

OpenStack Labs

Lab 02: Organizing People and Resources

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Introduction

In this lab, you will manage projects, users, and roles.

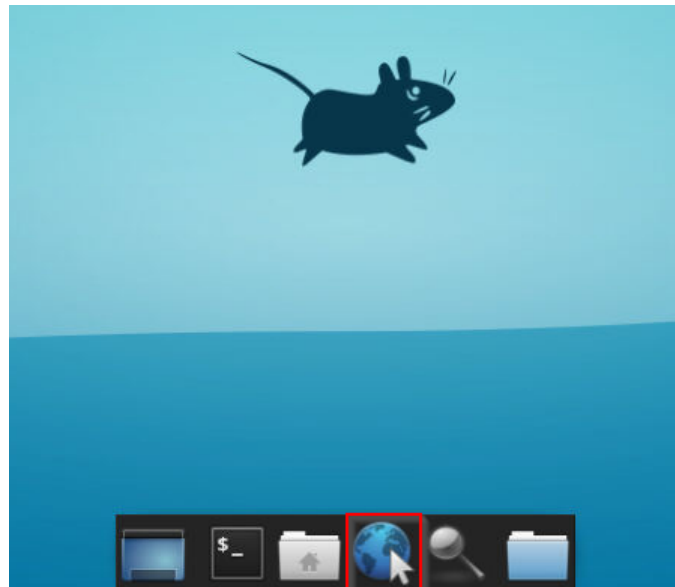
Objectives

- Create and delete projects using the *Horizon Dashboard*.
- Create and delete projects using the *OpenStack Unified CLI*.
- Manage users using the *Horizon Dashboard*

1 Create and Delete Projects Using the Horizon Dashboard

In this task, you will create and delete projects using the *Horizon Dashboard*.

1. Navigate to **EZSetup**→**Workspaces**→**[Lab Name]**.
2. Log into the **workstation** machine.
 - (a) Copy the password under *Password*.
 - (b) Click **Open** under *VNC Connection*.
 - (c) Paste the password into the *Password* field.
3. A popup window will you to choose the panel setup for the first startup. Choose **Use default config**. Otherwise, there will be no taskbar or panel with convenient shortcuts for the terminal or web browser.
4. If the desktop screen is larger than the window, select the options on the left-hand side of the screen, click the gear icon to go to the settings menu, and under *Scaling Mode*, select **Remote Resizing**.
5. Open the web browser.




6. Enter the IP address of the **devstack** machine (**192.168.20.0**) into the address bar.



Tip

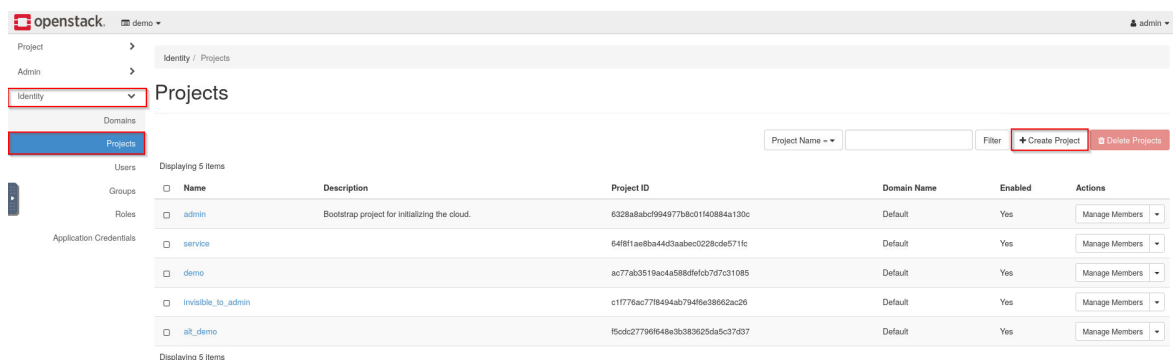
The IP address of each machine of the lab can be found by viewing the EZSetup lab page. Simply click the link between the machine and another object on the network (normally the cloud icon) to find the IP address for that interface.

7. Log into the OpenStack Horizon Dashboard. The username is **admin** and the password is **secret**.



The image shows the OpenStack login page. At the top is the OpenStack logo. Below it is the text "Log in". There are two input fields: "User Name" with the text "admin" and "Password" with masked characters. A "Sign In" button is at the bottom right.

8. Create a project named **dev**. First, navigate to **Identity**→**Projects**, then click on **Create Project**.



The image shows the OpenStack Identity Projects page. The left sidebar has a menu with "Identity" selected and "Projects" highlighted. The main content area shows a table of projects. At the top right, there are buttons for "Create Project" and "Delete Projects".

Name	Description	Project ID	Domain Name	Enabled	Actions
admin	Bootstrap project for initializing the cloud.	6328a8abcf994977b8c01140884a130c	Default	Yes	Manage Members
service		64f8f1ae8ba443aabc0228cde671fc	Default	Yes	Manage Members
demo		ac77ab3519ac4a588dfc7d7c31085	Default	Yes	Manage Members
invisible_to_admin		c1f776ac778494ab7949e38662ac26	Default	Yes	Manage Members
alt_demo		f5cd27796f648e3b383625da5c37d37	Default	Yes	Manage Members

9. Enter **dev** in the *Name* field and **Dev Project** in the *Description* field. Leave the **Enabled** check box selected, then click on **Create Project**.

Create Project

Project Information * Project Members Project Groups

Domain ID default

Domain Name Default

Name * dev

Description Dev Project

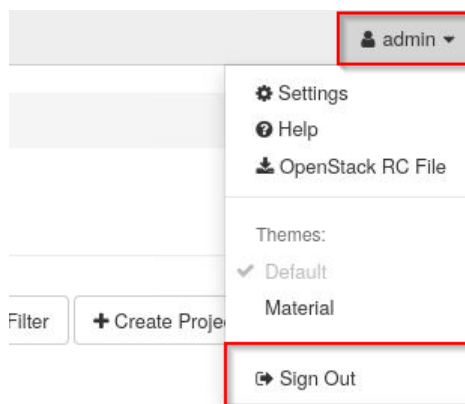
Enabled ☒

Cancel Create Project

Note

Notice the **dev** project now appears in the *Horizon Dashboard*.

10. Log out of the Horizon Dashboard by clicking on admin at the top right and selecting **Sign Out**.



11. Close the web browser and continue to the next task.

2 Create and Delete Projects Using the OpenStack Unified CLI

In this task, you will use the *OpenStack Unified CLI* to create a project from the command line.

1. Open a terminal, either by right-clicking the desktop and selecting **Open Terminal Here**, by clicking the terminal icon in the icon bar at the bottom of the screen, or by selecting **Applications** at the top left of the screen, then selecting **Terminal Emulator**.



2. Ensure you are in the home directory.

```
ubuntu@workstation:/$ cd ~
```

```
ubuntu@workstation:/$ cd ~  
ubuntu@workstation:~$
```

3. Use the source command with the **keystonerc-admin** argument to access OpenStack as the admin.

```
ubuntu@workstation:~$ source ~/keystonerc-admin
```

```
ubuntu@workstation:~$ source keystonerc-admin  
ubuntu@workstation:~$
```


4. Enter the command below to create a project named **testing**.

```
ubuntu@workstation:~$ openstack project create \  
> --description testing \  
> --enable testing
```

```
ubuntu@workstation:~$ openstack project create \  
> --description testing \  
> --enable testing  
+-----+-----+  
| Field      | Value                                     |  
+-----+-----+  
| description | testing                                 |  
| domain_id  | default                                |  
| enabled     | True                                   |  
| id          | df6f709eb9d44ce88271c4e666b2e6f4      |  
| is_domain   | False                                  |  
| name        | testing                                |  
| options     | {}                                     |  
| parent_id   | default                                |  
| tags        | []                                     |  
+-----+-----+  
ubuntu@workstation:~$
```

Tip

When typing the command make sure there is a space between create and the **texttt**, and press **Enter** to get the > and continue typing the rest of the command.

5. Enter the command below to verify the project has been created.

```
ubuntu@workstation:~$ openstack project list
```

```
ubuntu@workstation:~$ openstack project list
+-----+-----+
| ID                | Name                |
+-----+-----+
| 6328a8abcf994977b8c01f40884a130c | admin               |
| 64f8f1ae8ba44d3aabec0228cde571fc | service             |
| 7720ff4082c3472b93ffca8d0fbf3dec | dev                 |
| ac77ab3519ac4a588dfefcb7d7c31085 | demo                |
| c1f776ac77f8494ab794f6e38662ac26 | invisible_to_admin  |
| df6f709eb9d44ce88271c4e666b2e6f4 | testing             |
| f5cdc27796f648e3b383625da5c37d37 | alt_demo            |
+-----+-----+
ubuntu@workstation:~$
```

6. Delete the **testing** project by entering the command below.

```
ubuntu@workstation:~$ openstack project delete testing
```

```
ubuntu@workstation:~$ openstack project delete testing
ubuntu@workstation:~$
```

7. Verify the **testing** project has been deleted by listing the projects again and noting that **testing** no longer appears.

```
ubuntu@workstation:~$ openstack project list
```

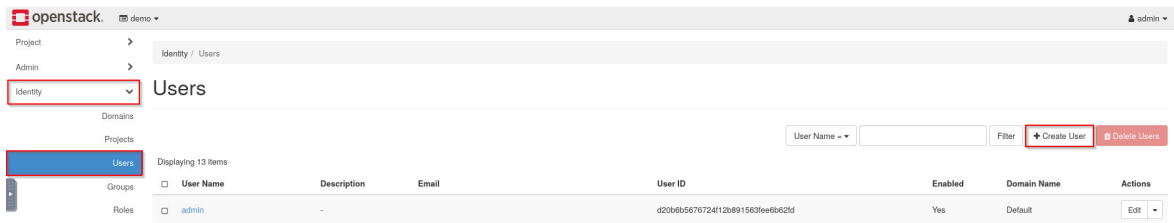
```
ubuntu@workstation:~$ openstack project list
+-----+-----+
| ID                | Name                |
+-----+-----+
| 6328a8abcf994977b8c01f40884a130c | admin               |
| 64f8f1ae8ba44d3aabec0228cde571fc | service             |
| 7720ff4082c3472b93ffca8d0fbf3dec | dev                 |
| ac77ab3519ac4a588dfefcb7d7c31085 | demo                |
| c1f776ac77f8494ab794f6e38662ac26 | invisible_to_admin  |
| f5cdc27796f648e3b383625da5c37d37 | alt_demo            |
+-----+-----+
ubuntu@workstation:~$
```

8. Leave the terminal window open and continue to the next task.

3 Managing Users Using the Horizon Dashboard

In this task, you will use the *Horizon Dashboard* to manage users.

1. Open the web browser, navigate to the OpenStack login page at **http://192.168.1.20**, and log in with username **admin** and password **secret** as before. In the following steps, you will create users named **cloud-dev**, **cloud-test1**, and **cloud-test2**; set all of these account passwords to **secret**; and add these accounts to the **dev** project.
2. First, navigate to **Identity**→**Users** and click on **Create User**.



3. In the *Create User* dialog box, enter **cloud-dev** in the *User Name* field, and **secret** in the *Password* and *Confirm Password* fields.

Create User

Domain ID

default

Domain Name

Default

User Name *

cloud-dev

Description

Email

Password *

●●●●●●

Confirm Password *

●●●●●●

Description:

Create a new user and set related properties including the Primary Project and Role.

Tip

You will need to use the scroll bar on the right side of the dialog box to scroll down for more fields.

- After scrolling down, select the **dev** project from the *Primary Project* drop down. Leave the *Role* set to **member**, and leave the **Enabled** check box selected. Click on **Create User**.

Password *

•••••

Confirm Password *

•••••

Primary Project

dev

Role

member

☒ **Enabled**

☐ **Lock password**

Cancel **Create User**

- Repeat steps 2 through 4 to create the **cloud-test1** and **cloud-test2** user accounts.
- Delete the **cloud-test1** user account. On the *Users* tab, select the **cloud-test1** user account checkbox and click on **Delete Users** and then confirm the deletion in the dialog box.

Users

Displaying 16 items

User Name	Description	Email	User ID	Enabled	Domain Name	Actions
admin	-		020660567872471268910630e0b62d	Yes	Default	Edit
demo	-	demo@example.com	62277e030749309046b40305f6	Yes	Default	Edit
demo_reader	-	demo_reader@example.com	636756218104300319a11c19d8b73	Yes	Default	Edit
alt_demo	-	alt_demo@example.com	8849a2a3a334831a0001d39d79d503	Yes	Default	Edit
alt_demo_member	-	alt_demo_member@example.com	fa47963aa5426b88571e030ac57	Yes	Default	Edit
alt_demo_reader	-	alt_demo_reader@example.com	83926a3609f6fb124640f29a6437	Yes	Default	Edit
system_member	-	system_member@example.com	90a437a732894d7b8822054c9ab03	Yes	Default	Edit
system_reader	-	system_reader@example.com	7d305ca029a030b0f79a2c17a2b48	Yes	Default	Edit
nova	-		f1a0d1611d94a5a8d4e4b68903896	Yes	Default	Edit
glance	-		5b0d4e0cb7e4899950c7e95053205	Yes	Default	Edit
cinder	-		0a377d6a2a6e48030cd85a0143d7ee	Yes	Default	Edit
neutron	-		436031a6f6426a0302291788405d48	Yes	Default	Edit
placement	-		c074547a42b46aa05c5ab744db612b	Yes	Default	Edit
cloud-dev	-		47886c191f74572b5191a3b7a7b72	Yes	Default	Edit
<input checked="" type="checkbox"/> cloud-test1	-		205a48f0a4242235270771db0c8d60	Yes	Default	Edit

- Disable the **cloud-test2** user account. On the *Users* tab, select **Disable User** under the *Actions* column for the **cloud-test2** user account entry.

Users

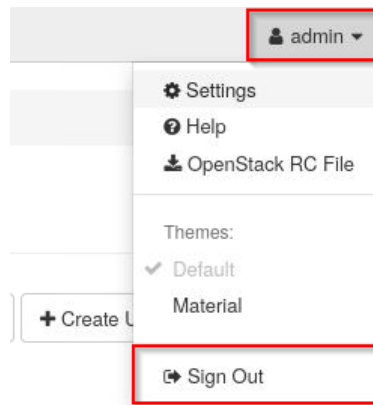
Displaying 15 items

User Name: Filter [+ Create User](#) [Delete User](#)

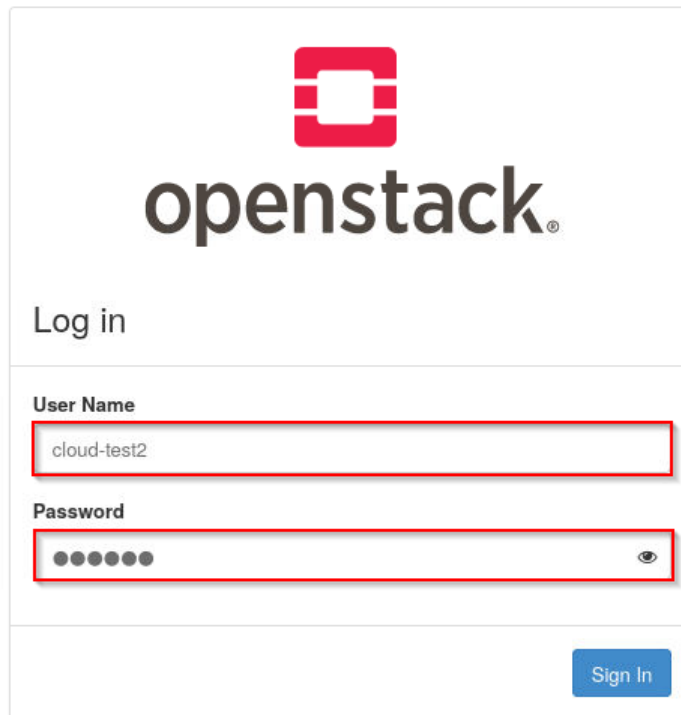
User Name	Description	Email	User ID	Enabled	Domain Name	Actions
admin	-	-	d205d9557672d712d8915639e95d21d	Yes	Default	Edit
demo	-	demo@example.com	6227ae8920749399046843285d9	Yes	Default	Edit
demo_reader	-	demo_reader@example.com	636759a2181043d9219a11c19cd8873	Yes	Default	Edit
alt_demo	-	alt_demo@example.com	88d49a2a383481a001d39cd79d503	Yes	Default	Edit
alt_demo_member	-	alt_demo_member@example.com	faa47663a5d542b6885871e838a257	Yes	Default	Edit
alt_demo_reader	-	alt_demo_reader@example.com	83926da30909f8b12464d029a437	Yes	Default	Edit
system_member	-	system_member@example.com	90a4379732894d78d8225504cdab83	Yes	Default	Edit
system_reader	-	system_reader@example.com	7d305ca821a3d08a8f79a3e179d848	Yes	Default	Edit
nova	-	-	f1acd1611d94a5a54a4a58983896	Yes	Default	Edit
glance	-	-	58d4eecd7e9489995d67e95852295	Yes	Default	Edit
cinder	-	-	0ec377d6a2a0e4803cd85a49143d7ee	Yes	Default	Edit
neutron	-	-	4360031a69f42b932291784d3d68	Yes	Default	Edit
placement	-	-	c07454742064baa355fab744d8d12b	Yes	Default	Edit
cloud-dev	-	-	a738619f17457265191fa3b7a7b72	Yes	Default	Edit
cloud-test2	-	-	85c887014884a4119d5896a78403a2	Yes	Default	Edit Change Password Delete User

Displaying 15 items

- Log out of the dashboard as **admin**. Select the *admin* drop down at the top right and click on **Sign Out**.



- At the Horizon Dashboard screen, attempt to log in as **cloud-test2** with the password **secret**.



The image shows the OpenStack login interface. At the top is the OpenStack logo. Below it is the text "Log in". There are two input fields: "User Name" with the value "cloud-test2" and "Password" with masked characters. A "Sign In" button is at the bottom right.

Note

Notice the user account is disabled as intended.

- Log back into the dashboard as **admin** and re-enable the **cloud-test2** user. Navigate to **Identity**→**Users**. Click on the drop down in the **Actions** column in the row for **cloud-test2** and select **Enable User**.

Users

Displaying 15 items

User Name	Description	Email	User ID	Enabled	Domain Name	Actions
admin	-	-	d206d5676724712b8915635e6b62d	Yes	Default	Edit
demo	-	demo@example.com	1227ae9207489390492b40265cb	Yes	Default	Edit
demo_reader	-	demo_reader@example.com	636759218104388319a11c19c8b73	Yes	Default	Edit
alt_demo	-	alt_demo@example.com	88b49a2a30a4831a001059d79a503	Yes	Default	Edit
alt_demo_member	-	alt_demo_member@example.com	1aa47963a55a3b8885871e893ba57	Yes	Default	Edit
alt_demo_reader	-	alt_demo_reader@example.com	83926dc3609f48b12464052a6437	Yes	Default	Edit
system_member	-	system_member@example.com	90a437a73289a47b88220504c9b83	Yes	Default	Edit
system_reader	-	system_reader@example.com	7d305ca020a4059d479a2e17c2b68	Yes	Default	Edit
nova	-	-	1racd1611d94a9a9a5d6a5983996	Yes	Default	Edit
glance	-	-	58c4ecb7e48999567e95e05225	Yes	Default	Edit
cinder	-	-	0a3779a2b3a4803bc8864a9143f7ee	Yes	Default	Edit
neutron	-	-	4366031a6f42b6925291784385a8	Yes	Default	Edit
placement	-	-	c07a547a29b4a8355ab744b412b	Yes	Default	Edit
cloud-dev	-	-	e7386198174572b51919a3b7a872	Yes	Default	Edit
cloud-test2	-	-	85c86701e884a419b5565a784503a2	No	Default	Edit

Displaying 15 items

Change Password
Enable User
Delete User

- Select the same drop down, but this time click on **Change Password**.

Users

Displaying 15 items

User Name: Filter [Create User](#) [Delete User](#)

User Name	Description	Email	User ID	Enabled	Domain Name	Actions
admin	-	-	c209555767241128915521ee9b2d1d	Yes	Default	Edit
demo	-	demo@example.com	5227a8920748939046b40285cb	Yes	Default	Edit
demo_reader	-	demo_reader@example.com	536759a2181043b3319a11c19c58b73	Yes	Default	Edit
alt_demo	-	alt_demo@example.com	8849a32a5304851a051d39a279a503	Yes	Default	Edit
alt_demo_member	-	alt_demo_member@example.com	1aa47963ae59a3b889871e8939a357	Yes	Default	Edit
alt_demo_reader	-	alt_demo_reader@example.com	83926dc90948f512464029a5437	Yes	Default	Edit
system_member	-	system_member@example.com	90a437a73229a47185822554c9ab33	Yes	Default	Edit
system_reader	-	system_reader@example.com	7d305ca22a3a4056a0f79a2b17a2b68	Yes	Default	Edit
nova	-	-	11ac01811f94a3a55a5a5a5a5a5a5a5a	Yes	Default	Edit
glance	-	-	58c44cc07e94899f2b67e95b5225	Yes	Default	Edit
cinder	-	-	0a3770a22a3a4056a0f79a2b17a2b68	Yes	Default	Edit
neutron	-	-	436001a6f42b302291784235a8	Yes	Default	Edit
placement	-	-	c07a547a429a4a355a5a5a5a5a5a5a5a	Yes	Default	Edit
cloud-dev	-	-	a7396a1981f74572b5191a3b37a7872	Yes	Default	Edit
cloud-test2	-	-	85c8670148564a419b5859a7a4532a2	Yes	Default	Edit

Displaying 15 items

[Change Password](#)
[Create User](#)
[Delete User](#)

- Change the password for **cloud-test2** to **password**. Enter **password** into the *Password* and *Confirm Password* fields, then click on **Save**.

Change Password

Password

● ● ● ● ● ● ● ●

Confirm Password

● ● ● ● ● ● ● ●

User Name

cloud-test2

Description:
Change user's password. We highly recommend you create a strong one.

[Cancel](#) [Save](#)

- Log out of the dashboard and log back in as **cloud-test2** with the password **password** to verify the password has been changed.
- Log out of the dashboard and close the web browser. Continue to the next task.

4 Managing Users Using the OpenStack Unified CLI

In this task, you will manage users using the *OpenStack Unified CLI*.

1. Open a terminal if you do not already have one running, and navigate to the home directory.
2. Source the credential for **admin** using the **keystonerc-admin** file by entering the command below.

```
ubuntu@workstation:~$ source ~/keystonerc-admin
```

```
ubuntu@workstation:~$ source ~/keystonerc-admin
ubuntu@workstation:~$
```

3. Create the **cloud-test3** user as a member of **dev** with a password of **secret** and an email address of **ubuntu@workstation.lab.example.com** using the command below.

```
ubuntu@workstation:~$ openstack user create \
> --project dev \
> --password secret \
> --email ubuntu@workstation.lab.example.com \
> cloud-test3
```

```
ubuntu@workstation:~$ openstack user create \
> --project dev \
> --password secret \
> --email ubuntu@workstation.lab.example.com \
> cloud-test3
+-----+-----+
| Field | Value |
+-----+-----+
| default_project_id | 7720ff4082c3472b93ffca8d0fbf3dec |
| domain_id | default |
| email | ubuntu@workstation.lab.example.com |
| enabled | True |
| id | 18d19faba6b6456691b35cd88630173c |
| name | cloud-test3 |
| options | {} |
| password_expires_at | None |
+-----+-----+
ubuntu@workstation:~$
```

Tip

When typing the command, make sure there is a space between create and the \ character, and press **Enter** to get the > and continue typing the rest of the command.

4. Verify the user was created using the command below.

```
ubuntu@workstation:~$ openstack user list
```

```
ubuntu@workstation:~$ openstack user list
+-----+-----+
| ID                                         | Name |
+-----+-----+
| d20b6b5676724f12b891563fee6b62fd       | admin |
| b22f7ae892074693890f46bb40285cfb       | demo  |
| 63675fa2181043d0b319a11c19c68b73       | demo_reader |
| 88b49a32a8304831a0001d39cd79a503       | alt_demo |
| faa47663ea5d42bb8885871e8938ac57       | alt_demo_member |
| 83926de3609f4f8fb12464bf029a6437       | alt_demo_reader |
| 90a437a732894d7db88220504c9a8cb3       | system_member |
| 7d305ca820a0400b9df79e2e17b2fb88       | system_reader |
| f1acd1611df94a6a9dd4ebb598f3f696       | nova   |
| 58cd4eccb7e948f99f5b67e95b6522f5       | glance |
| 0e377dea2a0e4803bccb864a9143d7ee       | cinder |
| 4366031a66ff42bb93f229178842dda8       | neutron |
| c07a547c429b4baa835c5ab744db612b       | placement |
| e7386c19f1f74572b5191faa3b7af872       | cloud-dev |
| 85c9870146b64c419fd569da784503e2       | cloud-test2 |
| 18d19faba6b6456691b35cd88630173c       | cloud-test3 |
+-----+-----+
ubuntu@workstation:~$
```

5. The **cloud-test3** user will also need to be assigned a role to a project before being able to perform any actions. Assign a role with the command below.

```
openstack role add \
> --project dev \
> --user cloud-test3 \
> member
```

```
ubuntu@workstation:~$ openstack role add \
> --project dev \
> --user cloud-test3 \
> member
ubuntu@workstation:~$
```

- Copy the existing `~/keystonerc-admin` file to `~/keystonerc-cloud-dev` by entering the command below.

```
ubuntu@workstation:~$ cp ~/keystonerc-admin ~/keystonerc-cloud-dev
```

```
ubuntu@workstation:~$ cp ~/keystonerc-admin ~/keystonerc-cloud-dev
ubuntu@workstation:~$
```

- Edit the `~/keystonerc-cloud-dev` file and modify the `OS_USERNAME`, `OS_PASSWORD`, and `OS_PROJECT_NAME` using the `nano` command. Modify the file so the content matches below. When you are finished, press **CTRL+X**, then **Y** to accept the file changes. Press **Enter** to save and exit `nano`.

```
ubuntu@workstation:~$ nano ~/keystonerc-cloud-dev
```

```
GNU nano 2.9.3 /home/ubuntu/keystonerc-cloud-dev

unset OS_SERVICE_TOKEN
unset OS_TENANT_ID
unset OS_TENANT_NAME
export OS_USERNAME=cloud-dev
export OS_PASSWORD=secret
export OS_AUTH_URL=http://192.168.1.20/identity
export OS_REGION_NAME=RegionOne
export OS_PROJECT_NAME=dev
export OS_INTERFACE=public
export OS_IDENTITY_API_VERSION=3
```

Tip

To avoid any confusion about which user's credentials you are currently using, you can set the `PS1` environment variable in the `keystone` file so that the terminal prompt shows the active user. For example, the line `export PS1='[\u@\h \W(keystone-cloud-dev)]$ '` will make the terminal prompt appear as `[ubuntu@workstation ~(keystone-cloud-dev)]$`.

- Repeat steps 6 and 7, this time for user **cloud-test3**.
- Disable the **cloud-test3** account by entering the command below

```
ubuntu@workstation:~$ openstack user set \
> --disable cloud-test3
```

```
ubuntu@workstation:~$ openstack user set \
> --disable cloud-test3
ubuntu@workstation:~$
```

10. To verify that the **cloud-test3** account is disabled, first source the `~/keystonerc-cloud-test3` keystone credentials file for the **cloud-test3** user by entering the command below.

```
ubuntu@workstation:~$ source ~/keystonerc-cloud-test3
```

```
ubuntu@workstation:~$ source ~/keystonerc-cloud-test3
ubuntu@workstation:~$
```

11. Now try listing a flavor by running the command below and take note of the response.

```
ubuntu@workstation:~$ openstack flavor list
```

```
ubuntu@workstation:~$ openstack flavor list
The request you have made requires authentication. (HTTP 401) (Request-ID: req-8
d2eec10-6d30-4b88-858d-99065fcb20ff)
ubuntu@workstation:~$
```

12. Source the keystone credentials using the **admin** user keystone file so that further changes can be made to the accounts.

```
ubuntu@workstation:~$ source ~/keystonerc-admin
```

```
ubuntu@workstation:~$ source keystonerc-admin
ubuntu@workstation:~$
```

13. Enable the **cloud-test3** user account, change the password to **password**, and change the email address to **ubuntu@devstack.lab.example.com**.

```
openstack user set \
> --password password \
> --email ubuntu@devstack.lab.example.com \
> --enable cloud-test3
```

```
ubuntu@workstation:~$ openstack user set \
> --password password \
> --email ubuntu@devstack.lab.example.com \
> --enable cloud-test3
ubuntu@workstation:~$
```

14. Set the password, **password** in the keystone credential file for **cloud-test3**. Modify the file so the content matches below. When you are finished, press **CTRL+X**, then **Y** to accept the file changes. Press **Enter** to save and exit nano.

```
ubuntu@workstation:~$ nano ~/keystonerc-cloud-test3
```

```
GNU nano 2.9.3 /home/ubuntu/keystonerc-cloud-test3
unset OS_SERVICE_TOKEN
unset OS_TENANT_ID
unset OS_TENANT_NAME
export OS_USERNAME=cloud-test3
export OS_PASSWORD=password
export OS_AUTH_URL=http://192.168.1.20/identity
export OS_REGION_NAME=RegionOne
export OS_PROJECT_NAME=dev
export OS_INTERFACE=public
export OS_IDENTITY_API_VERSION=3
```

15. Source the `~/keystonerc-cloud-test3` keystone credentials file for the **cloud-test3** user.

```
ubuntu@workstation:~$ source ~/keystonerc-cloud-test3
```

```
ubuntu@workstation:~$ source ~/keystonerc-cloud-test3
ubuntu@workstation:~$
```

16. Now that the **cloud-test3** user has been enabled, verify that the `openstack flavor list` command returns a list of available flavors.

```
ubuntu@workstation:~$ openstack flavor list
```

```
ubuntu@workstation:~$ openstack flavor list
+-----+-----+-----+-----+-----+-----+-----+
| ID | Name       | RAM | Disk | Ephemeral | VCPUs | Is Public |
+-----+-----+-----+-----+-----+-----+-----+
| 1  | m1.tiny    | 512 | 1    | 0          | 1      | True      |
| 2  | m1.small   | 2048 | 20   | 0          | 1      | True      |
| 3  | m1.medium  | 4096 | 40   | 0          | 2      | True      |
| 4  | m1.large   | 8192 | 80   | 0          | 4      | True      |
| 42 | m1.nano    | 128  | 1    | 0          | 1      | True      |
| 5  | m1.xlarge  | 16384 | 160  | 0          | 8      | True      |
| 84 | m1.micro   | 192  | 1    | 0          | 1      | True      |
| c1 | cirros256  | 256  | 1    | 0          | 1      | True      |
| d1 | ds512M     | 512  | 5    | 0          | 1      | True      |
| d2 | ds1G       | 1024 | 10   | 0          | 1      | True      |
| d3 | ds2G       | 2048 | 10   | 0          | 2      | True      |
| d4 | ds4G       | 4096 | 20   | 0          | 4      | True      |
+-----+-----+-----+-----+-----+-----+-----+
ubuntu@workstation:~$
```


17. Source the keystone credentials file for the **admin** user.

```
ubuntu@workstation:~$ source ~/keystonerc-admin
```

```
ubuntu@workstation:~$ source ~/keystonerc-admin
ubuntu@workstation:~$
```

18. Delete the **cloud-test2** and **cloud-test3** user accounts.

```
ubuntu@workstation:~$ openstack user delete cloud-test2
ubuntu@workstation:~$ openstack user delete cloud-test3
```

```
ubuntu@workstation:~$ openstack user delete cloud-test2
ubuntu@workstation:~$ openstack user delete cloud-test3
ubuntu@workstation:~$
```

19. Verify that the users have been deleted.

```
ubuntu@workstation:~$ openstack user list
```

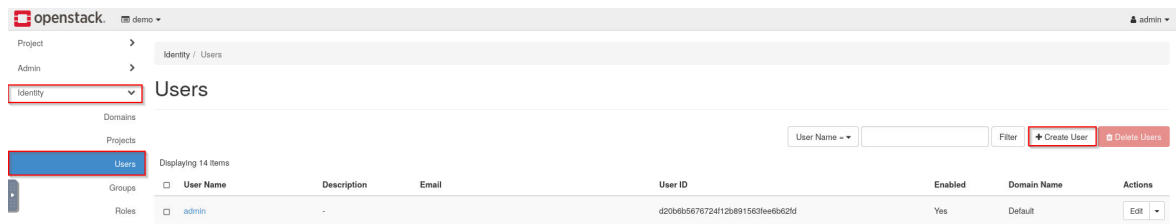
```
ubuntu@workstation:~$ openstack user list
+-----+-----+
| ID                                     | Name           |
+-----+-----+
| d20b6b5676724f12b891563fee6b62fd    | admin          |
| b22f7ae892074693890f46bb40285cfb    | demo           |
| 63675fa2181043d0b319a11c19c68b73    | demo_reader    |
| 88b49a32a8304831a0001d39cd79a503    | alt_demo       |
| faa47663ea5d42bb8885871e8938ac57    | alt_demo_member|
| 83926de3609f4f8fb12464bf029a6437    | alt_demo_reader|
| 90a437a732894d7db88220504c9a8cb3    | system_member  |
| 7d305ca820a0400b9df79e2e17b2fb88    | system_reader  |
| f1acd1611df94a6a9dd4ebb598f3f696    | nova           |
| 58cd4eccb7e948f99f5b67e95b6522f5    | glance         |
| 0e377dea2a0e4803bccb864a9143d7ee    | cinder         |
| 4366031a66ff42bb93f229178842dda8    | neutron        |
| c07a547c429b4baa835c5ab744db612b    | placement      |
| e7386c19f1f74572b5191faa3b7af872    | cloud-dev      |
+-----+-----+
ubuntu@workstation:~$
```

20. Leave the terminal window open and continue on to the next task.

5 Assigning User Roles and Privileges Using the Horizon Dashboard

In this task, you will assign user roles privileges using the *Horizon Dashboard*.

1. Open the web browser, navigate to the OpenStack login page at **192.168.1.20**, and log in with username **admin** and password **secret** as before.
2. Navigate to **Identity**→**Users** and click on the **Create User** button.



3. Create the **cloud-admin** user with **admin** privileges. In the dialog box, enter **cloud-admin** in the *User Name* field, and enter **secret** in the *Password* and *Confirm Password* fields. Select the **dev** project from the *Primary Project* dropdown, and select **admin** in the *Role* dropdown. Finally, leave the **Enabled** checkbox selected and click the **Create User** button.

Create User ✕


Domain ID
default


Domain Name
Default


User Name *
cloud-admin

Description

Email

Password *
●●●●●● 

Confirm Password *
●●●●●● 

Primary Project
dev ▼ 

Role
admin ▼

☒ **Enabled**

☐ **Lock password**

Description:
Create a new user and set related properties including the Primary Project and Role.

Cancel

Create User

Tip

You may need to use the scroll bar on the right of the dialog to scroll down to see the projects and roles.

4. Log out of the dashboard by clicking the **admin** drop down in the top right corner, then clicking **Sign Out**, and log back into the dashboard as the newly created **cloud-admin** user with password **secret**.
5. Verify that the **cloud-admin** user has **admin** privileges by creating a user named **cloud-user1**. Navigate to **Identity→Users** and click on the **Create User** button as before. In the dialog box, enter **cloud-user1** in the *User Name* field and **secreT** in the *Password* and *Confirm Password* fields. Select the **dev** project from the *Primary Project* dropdown, leave the *Role* set to **member**, and leave the **Enabled** checkbox selected. Click the **Create User** button.

Create User ✕

Domain ID

Domain Name

User Name *

Description

Email

Password *

Confirm Password *

Primary Project
 ▼

Role
 ▼

☒ **Enabled**

☐ **Lock password**

Description:
Create a new user and set related properties including the Primary Project and Role.

Tip

You may need to use the scroll bar on the right of the dialog to scroll down to see the projects and roles.

5 ASSIGNING USER ROLES AND PRIVILEGES USING THE HORIZON DASHBOARD

The screenshot shows the OpenStack Horizon dashboard's 'Users' page. The left sidebar contains navigation links for Project, Admin, and Identity. The main content area displays a table of users. The 'cloud-user1' user is highlighted with a red box. The table includes columns for User Name, Description, Email, User ID, Enabled status, Domain Name, and Actions.

User Name	Description	Email	User ID	Enabled	Domain Name	Actions
admin	-	-	420b8d527672471268915030e6b2d4	Yes	Default	Edit
demo	-	demo@example.com	62277a68202746538959d8b40285cd	Yes	Default	Edit
demo_reader	-	demo_reader@example.com	83877582181843053719a11c15a58173	Yes	Default	Edit
all_demo	-	all_demo@example.com	888484202483594831a001a036d73603	Yes	Default	Edit
all_demo_member	-	all_demo_member@example.com	3aa479635a5420a8898871a8938ac57	Yes	Default	Edit
all_demo_reader	-	all_demo_reader@example.com	83026a30594885124484702d8457	Yes	Default	Edit
system_member	-	system_member@example.com	90a437a72898467888225544a8a63	Yes	Default	Edit
system_reader	-	system_reader@example.com	7d205c823a2400d9f79a2e1752b88	Yes	Default	Edit
nova	-	-	f1acdf111d94a5a56a56a56a56a56a56	Yes	Default	Edit
glance	-	-	56a56a56a56a56a56a56a56a56a56a56	Yes	Default	Edit
cinder	-	-	5a2773a2a2a2a2a2a2a2a2a2a2a2a2a2	Yes	Default	Edit
neutron	-	-	4388037a88f42b3032291788a23a8a	Yes	Default	Edit
placement	-	-	c07a5f7a2884a835c5ab7448a12b	Yes	Default	Edit
cloud-dev	-	-	a7388a19f174372d81918a3b7a3872	Yes	Default	Edit
cloud-admin	-	-	8b4e4e4833748188018a3a28183707	Yes	Default	Edit
cloud-user1	-	-	a1e1487b132d3282b0b0a5c322a1f	Yes	Default	Edit

6. Verify that the **cloud-user1** account appears in the user list.
7. Log out of the dashboard, close the web browser, and continue to the next task.

6 Assigning User Roles and Privileges Using the OpenStack Unified CLI

In this task, you will assign user roles and privileges using the *OpenStack Unified CLI*.

1. Open a terminal window if one is not already running.
2. Source the `~/keystonerc-admin` keystone credentials file for the **admin** user by entering the command below.

```
ubuntu@workstation:~$ source ~/keystonerc-admin
```

```
ubuntu@workstation:~$ source ~/keystonerc-admin
ubuntu@workstation:~$
```

3. Create the user **cloud-user2** with the password **secret**, and make it a member of the **dev** project.

```
ubuntu@workstation:~$ openstack user create \
> --password secret \
> --project dev \
> cloud-user2
```

```
ubuntu@workstation:~$ openstack user create \
> --password secret \
> --project dev \
> cloud-user2
```

Field	Value
default_project_id	7720ff4082c3472b93ffca8d0fbf3dec
domain_id	default
enabled	True
id	447c8a8ec61a4356a641423339a5b935
name	cloud-user2
options	{}
password_expires_at	None

```
ubuntu@workstation:~$
```

4. The user **cloud-user2** is not assigned a role by default and must be assigned one. Assign the **admin** user role to the **cloud-user2** user.

```
ubuntu@workstation:~$ openstack role add \
> --user cloud-user2 \
> --project dev \
> admin
```

```
ubuntu@workstation:~$ openstack role add \
> --user cloud-user2 \
> --project dev \
> admin
ubuntu@workstation:~$
```

5. Verify that the **cloud-user2** is in the **admin** user role for the **dev** project.

```
ubuntu@workstation:~$ openstack role assignment list \
> --user cloud-user2 \
> --project dev \
> --names
```

```
ubuntu@workstation:~$ openstack role assignment list \
> --user cloud-user2 \
> --project dev \
> --names
+-----+-----+-----+-----+-----+-----+
| Role | User                | Group | Project      | Domain | Inherited |
+-----+-----+-----+-----+-----+-----+
| admin | cloud-user2@Default |       | dev@Default  |         | False     |
+-----+-----+-----+-----+-----+-----+
```

6. Next, the admin role for **cloud-user2** will be used to perform an admin action. First, follow steps 6 and 7 from Section 4 to create the `~/keystonerc-cloud-user2` keystone credentials file for the **cloud-user2** user.
7. Source the `~/keystonerc-cloud-user2` keystone credentials file for the **cloud-user2** user.

```
ubuntu@workstation:~$ source ~/keystonerc-cloud-user2
```

```
ubuntu@workstation:~$ source ~/keystonerc-cloud-user2
ubuntu@workstation:~$
```

8. Delete the **cloud-user1** user.

```
ubuntu@workstation:~$ openstack user delete cloud-user1
```

```
ubuntu@workstation:~$ openstack user delete cloud-user1
ubuntu@workstation:~$
```

9. Delete the **cloud-user2** user.

```
ubuntu@workstation:~$ openstack user delete cloud-user2
```

```
ubuntu@workstation:~$ openstack user delete cloud-user2
ubuntu@workstation:~$
```

10. Since the **cloud-user2** user has been deleted, the keystone credentials no longer authenticate the user. You can verify this by attempting to list OpenStack users.

```
ubuntu@workstation:~$ openstack user list
```

```
ubuntu@workstation:~$ openstack user list
The request you have made requires authentication. (HTTP 401) (Request-ID: req-0
elc626e-aa5d-4474-98bf-8d3f3eaf94af)
ubuntu@workstation:~$
```

11. Source the `~/keystonerc-admin` keystone credentials file for the **cloud-admin** user.

```
ubuntu@workstation:~$ source ~/keystonerc-admin
```

```
ubuntu@workstation:~$ source ~/keystonerc-admin
ubuntu@workstation:~$
```

12. Verify that the **cloud-user1** and **cloud-user2** users have been deleted.

```
ubuntu@workstation:~$ openstack user list
```

```
ubuntu@workstation:~$ openstack user list
```

ID	Name
d20b6b5676724f12b891563fee6b62fd	admin
b22f7ae892074693890f46bb40285cfb	demo
63675fa2181043d0b319a11c19c68b73	demo_reader
88b49a32a8304831a0001d39cd79a503	alt_demo
faa47663ea5d42bb8885871e8938ac57	alt_demo_member
83926de3609f4f8fb12464bf029a6437	alt_demo_reader
90a437a732894d7db88220504c9a8cb3	system_member
7d305ca820a0400b9df79e2e17b2fb88	system_reader
f1acd1611df94a6a9dd4ebb598f3f696	nova
58cd4eccb7e948f99f5b67e95b6522f5	glance
0e377dea2a0e4803bccb864a9143d7ee	cinder
4366031a66ff42bb93f229178842dda8	neutron
c07a547c429b4baa835c5ab744db612b	placement
e7386c19f1f74572b5191faa3b7af872	cloud-dev
6b5ebc6d03374b918801b34a2d193707	cloud-admin

```
ubuntu@workstation:~$
```

13. Source the `~/keystonerc-cloud-dev` keystone credentials for the **cloud-dev** user and attempt to list the users. Notice the error displayed when a non-privileged user runs a command that requires administrator privileges.

```
ubuntu@workstation:~$ openstack user list
```

```
ubuntu@workstation:~$ source ~/keystonerc-cloud-dev
ubuntu@workstation:~$ openstack user list
You are not authorized to perform the requested action: identity:list_users. (HT
TP 403) (Request-ID: req-6afb4d87-75ec-4a68-add3-2fcacc0022b5)
ubuntu@workstation:~$
```

14. The lab is now complete.