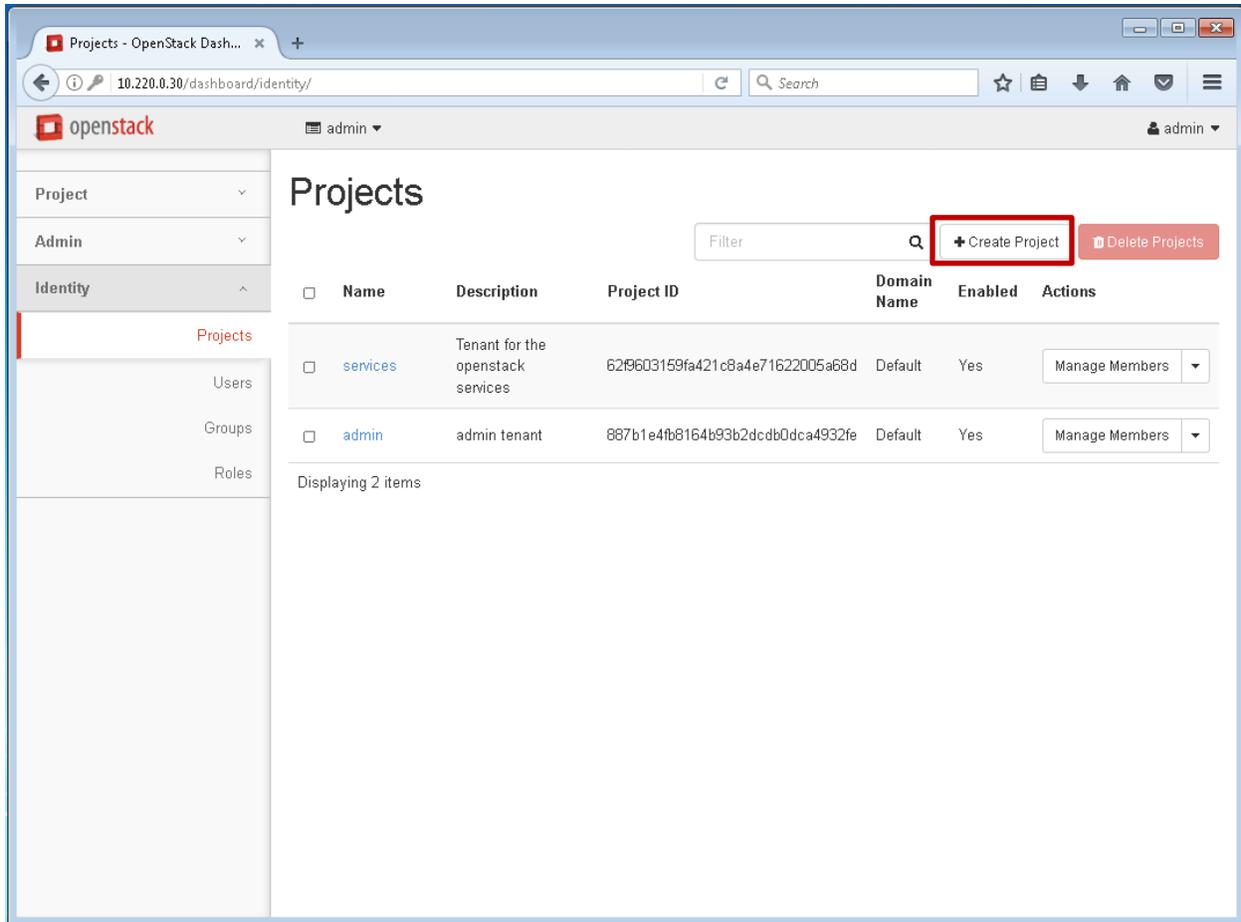
Displaying 2 items

### 2. Click on Projects tab

## Projects

A project is a group of zero or more users. A project owns virtual machines. In Object Storage, a project owns containers. Users can be associated with more than one project. Projects are also known as tenants. Each project and user pairing can have a role associated with it. Projects can be associated with an organization, account, customer, etc., and there are three projects that are installed with a default Installation: admin, services and demo.

## Module 2: Manage Projects, Users and Quotas



The screenshot shows the OpenStack dashboard interface. The browser address bar displays '10.220.0.30/dashboard/identity/'. The page title is 'Projects'. A search bar is present with the text 'Filter'. To the right of the search bar are two buttons: '+ Create Project' (highlighted with a red box) and 'Delete Projects'. Below these is a table with the following columns: Name, Description, Project ID, Domain Name, Enabled, and Actions. The table contains two rows:

<input type="checkbox"/>	Name	Description	Project ID	Domain Name	Enabled	Actions
<input type="checkbox"/>	services	Tenant for the openstack services	629603159fa421c8a4e71622005a68d	Default	Yes	Manage Members
<input type="checkbox"/>	admin	admin tenant	887b1e4fb8164b93b2dcd0dca4932fe	Default	Yes	Manage Members

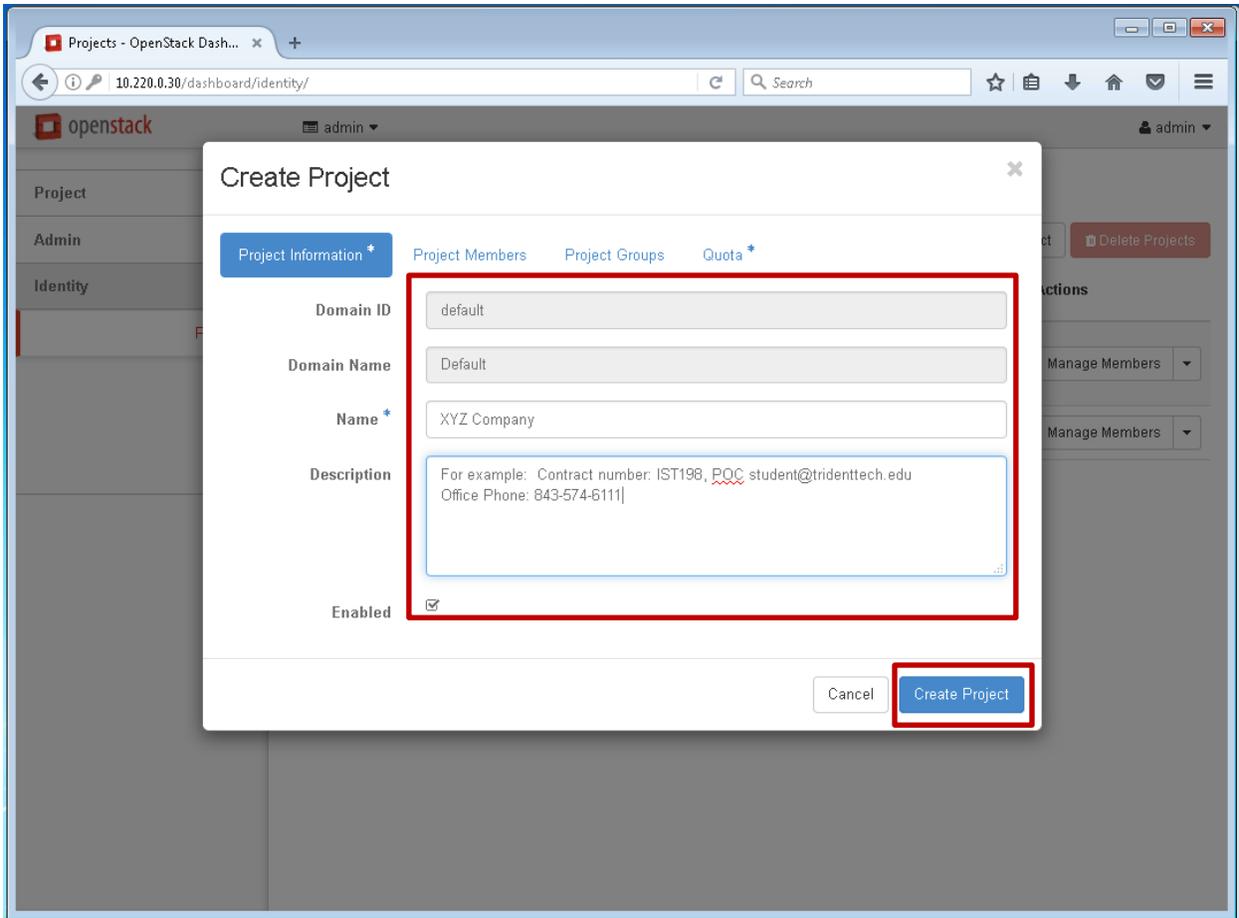
Below the table, it says 'Displaying 2 items'. On the left side, there is a navigation menu with 'Project', 'Admin', and 'Identity' sections. Under 'Identity', there are links for 'Projects', 'Users', 'Groups', and 'Roles'.

### 4. Click on Create Project

## Services and Admin Project

Service project contains all services that are listed in the catalog and the admin project is used to create additional projects, users, etc.

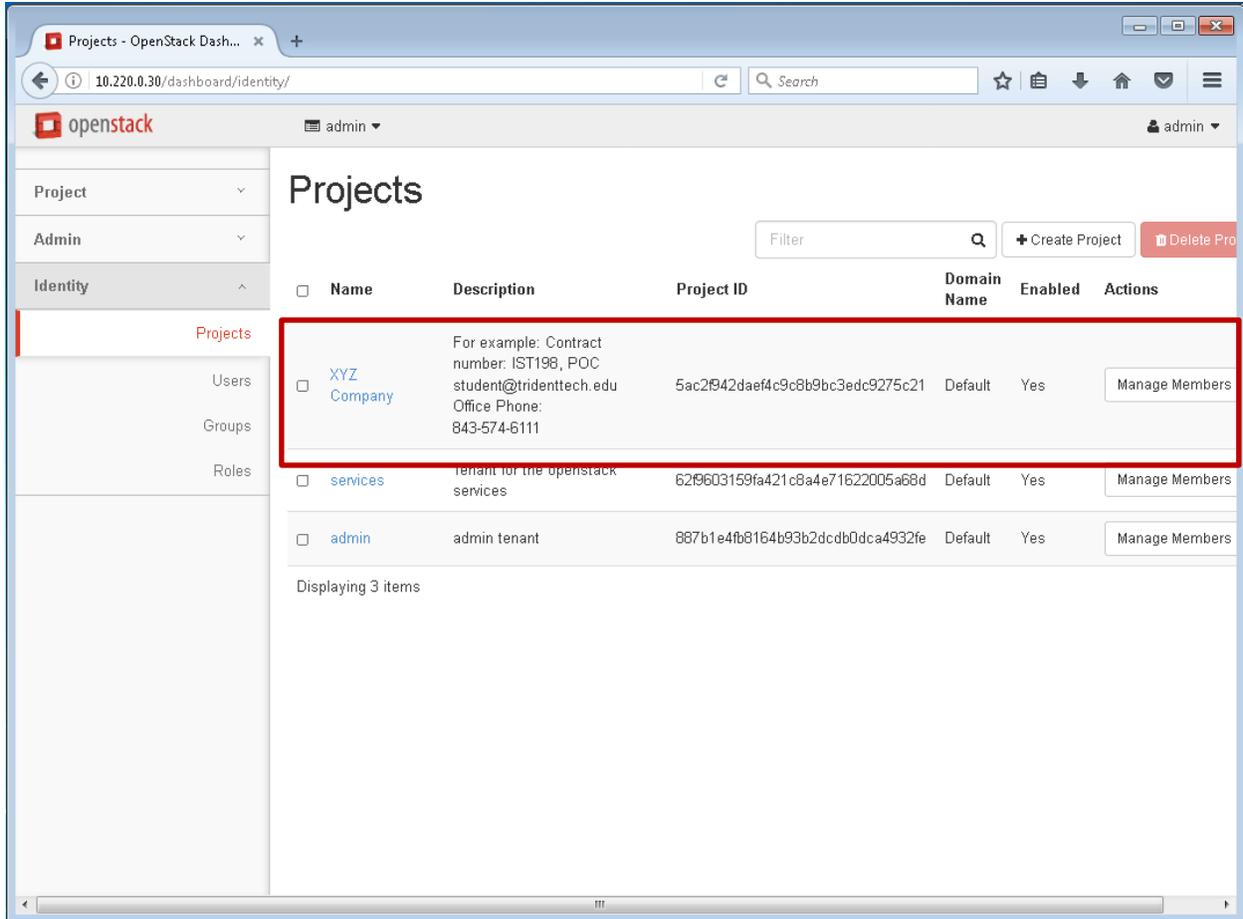
## Module 2: Manage Projects, Users and Quotas



5. The **Create Project** wizard should open. **Enter the Project Name**, for this environment we will call it **XYZ Company**. Each cloud provider would most likely have a policy governing what information would be entered in the description block. **Click Create Project**

Name	XYZ Company
Description	Contract number, POC, and Phone number
Enabled	Checked by default

## Module 2: Manage Projects, Users and Quotas



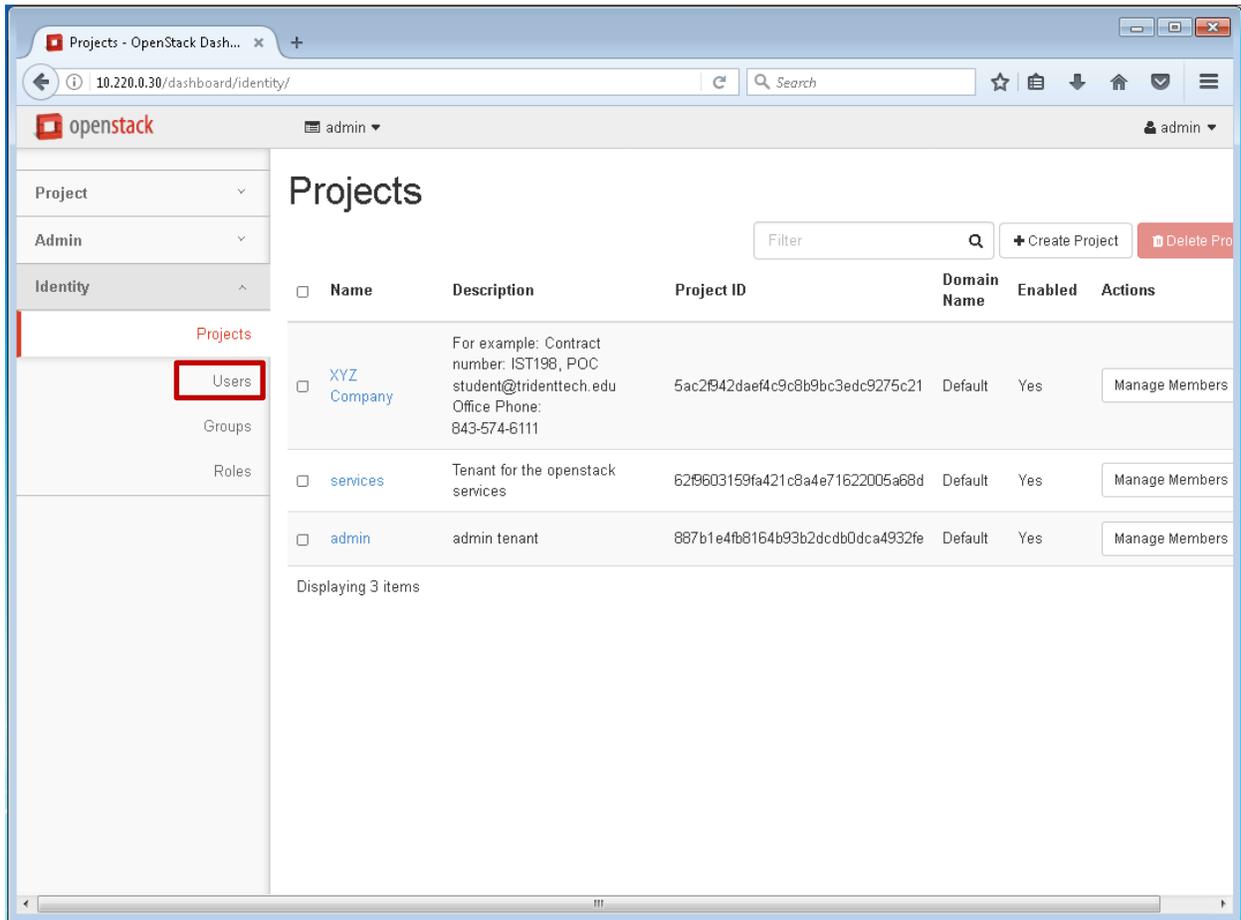
The screenshot shows the OpenStack Identity dashboard. The left sidebar contains navigation links for Project, Admin, Identity, Projects, Users, Groups, and Roles. The main content area is titled 'Projects' and features a table with columns: Name, Description, Project ID, Domain Name, Enabled, and Actions. A red box highlights the 'XYZ Company' project row. The table also lists 'services' and 'admin' projects. At the bottom of the table, it says 'Displaying 3 items'.

<input type="checkbox"/>	Name	Description	Project ID	Domain Name	Enabled	Actions
<input type="checkbox"/>	XYZ Company	For example: Contract number: IST198, POC student@tridenttech.edu Office Phone: 843-574-6111	5ac2f942dae4c9c8b9bc3edc9275c21	Default	Yes	Manage Members
<input type="checkbox"/>	services	tenant for the openstack services	62f9603159fa421c8a4e71622005a68d	Default	Yes	Manage Members
<input type="checkbox"/>	admin	admin tenant	887b1e4fb8164b93b2dcdb0dca4932fe	Default	Yes	Manage Members

6. XYZ Company should appear in the Projects pane. In the next lab you add a user to the XYZ Company project

Continue to Lab 4

## Lab 4: Manage OpenStack Users

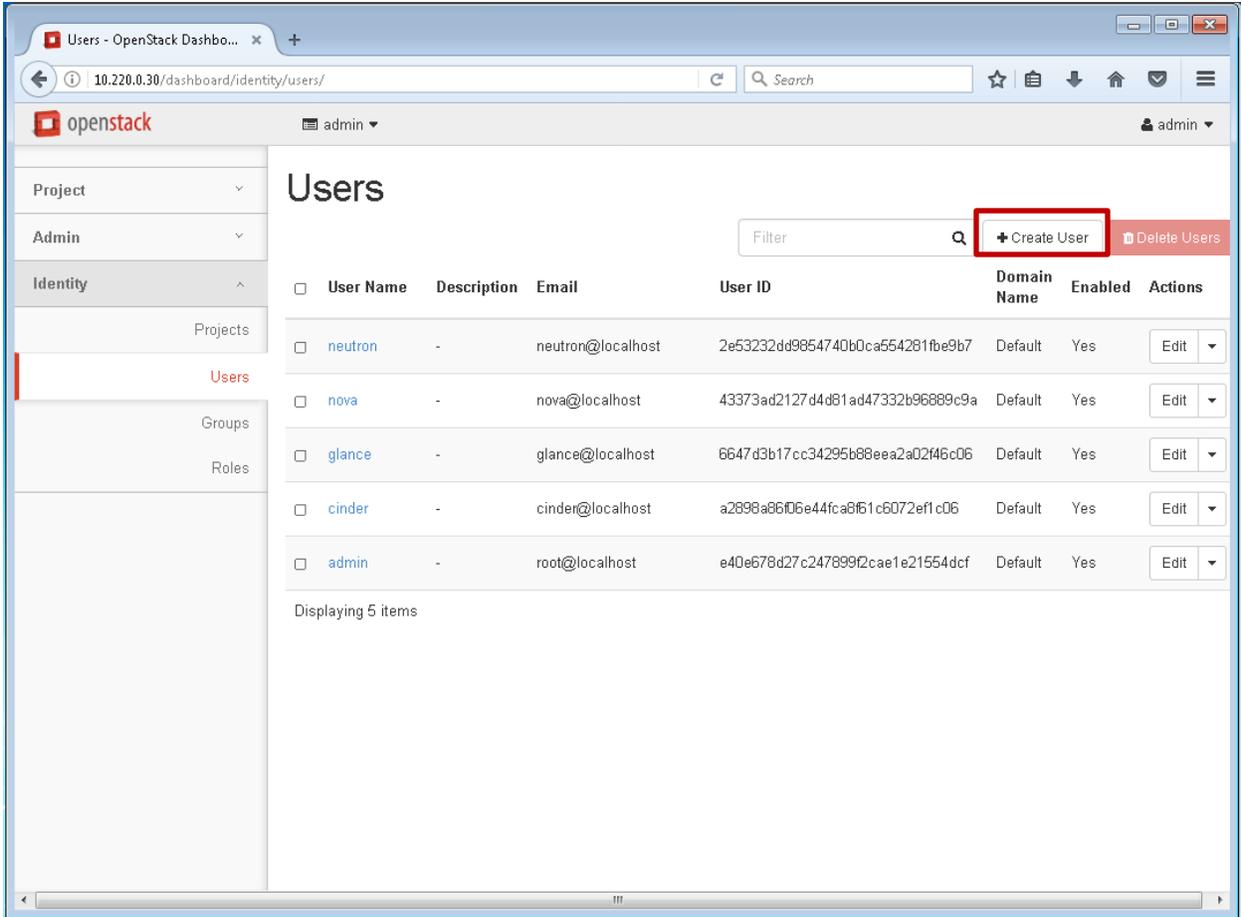


1. Click on **Users** under the Identity tab

### Users

Users associated in the admin role, can view, create, edit, and delete users, and change user passwords. The Users tab displays only if logged in as a user with administrative privileges. While creating users, the Role needs to be specified apart from username, password, email address, and primary project. The default OpenStack installation comes with three predefined roles: admin, member and demo. Adding a user with admin role makes the user an administrative super user.

## Module 2: Manage Projects, Users and Quotas



The screenshot displays the OpenStack Identity Users management interface. The page title is "Users" and the URL is "10.220.0.30/dashboard/identity/users/". The interface includes a sidebar with navigation options: Project, Admin, Identity, Projects, Users (highlighted), Groups, and Roles. The main content area shows a table of users with the following columns: User Name, Description, Email, User ID, Domain Name, Enabled, and Actions. A red box highlights the "+ Create User" button in the top right corner of the table area.

<input type="checkbox"/>	User Name	Description	Email	User ID	Domain Name	Enabled	Actions
<input type="checkbox"/>	neutron	-	neutron@localhost	2e53232dd9854740b0ca554281f9e9b7	Default	Yes	Edit
<input type="checkbox"/>	nova	-	nova@localhost	43373ad2127d4d81ad47332b96889c9a	Default	Yes	Edit
<input type="checkbox"/>	glance	-	glance@localhost	6647d3b17cc34295b688ea2a02f46c06	Default	Yes	Edit
<input type="checkbox"/>	cinder	-	cinder@localhost	a2898a86d06e44fca8f61c6072ef1c06	Default	Yes	Edit
<input type="checkbox"/>	admin	-	root@localhost	e40e678d27c247899f2cae1e21554dcf	Default	Yes	Edit

Displaying 5 items

2. Click on Create User

## Module 2: Manage Projects, Users and Quotas

The screenshot shows the 'Create User' wizard in the OpenStack dashboard. The form is filled with the following information:

- User Name: student
- Description: optional
- Email: student@tridenttech.edu
- Password: P@ssword
- Confirm Password: P@ssword
- Primary Project: XYZ Company
- Role: \_member\_
- Enabled:

The 'Create User' button is highlighted in red.

3. The Create User wizard should open. **Enter** the User Name **student**, the description and email blocks are optional, and **enter** the password **P@ssword** twice. **Select** the **dropdown menu** for the Primary Project and **Click** on **XYZ Company**

User Name	student
Description	Optional
Email	student@tridenttech.edu
Password	P@ssword
Primary project	XYZ Company
Role	_member_
Enabled	Checked by default

### Role

A personality that a user assumes to perform a specific set of operations. A role includes a set of rights and privileges. A user assuming that role inherits those rights and privileges

## Module 2: Manage Projects, Users and Quotas

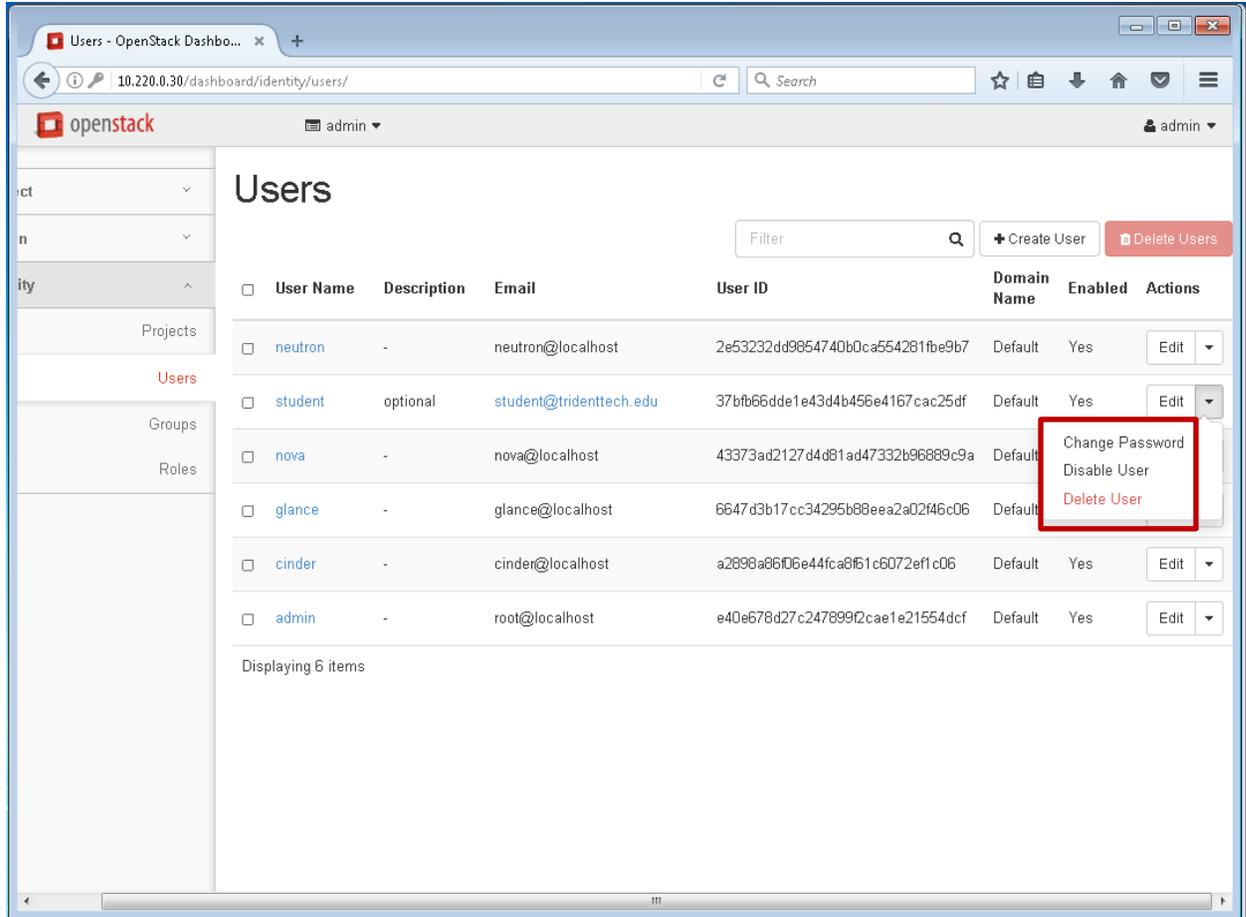
The screenshot shows the OpenStack Identity Users management interface. The page title is "Users" and it includes a search bar, a "Filter" input, and buttons for "+ Create User" and "Delete". The user list is as follows:

<input type="checkbox"/>	User Name	Description	Email	User ID	Domain Name	Enabled	Action
<input type="checkbox"/>	neutron	-	neutron@localhost	2e53232dd9854740b0ca554281f9e9b7	Default	Yes	Ed
<input type="checkbox"/>	student	optional	student@tridenttech.edu	37fb66dde1e43d4b456e4167cac25df	Default	Yes	Ed
<input type="checkbox"/>	nova	-	nova@localhost	43373ad2127d4d81ad47332b96889c9a	Default	Yes	Ed
<input type="checkbox"/>	glance	-	glance@localhost	6647d3b17cc34295b88eea2a02f46c06	Default	Yes	Ed
<input type="checkbox"/>	cinder	-	cinder@localhost	a2898a86f06e44fca8f61c6072ef1c06	Default	Yes	Ed
<input type="checkbox"/>	admin	-	root@localhost	e40e678d27c247899f2cae1e21554dcf	Default	Yes	Ed

Displaying 6 items

4. The user, **student**, should appear on the list

## Module 2: Manage Projects, Users and Quotas



The screenshot displays the OpenStack Users management interface. The page title is "Users" and the URL is "10.220.0.30/dashboard/identity/users/". The interface includes a sidebar with navigation options like "Projects", "Users", "Groups", and "Roles". The main content area shows a table of users with the following data:

User Name	Description	Email	User ID	Domain Name	Enabled	Actions
<a href="#">neutron</a>	-	neutron@localhost	2e53232dd9854740b0ca554281f9b7	Default	Yes	Edit
<a href="#">student</a>	optional	student@tridenttech.edu	37bf66dde1e43d4b456e4167cac25df	Default	Yes	Edit
<a href="#">nova</a>	-	nova@localhost	43373ad2127d4d81ad47332b96889c9a	Default	Yes	Edit
<a href="#">glance</a>	-	glance@localhost	6647d3b17cc34295b88eea2a02f46c06	Default	Yes	Edit
<a href="#">cinder</a>	-	cinder@localhost	a2698a86f06e44fca8f61c6072ef1c06	Default	Yes	Edit
<a href="#">admin</a>	-	root@localhost	e40e678d27c247899f2cae1e21554dcf	Default	Yes	Edit

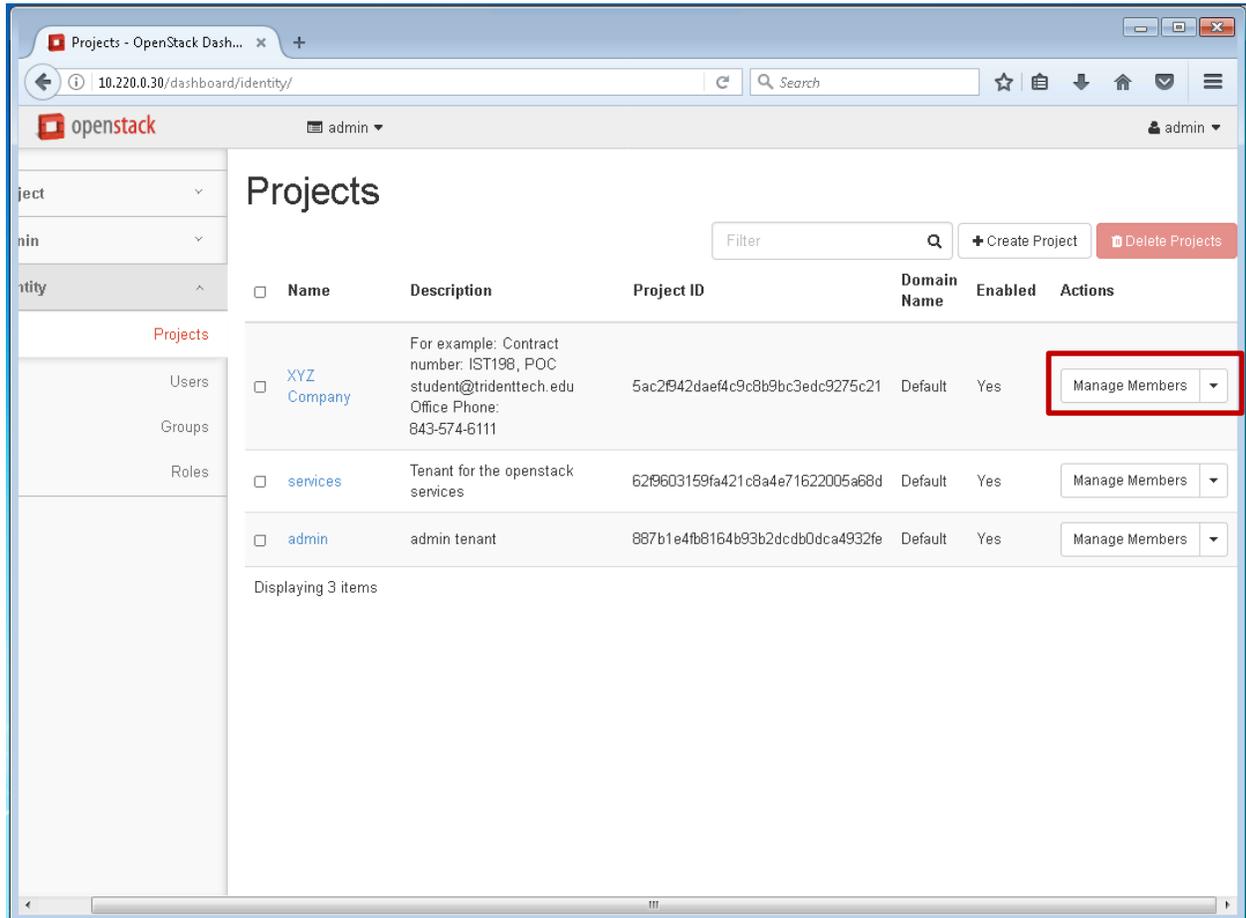
The "student" user's "Actions" dropdown menu is open, showing the following options: "Change Password", "Disable User", and "Delete User". A red box highlights the "Change Password" option.

- Note: Administrators would also use this pane to change a user's password. The administrator would select the dropdown menu, next to Edit, and chose Change Password

Note: The user name student, as with the other usernames, is a hyperlink, which opens another pane with additional options, such as disable user.

Continue to Lab 5

## Lab 5: Manage OpenStack Quotas



1. If you are not already there, return to the Projects pane under the Identity tab. **Select the dropdown menu adjacent to Manager Members**

### Quotas

In Compute and Block Storage, the ability to set resource limits on a per-project basis.

## Module 2: Manage Projects, Users and Quotas

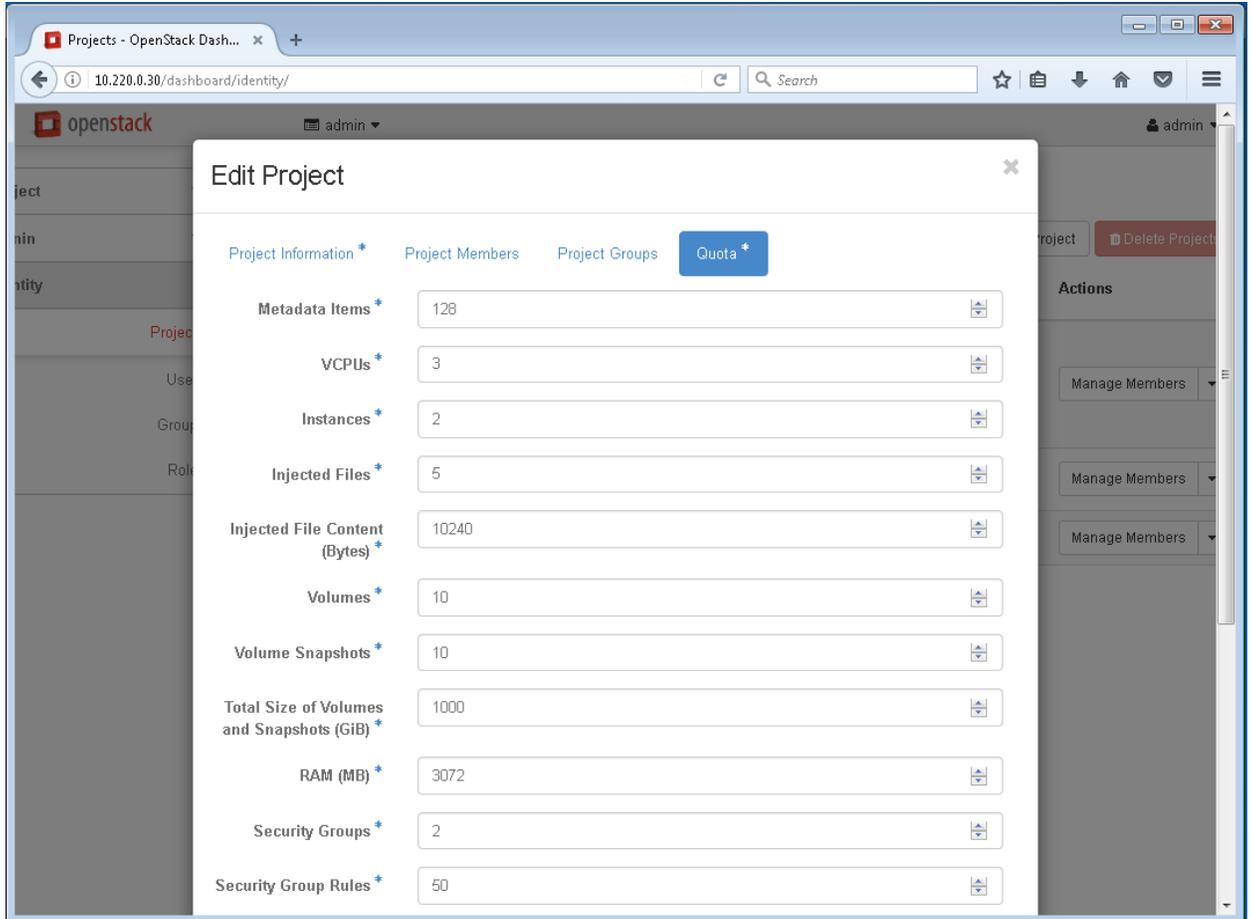
The screenshot shows the OpenStack dashboard interface. The browser address bar displays `10.220.0.30/dashboard/identity/`. The page title is "Projects". On the left sidebar, the "Projects" menu item is selected. The main content area features a table with columns: Name, Description, Project ID, Domain Name, Enabled, and Actions. Three projects are listed: "XYZ Company", "services", and "admin". The "XYZ Company" project is selected, and its "Actions" dropdown menu is open, showing options: "Manage Members", "Modify Groups", "Edit Project", "View Usage", "Modify Quotas" (highlighted with a red box), and "Delete Project".

<input type="checkbox"/>	Name	Description	Project ID	Domain Name	Enabled	Actions
<input type="checkbox"/>	XYZ Company	For example: Contract number: IST198, POC student@tridenttech.edu Office Phone: 843-574-6111	5ac2f942daef4c9c8b9bc3edc9275c21	Default	Yes	Manage Members Modify Groups Edit Project View Usage Modify Quotas Delete Project
<input type="checkbox"/>	services	Tenant for the openstack services	62f9603159fa421c8a4e71622005a68d	Default	Yes	
<input type="checkbox"/>	admin	admin tenant	887b1e4fb8164b93b2dcd0dca4932fe	Default	Yes	

### 2. Select Modify Quotas



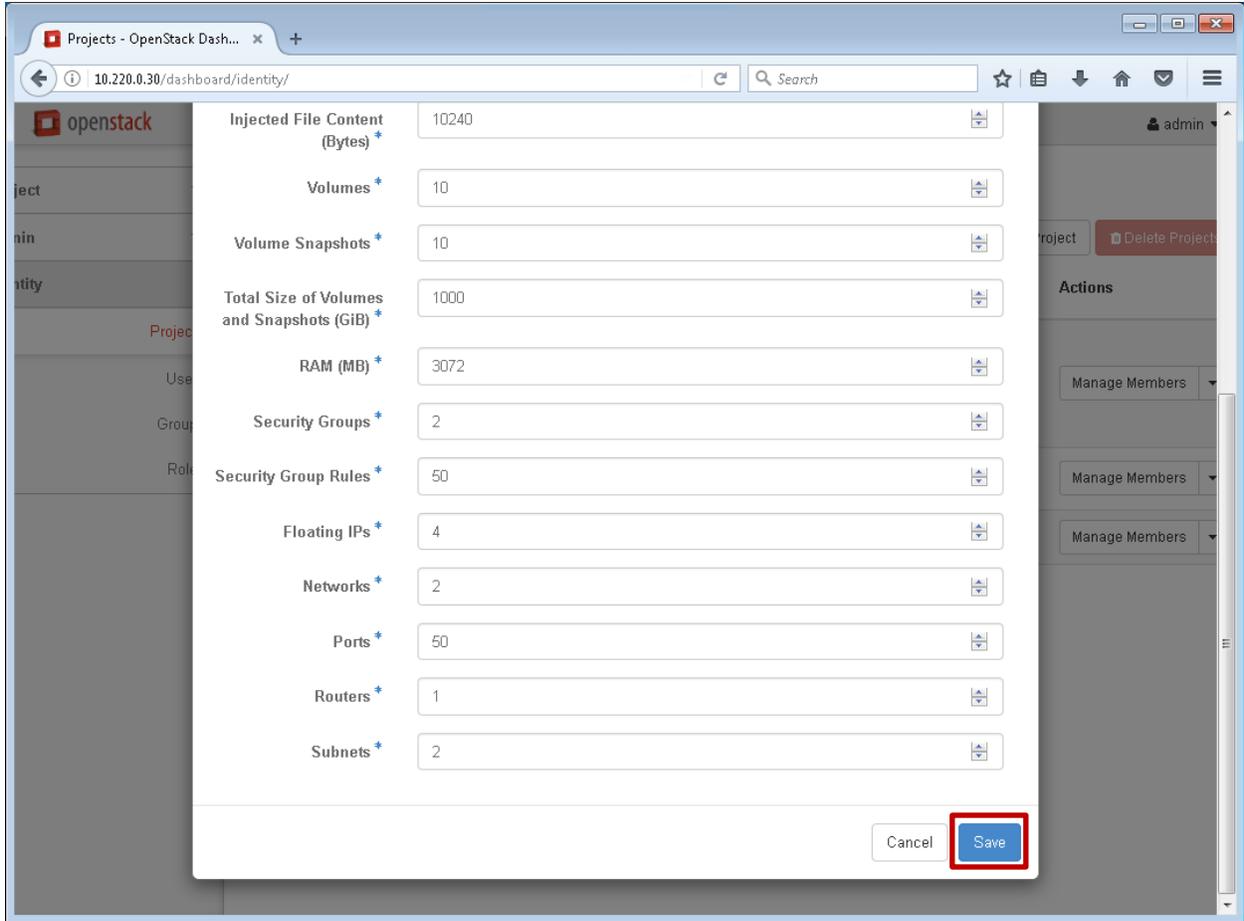
## Module 2: Manage Projects, Users and Quotas



3. The Quota page enables granular control of resources available to each project. For this deployment, we will modify the following items; VCPUs, Instances, RAM, Security Groups, Security Group Rules, Floating IPs, Networks, Routers and Subnets. The remaining items will be addressed in advanced labs. **Modify quotas** as listed in the table below

<b>VCPUs:</b>	<b>3</b>
<b>Instances:</b>	<b>2</b>
<b>RAM (MB):</b>	<b>3072</b>
<b>Security Groups:</b>	<b>2</b>
<b>Security Group Rules:</b>	<b>50</b>
<b>Floating IPs:</b>	<b>4</b>
<b>Networks:</b>	<b>2</b>
<b>Routers:</b>	<b>1</b>
<b>Subnets:</b>	<b>2</b>

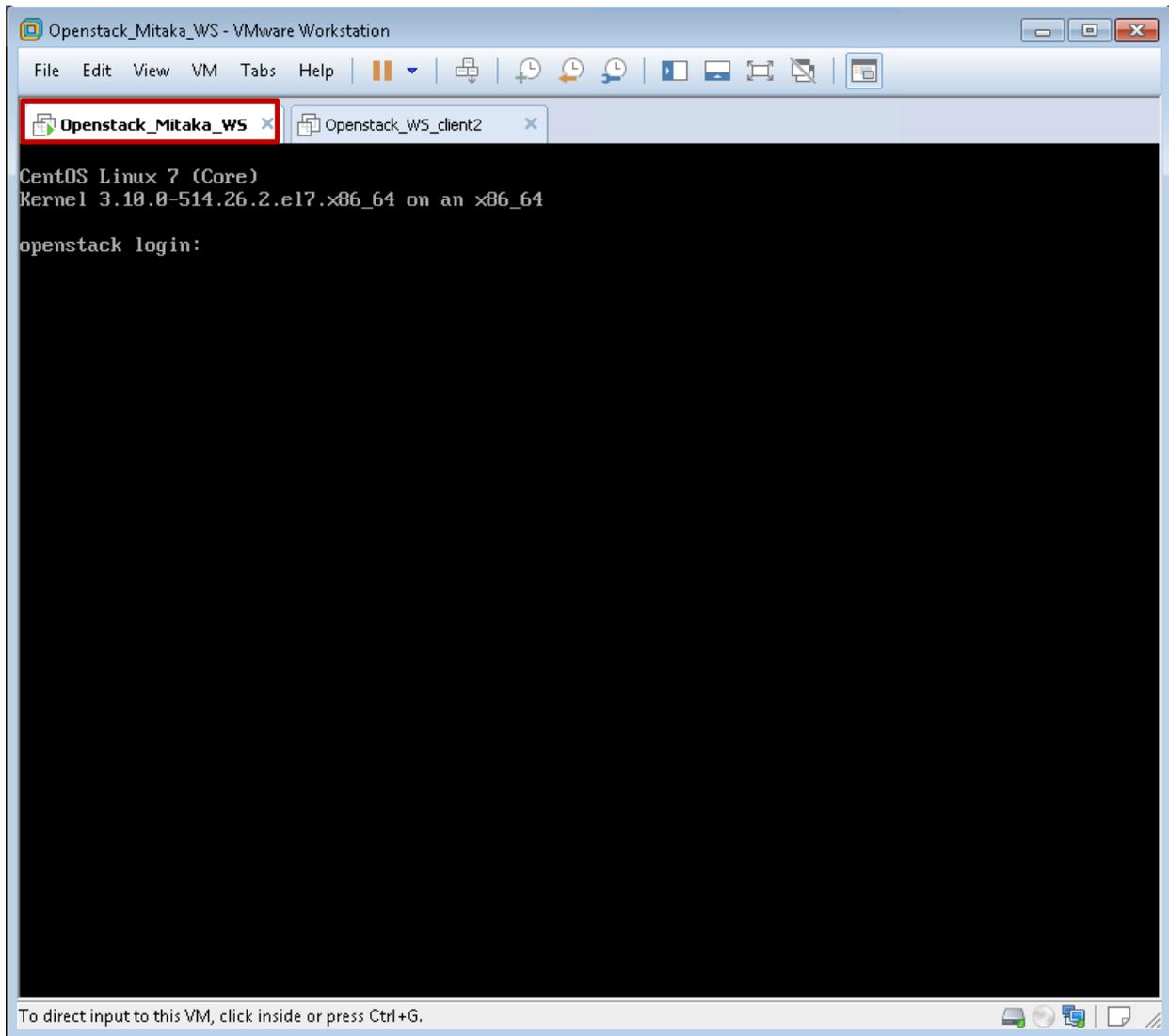
## Module 2: Manage Projects, Users and Quotas



### 4. Click Save

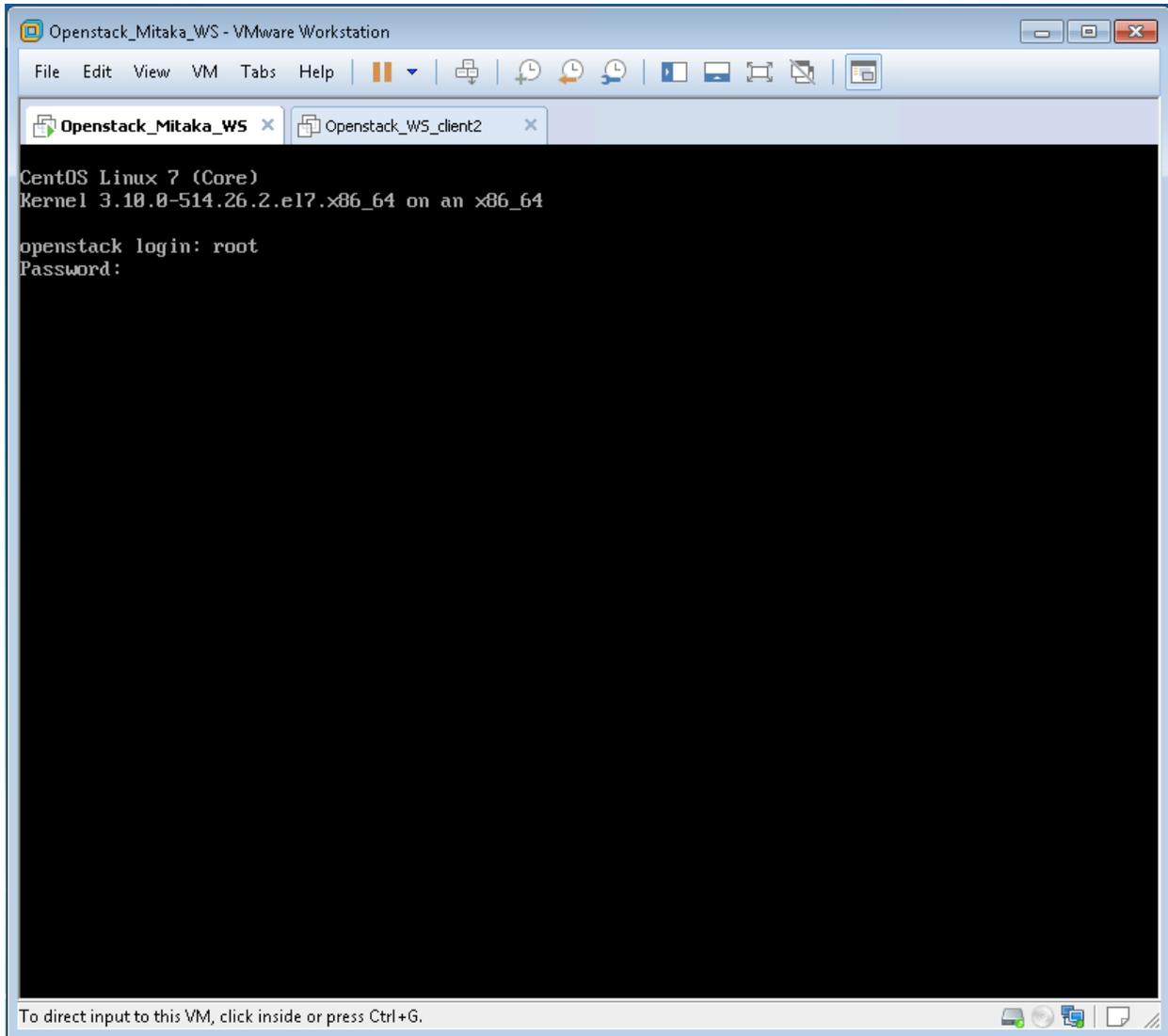
Continue to the grading script

## Run the grade script



1. Return to the VMware Workstation and **Click on Openstack\_Mitaka\_WS**

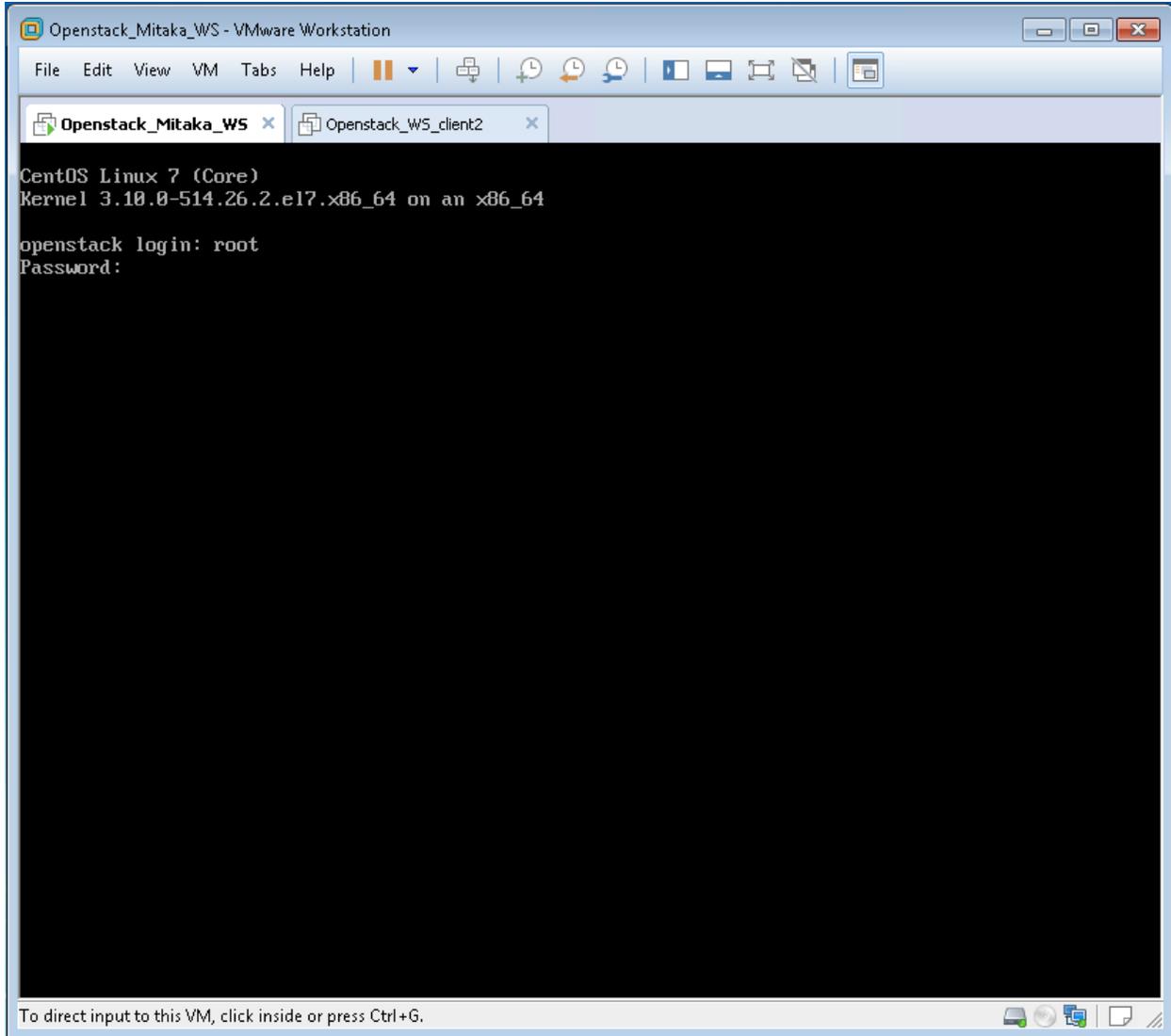
## Module 2: Manage Projects, Users and Quotas



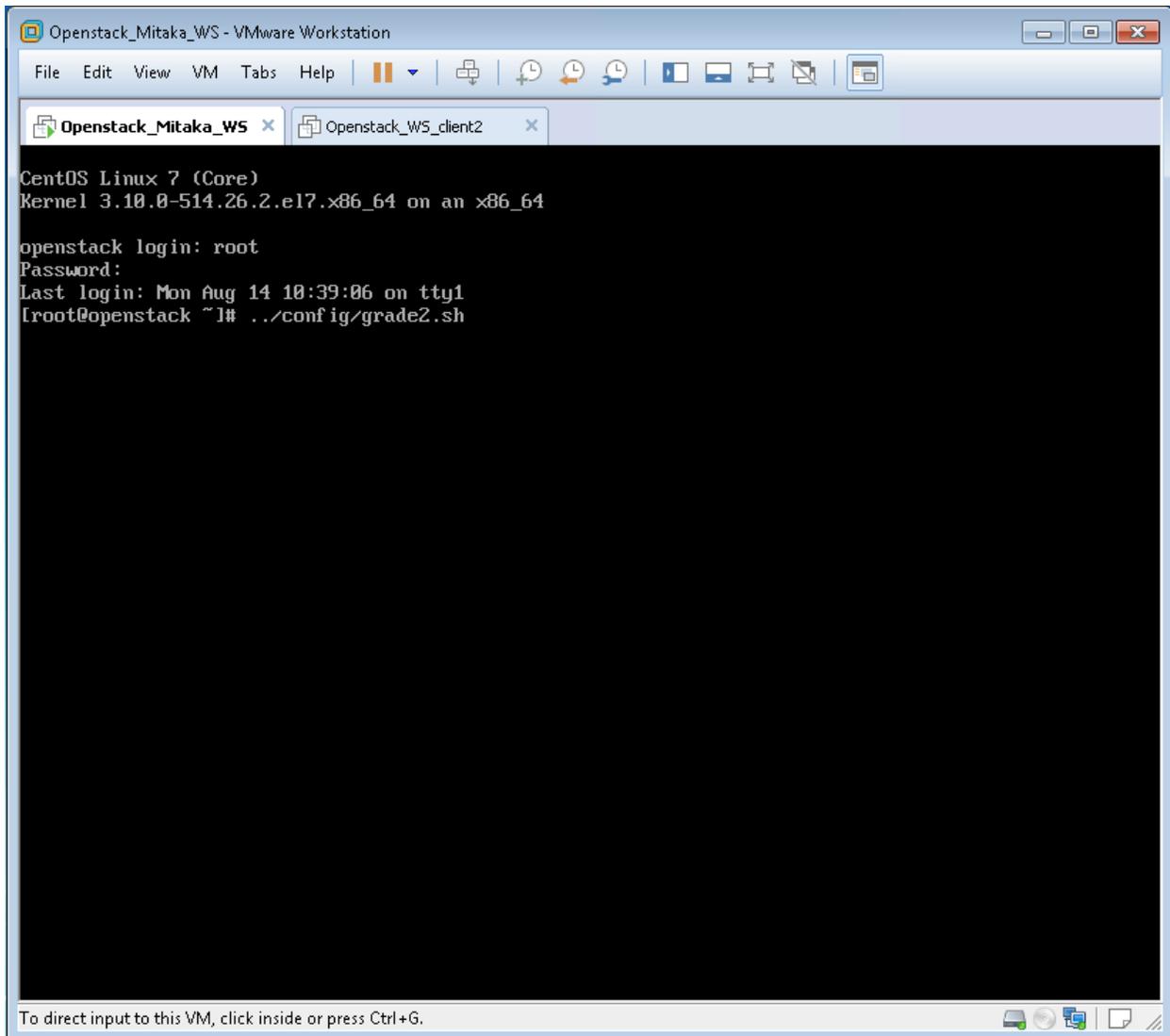
2. Log in as **root** with the Password: **P@ssword**

Note: The password is NOT visible as you type it

## Module 2: Manage Projects, Users and Quotas

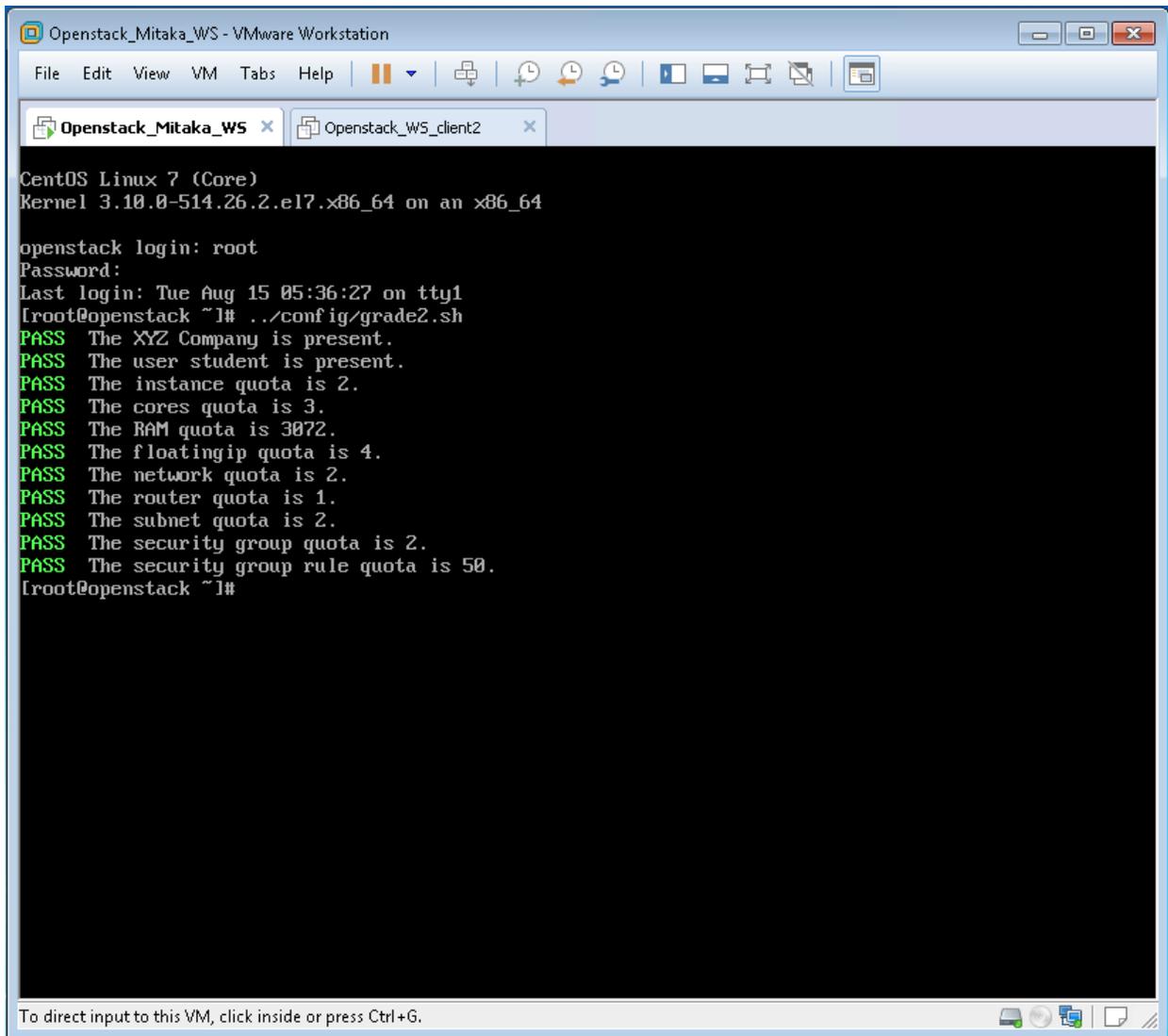


3. After successfully logging in as root you should see this screen. Continue to next page



4. Enter the command; **`../config/grade2.sh`** and **press Enter** to execute the built-in Module 2 grade script. As shown in the screen capture above.

Note: The two periods at the beginning of the command, shown above, is a relative path to the script. You could also use the absolute path by first changing directory (**cd**) to the **/config** directory and run the command as **`./grade2.sh`**



```
Openstack_Mitaka_WS - VMware Workstation
File Edit View VM Tabs Help
Openstack_Mitaka_WS x Openstack_WS_client2 x
CentOS Linux 7 (Core)
Kernel 3.10.0-514.26.2.el7.x86_64 on an x86_64

openstack login: root
Password:
Last login: Tue Aug 15 05:36:27 on tty1
[root@openstack ~]# ./config/grade2.sh
PASS The XYZ Company is present.
PASS The user student is present.
PASS The instance quota is 2.
PASS The cores quota is 3.
PASS The RAM quota is 3072.
PASS The floatingip quota is 4.
PASS The network quota is 2.
PASS The router quota is 1.
PASS The subnet quota is 2.
PASS The security group quota is 2.
PASS The security group rule quota is 50.
[root@openstack ~]#
```

To direct input to this VM, click inside or press Ctrl+G.

5. The grading script will produce an output with **PASS** or **FAIL** for each of the categories, similar to the screen capture above. If you receive a **FAIL** on one or more of the categories, you can go back and fix the issue and run the grading script again, or you can revert the Openstack\_Mitaka\_WS VM to the base snapshot and start over again.

This completes Module 2, continue to conclusion



## Conclusion:

You have created the project, added a user and modified the project quotas. Your next task will be to create the networks and add a router to connect the networks.

