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# **Users, Projects, and Roles in OpenStack Keystone**

## **LAB #2**

Bryan Daniel, Justin, Cockrell, and Dylan Hagy

University of South Carolina Aiken

CSCI A591-PC

Dr. Ali AlSabeh

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# Introduction to OpenStack

## Learning Objectives

By the end of this lab, students will be able to:

- Create and manage OpenStack users through both CLI and Dashboard
- Create and organize projects (tenants)
- Understand and assign different roles (admin, member, reader)
- Demonstrate the difference between admin and regular user permissions
- Test access control by switching between different user accounts
- Document user and project hierarchies

## Prerequisites

- Basic Linux command-line knowledge
- Completion of Lab1: Introduction to OpenStack
- DevStack environment installed and running
- Access to OpenStack Dashboard (Horizon)
- Understanding of virtualization concepts
- Access to a virtual machine or physical server with:
  - Ubuntu 22.04 LTS or later (recommended)
  - Minimum 8GB RAM, 40GB disk space
  - Network connectivity
  - DevStack Preinstalled ([Install Here](#))

## Part 1: Understanding Users, Projects, and Roles

### 1.1 What are Users?

Users are individuals who interact with OpenStack. Each user has:

- A unique username
- A password for authentication
- An email address
- Association with one or more projects

- Assigned roles that determine permissions

## 1.2 What are Projects?

Projects (formerly called “tenants”) are organizational units that:

- Group users together
- Isolate resources (instances, networks, volumes)
- Enable resource quotas and billing
- Provide multi-tenancy in OpenStack

**Example:** A company might have projects for different departments

- Engineering Project
- Finance Project
- HR Project

## 1.3 What are Roles?

Roles define what actions users can perform. Default roles include:

Role	Permissions	Use Case
admin	Full access to all resources and settings	System administrators
member	Create and manage resources in assigned projects	Regular users, developers
reader	Read-only access to resources	Auditors, viewers

## 1.4 How They Work Together

A **user’s role** dictates their permissions to access various **projects** and settings within projects. The user contains the login information; the role dictates their access, and it all grants them access to projects.

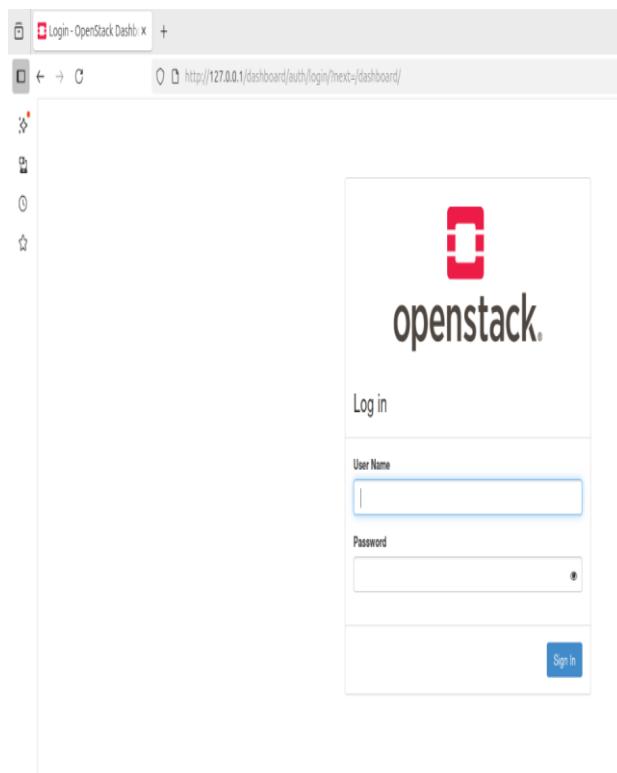
## Part 2: Hands-on Lab: Working with Users via Dashboard

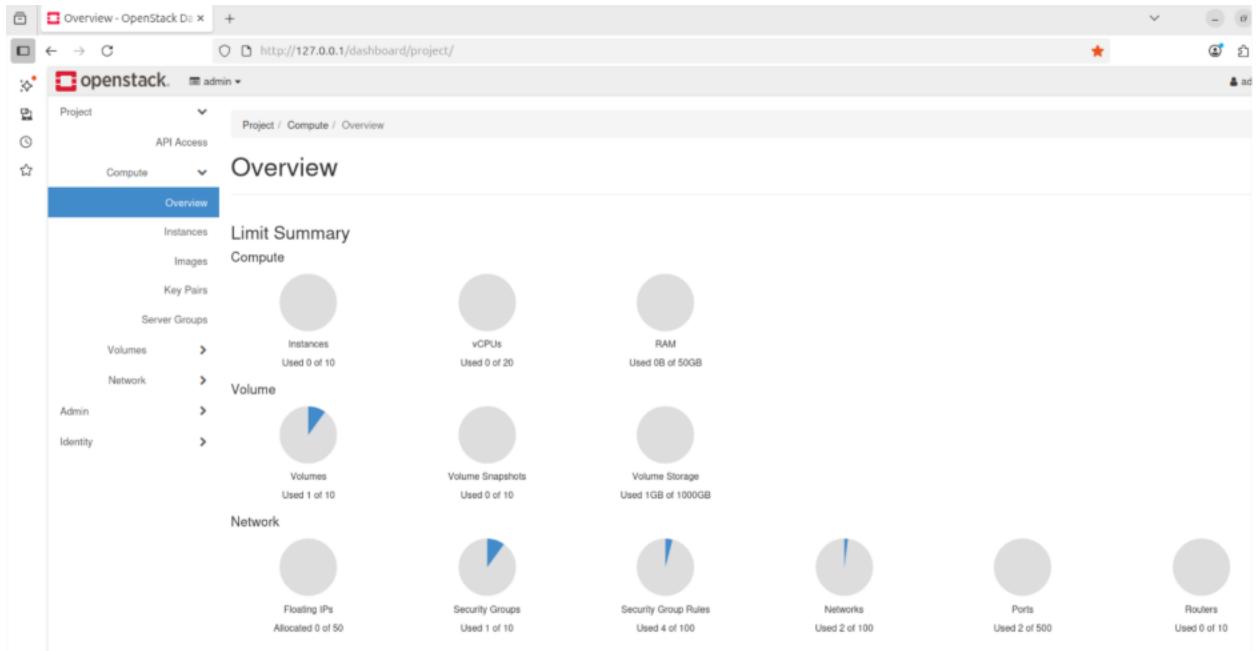
### Section 1: Login as Admin

**Step 1:** Open your web browser and navigate to the OpenStack Dashboard

<http://127.0.0.1/dashboard>

- **Username:** admin
- **Password:** secret





## Section 2: Explore Admin Capabilities

### Step 2: Navigate to Identity -> Projects

Notice that as an admin, you can see all projects in the system:

- admin
- demo
- service
- alt\_demo

The screenshot shows the OpenStack Identity interface with the URL <http://127.0.0.1/dashboard/identity/>. The left sidebar has 'Identity' selected under 'Admin'. The main area is titled 'Projects' and displays a table of existing projects:

Name	Description	Project ID	Domain Name	Enabled	Actions
alt_demo		513076bc048439a88fda9436d9078e5	Default	Yes	<button>Manage Members</button>
invisible_to_admin		7439add45b594797a6de3913ab05c8	Default	Yes	<button>Manage Members</button>
admin	Bootstrap project for initializing the cloud.	bd755da919444d328e3f25316317a883	Default	Yes	<button>Manage Members</button>
demo		e0fdd1248db4233aad57146fb0b792	Default	Yes	<button>Manage Members</button>
service		fd2553c6119d4c41aae1a732d85d9107	Default	Yes	<button>Manage Members</button>

### Step 3: Navigate to Identity -> Users

You should see all users including:

- admin
- demo
- Service accounts (nova, neutron, glance, etc.)

The screenshot shows the OpenStack Identity interface with the URL <http://127.0.0.1/dashboard/identity/users/>. The left sidebar has 'Identity' selected under 'Admin'. The main area is titled 'Users' and displays a table of existing users:

User Name	Description	Email	User ID	Enabled	Domain Name	Actions
placement	-		0526a36658ee449e9dc865112109a48b	Yes	Default	<button>Edit</button>
system_reader	-	system_reader@example.com	2293e8d2cbe4128814c36d30e38bbe	Yes	Default	<button>Edit</button>
system_member	-	system_member@example.com	2ecde72a934244ba49e47aee373498d	Yes	Default	<button>Edit</button>
admin	-		2eee114ca75f4851850324b9598970f	Yes	Default	<button>Edit</button>
cinder	-		45cf0821007147aa9beca67e4c54d37c	Yes	Default	<button>Edit</button>
neutron	-		58eb5834ea50412880f0a51259834c6	Yes	Default	<button>Edit</button>
alt_demo_member	-	alt_demo_member@example.com	7e573f39bdc54bf9ab6c63524c265a36	Yes	Default	<button>Edit</button>
nova	-		86085e74bf849d58c45534c777fa5e9	Yes	Default	<button>Edit</button>
glance	-		95505b2e82304122828c763604842a38	Yes	Default	<button>Edit</button>
alt_demo	-	alt_demo@example.com	a8050f3abec64a64b8669b536550b798	Yes	Default	<button>Edit</button>
demo	-	demo@example.com	ba8470eaeac4e4fe58738e1649ef394cd	Yes	Default	<button>Edit</button>
demo_reader	-	demo_reader@example.com	c9b76df3c8d642a00735dc6bd5878f	Yes	Default	<button>Edit</button>
alt_demo_reader	-	alt_demo_reader@example.com	dcf040f6bc04e3f82e97fb9a8fa38a	Yes	Default	<button>Edit</button>

## Section 3: Create a New Project

### Step 4: Click Identity -> Projects then click Create Project

Fill in the following information:

- **Domain ID:** default
- **Domain Name:** Default
- **Name:** Test\_project
- **Description:** Test
- **Enabled:** Checked

Click **Create Project**

The screenshot shows the OpenStack Identity interface. At the top, there is a modal window titled "Create Project" with the following fields filled in:

Project Information *	Project Members	Project Groups
Domain ID	default	
Domain Name	Default	
Name *	Test_project	
Description	Test	
Enabled	<input checked="" type="checkbox"/>	

At the bottom right of the modal are "Cancel" and "Create Project" buttons. Below the modal, the main Identity / Projects page is visible, showing a list of existing projects. The "Projects" tab is selected. The table displays the following data:

Name	Description	Project ID	Domain Name	Enabled	Actions
alt_demo		513076bc0448439a88fd9436d9078e5	Default	Yes	<button>Manage Members</button>
invisible_to_admin		7439add45b594797afde39131ab05cc8	Default	Yes	<button>Manage Members</button>
admin	Bootstrap project for initializing the cloud.	b6755da91444d328d3f25316317a883	Default	Yes	<button>Manage Members</button>
Test_project	Test	e02b816e273045ddad8824aea1b0fc42	Default	Yes	<button>Manage Members</button>
demo		eddddf1248db4233ae5714680b792	Default	Yes	<button>Manage Members</button>
service		f22553c61194ac41aae1a732d85d9107	Default	Yes	<button>Manage Members</button>

## Section 4: Create New Users

## Step 5: Navigate to Identity -> Users then click Create User

Create the first user with these details:

- **Username:** alice
- **Email:** [alice@user.com](mailto:alice@user.com)
- **Password:** Alice123!@
- **Confirm Password:** Alice123!@
- **Primary Project:** Test\_project
- **Role:** member
- **Enabled:** Yes

### Click Create User

The screenshot shows the 'Create User' form with the following fields filled in:

- Domain Name:** Default
- User Name \***: alice
- Description**: (empty)
- Email**: alice@user.com
- Password \***: (redacted)
- Confirm Password \***: (redacted)
- Primary Project**: Test\_project
- Role**: member
- Enabled**:
- Lock password**:

At the bottom right of the form are two buttons: **Cancel** and **Create User**.

## Step 6: Create a second user

Create the second user with these details:

- **Username:** bob
- **Email:** [bob@user.com](mailto:bob@user.com)
- **Password:** Bob123!@
- **Confirm Password:** Bob123!@
- **Primary Project:** Test\_project
- **Role:** member
- **Enabled:** Yes

Click **Create User**

### Step 7: Create a third user who will have admin privileges

Create the second user with these details:

- **Username:** charlie
- **Email:** [charlie@admin.com](mailto:charlie@admin.com)
- **Password:** Charlie123!@
- **Confirm Password:** Charlie123!@
- **Primary Project:** admin
- **Role:** admin
- **Enabled:** Yes

Click **Create User**

**Screenshot Task:** Take a screenshot of the Users list showing alice, bob, and charlie.

The screenshot shows a user creation form with the following fields filled in:

- Domain Name:** Default
- User Name \***: charlie
- Description**: (empty)
- Email**: charlie@admin.com
- Password \***: (redacted)
- Confirm Password \***: (redacted)
- Primary Project**: Test\_project
- Role**: admin
- Enabled**:
- Lock password**:

On the right side of the form, there is a tooltip for the "Lock Password" field: "Disables the ability for a user to change their password through self-service APIs."

At the bottom right of the form are two buttons: "Cancel" and "Create User".

User Name	Description	Email	User ID	Enabled	Domain Name	Actions
placement	-		0526a39658ec449e9dc865112109aa8b	Yes	Default	<button>Edit</button>
bob	-	bob@user.com	190e4ea1a055450d8d806304ae63b3e	Yes	Default	<button>Edit</button>
system_reader	-	system_reader@example.com	22993e8d2cb4128814c36d3be3bbbe	Yes	Default	<button>Edit</button>
system_member	-	system_member@example.com	2ecde72a93424bba49e47aae37349bd	Yes	Default	<button>Edit</button>
admin	-		2ee114ca7914851850324b85989f70f	Yes	Default	<button>Edit</button>
cinder	-		45cfef821007147aa9fbef6e4c54d37c	Yes	Default	<button>Edit</button>
neutron	-		59eb5834ea50a12b8000a51259834c6	Yes	Default	<button>Edit</button>
charlie	-	charlie@admin.com	5c84da39ec7a5f7a75b9c210c48c07	Yes	Default	<button>Edit</button>
alt_demo_member	-	alt_demo_member@example.com	7a573039bd54b9ab6c63524c265a36	Yes	Default	<button>Edit</button>
nova	-		86085e74bf849d5b45534c7771a5e9	Yes	Default	<button>Edit</button>
glance	-		955079a8e230412282b7763694842a38	Yes	Default	<button>Edit</button>
alt_demo	-	alt_demo@example.com	a80503aber64af4b869b6536550b798	Yes	Default	<button>Edit</button>
demo	-	demo@example.com	be8470sec4e4e5873be1649a394cd	Yes	Default	<button>Edit</button>
demo_reader	-	demo_reader@example.com	c9efef3d8d54124a00735dc6b5876f	Yes	Default	<button>Edit</button>
alt_demo_reader	-	alt_demo_reader@example.com	dcl040f0bc04e3f82e97fb93a8fa38a	Yes	Default	<button>Edit</button>
alice	-	alice@user.com	f0da75d1c6a94151afc341c70dae620f	Yes	Default	<button>Edit</button>

## Part 3: Hands-On Lab: Working with Users via CLI

### Section 1: Using OpenStack CLI

#### Step 1: Open a terminal and navigate to the DevStack directory

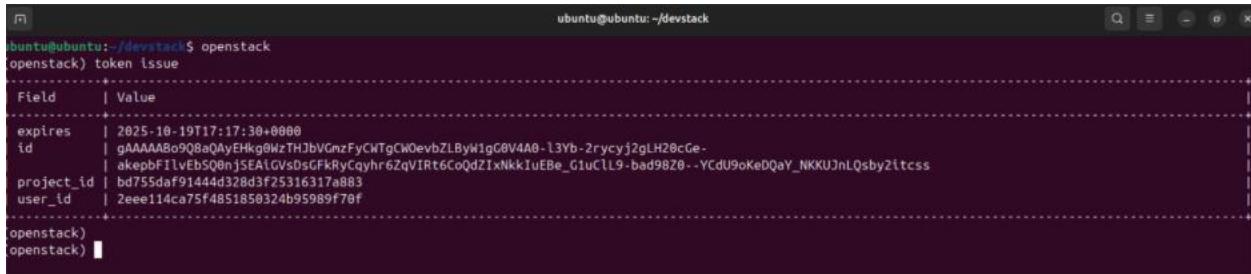
```
ubuntu@ubuntu:~$ cd ~/devstack/
ubuntu@ubuntu:~/devstack$
```

#### Step 2: Source the admin credentials

```
ubuntu@ubuntu:~$ cd ~/devstack/
ubuntu@ubuntu:~/devstack$ source openrc admin admin
ubuntu@ubuntu:~/devstack$
```

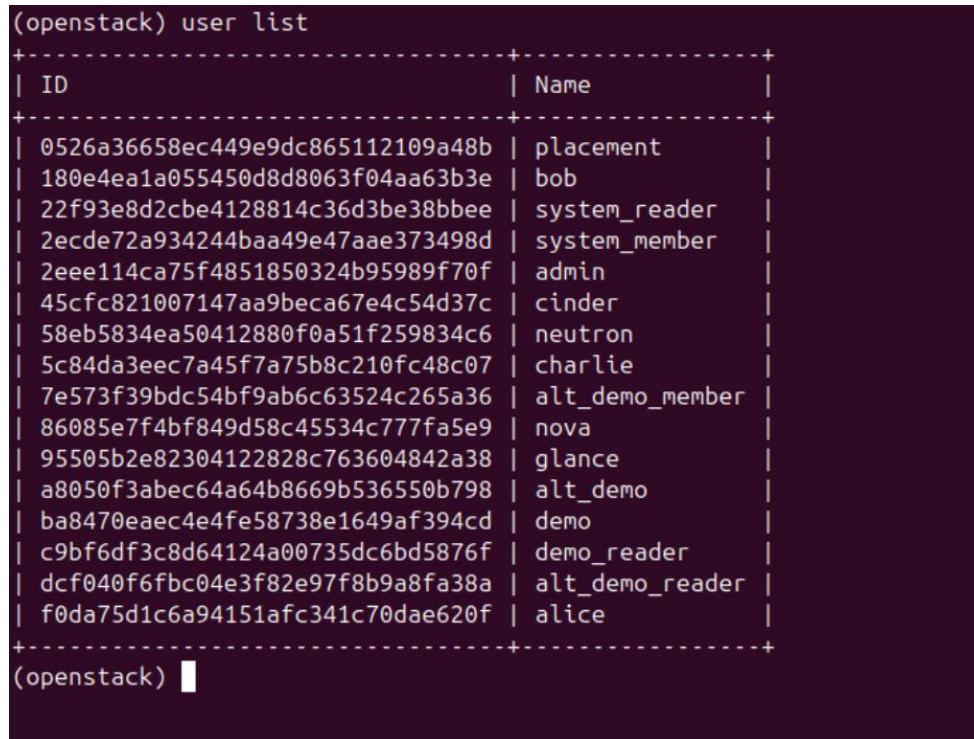
You should see your prompt change with no errors. This loads environment variables needed for authentication.

### Step 3: Verify authentication by requesting a token



```
ubuntu@ubuntu:~/devstack$ openstack
(openstack) token issue
+-----+
| Field | Value |
+-----+
| expires | 2025-10-19T17:17:30+0000 |
| id | gAAAAA8o9Q8aQ0yEHkg0wzTHJbVGnzFyCWTgCW0evbZLBW1gG0V4A0-l3Yb-2rycyj2gLH20cGe- |
| akepbflvebsQ0n5EA1GvsDsGfkRyCqyh6ZqVIRT6CoQdZIxNkkIuEBe_G1uCLl9-bad98Z0-YCdU9oKeDQaY_NKKUJnLQsbyZltcss |
| project_id | bd755daf91444d328d3f25316317a883 |
| user_id | 2eee114ca75f4851850324b95989f70f |
+-----+
(openstack)
(openstack)
```

### Step 4: Once authenticated successfully, list all users



```
(openstack) user list
+-----+
| ID | Name |
+-----+
| 0526a36658ec449e9dc865112109a48b | placement |
| 180e4ea1a055450d8d8063f04aa63b3e | bob |
| 22f93e8d2cbe4128814c36d3be38bbee | system_reader |
| 2ecde72a934244baa49e47aae373498d | system_member |
| 2eee114ca75f4851850324b95989f70f | admin |
| 45cf821007147aa9beca67e4c54d37c | cinder |
| 58eb5834ea50412880f0a51f259834c6 | neutron |
| 5c84da3eec7a45f7a75b8c210fc48c07 | charlie |
| 7e573f39bdc54bf9ab6c63524c265a36 | alt_demo_member |
| 86085e7f4bf849d58c45534c777fa5e9 | nova |
| 95505b2e82304122828c763604842a38 | glance |
| a8050f3abec64a64b8669b536550b798 | alt_demo |
| ba8470eaec4e4fe58738e1649af394cd | demo |
| c9bf6df3c8d64124a00735dc6bd5876f | demo_reader |
| dcf040f6fb04e3f82e97f8b9a8fa38a | alt_demo_reader |
| f0da75d1c6a94151afc341c70dae620f | alice |
+-----+
(openstack)
```

You should see a table with users including alice, bob, charlie, and system users.

### Step 5: View detailed information about a specific user

Take a screenshot of the output showing alice's details.

**Note:** Do NOT use the interactive (openstack) shell for this lab. Always use direct commands like openstack user list after setting up the environment variables.

```
(openstack) exit
ubuntu@ubuntu:~/devstack$ openstack user show alice
+-----+-----+
| Field | Value |
+-----+-----+
| default_project_id | e02b816e273045ddad8824aea1b0fc42 |
| domain_id | default |
| email | alice@user.com |
| enabled | True |
| id | f0da75d1c6a94151afc341c70dae620f |
| name | alice |
| description | None |
| password_expires_at | None |
| options | {'lock_password': False} |
+-----+-----+
ubuntu@ubuntu:~/devstack$
```

## Section 2: Create a New Project via CLI

### Step 1: Create a user for the finance project

```
ubuntu@ubuntu:~/devstack$ openstack user create david --project finance --password 'David123!@' --email david@finance.com
+-----+-----+
| Field | Value |
+-----+-----+
| default_project_id | c0e769564ce24dbc7f892e7d7942113 |
| domain_id | default |
| email | david@finance.com |
| enabled | True |
| id | 38514d8c71f5475f87cd8df300775e4f |
| name | david |
| description | None |
| password_expires_at | None |
| options | {} |
+-----+-----+
ubuntu@ubuntu:~/devstack$
```

### Step 2: Verify the user was created

```
ubuntu@ubuntu:~/devstack$ openstack user show david
+-----+-----+
| Field | Value |
+-----+-----+
| default_project_id | c0e769564ce24dbca7f892e7d7942113 |
| domain_id | default |
| email | david@finance.com |
| enabled | True |
| id | 38514d8c71f5475f87cd8df300775e4f |
| name | david |
| description | None |
| password_expires_at | None |
| options | {} |
+-----+
ubuntu@ubuntu:~/devstack$
```

### Step 3: List all projects to confirm both Test\_project and finance exist

```
ubuntu@ubuntu:/opt/stack/devstack$ source openrc admin admin
ubuntu@ubuntu:/opt/stack/devstack$ openstack project list
+-----+-----+
| ID | Name |
+-----+-----+
| 2e8ed426deb441f19f47733f7845f1cb | finance |
| 3bb3226221e64ca4a18267052169edd9 | Test_project |
| 513076bc0448439a88fda9436d9078e5 | alt_demo |
| 7439add45b594797a6de39131ab05cc8 | invisible_to_admin |
| bd755daf91444d328d3f25316317a883 | admin |
| ecfdddf1248db4233aad57146f0b0b792 | demo |
| fd2553c6119d4c41aae1a732d85d9107 | service |
+-----+
ubuntu@ubuntu:/opt/stack/devstack$
```

## Part 4: Hands-On Lab: Understanding and Assigning Roles

### Section 1: View Available Roles

#### Step 1: List all available roles in your OpenStack deployment

You should see roles including:

- admin
- member
- reader

```
ubuntu@ubuntu:~/devstack$ openstack role list
+-----+-----+
| ID          | Name   |
+-----+-----+
| 0d37478aaf6547ca9431a61875ac4581 | service |
| 2bbb2fc206bb4097bd9a9584433b3251 | reader  |
| 2c88f95e06554c44ad4c61e238b6d830 | member   |
| 525553ab65ab4822a2cfa7b16e5e849a | manager  |
| 7f62fa9295294cfba8540fedf74a8478 | ResellerAdmin |
| 8dba605dda2f4199bac4e12478c0979e | anotherrole |
| b6cebb4885fe4b678d2159db040ce296 | admin    |
+-----+-----+
ubuntu@ubuntu:~/devstack$
```

#### Step 2: View details of the admin role

```
ubuntu@ubuntu:~/devstack$ openstack role show admin
+-----+-----+
| Field | Value |
+-----+-----+
| id | b6cebb4885fe4b678d2159db040ce296 |
| name | admin |
| domain_id | None |
| description | None |
+-----+
ubuntu@ubuntu:~/devstack$
```

## Section 2: Assign Roles to Users

### Step 3: Assign the member role to david in the finance project

```
ubuntu@ubuntu:~/devstack$ openstack role add --project finance --user david member
ubuntu@ubuntu:~/devstack$
```

### Step 4: View role assignments for david

```
ubuntu@ubuntu:~/devstack$ openstack role assignment list --user david --names
+-----+-----+-----+-----+-----+-----+
| Role | User | Group | Project | Domain | System | Inherited |
+-----+-----+-----+-----+-----+-----+
| member | david@Default | | finance@Default | | | False |
+-----+-----+-----+-----+-----+-----+
ubuntu@ubuntu:~/devstack$
```

### Step 5: Create another user and assign reader role

```
ubuntu@ubuntu:~/devstack$ openstack user create eve --project finance --password 'Eve123!@' --email eve@finance.com
+-----+-----+
| Field | Value |
+-----+-----+
| default_project_id | c0e769564ce24dbc7f892e7d7942113 |
| domain_id | default |
| email | eve@finance.com |
| enabled | True |
| id | ac47259130384d6eae36d033282d3cb5 |
| name | eve |
| description | None |
| password_expires_at | None |
| options | {} |
+-----+
ubuntu@ubuntu:~/devstack$
```

### Step 6: Compare role assignments

```
ubuntu@ubuntu:~/devstack$ openstack role assignment list --user david --names
+-----+-----+-----+-----+-----+
| Role | User      | Group | Project      | Domain | System | Inherited |
+-----+-----+-----+-----+-----+
| member | david@Default |     | finance@Default |     |     | False   |
+-----+-----+-----+-----+-----+
ubuntu@ubuntu:~/devstack$ openstack role assignment list --user eve --names
ubuntu@ubuntu:~/devstack$
```

## Section 3: Assign Multiple Roles

### Step 7: Give alice access to both Test\_project and finance projects

```
ubuntu@ubuntu:~/devstack$ openstack role add --project finance --user alice member
ubuntu@ubuntu:~/devstack$ openstack role assignment list --user alice --names
+-----+-----+-----+-----+-----+
| Role | User      | Group | Project      | Domain | System | Inherited |
+-----+-----+-----+-----+-----+
| member | alice@Default |     | finance@Default |     |     | False   |
| member | alice@Default |     | Test_project@Default |     |     | False   |
+-----+-----+-----+-----+-----+
ubuntu@ubuntu:~/devstack$
```

## Part 5: Hands-On Lab: Testing Admin vs Regular User Permissions

### Section 1: Admin User Capabilities

#### Step 1: Create a credentials file for the admin user (already exists)

```

ubuntu@ubuntu:~/devstack$ cat ~/devstack/openrc
#!/usr/bin/env bash
#
# source openrc [username] [projectname]
#
# Configure a set of credentials for $PROJECT/$USERNAME:
# Set OS_PROJECT_NAME to override the default project 'demo'
# Set OS_USERNAME to override the default user name 'demo'
# Set ADMIN_PASSWORD to set the password for 'admin' and 'demo'

if [[ -n "$1" ]]; then
    OS_USERNAME=$1
fi
if [[ -n "$2" ]]; then
    OS_PROJECT_NAME=$2
fi

# Find the other rc files
RC_DIR=$(cd $(dirname "${BASH_SOURCE:-$0}") && pwd)

# Import common functions
source $RC_DIR/functions

# Load local configuration
source $RC_DIR/stackrc

# Load the last env variables if available
if [[ -r $RC_DIR/.stackenv ]]; then
    source $RC_DIR/.stackenv
    export OS_CACERT
fi

# Get some necessary configuration
source $RC_DIR/lib/tls

# Minimal configuration
export OS_AUTH_TYPE=password

```

### Step 2: While logged in as admin, perform these operations

```

ubuntu@ubuntu:~/devstack$ openstack user create test_admin --password 'Test123!@' --email test@test.local
+-----+-----+
| Field | Value |
+-----+-----+
| default_project_id | None |
| domain_id | default |
| email | test@test.local |
| enabled | True |
| id | 6087f9fe735441e28cb8ea05c47f5910 |
| name | test_admin |
| description | None |
| password_expires_at | None |
| options | {} |
+-----+-----+
ubuntu@ubuntu:~/devstack$ 

```

### Step 3: While logged in as admin, perform these operations

```

ubuntu@ubuntu:~/devstack$ openstack user delete test_admin
ubuntu@ubuntu:~/devstack$ openstack user list
+-----+-----+
| ID           | Name |
+-----+-----+
| 0526a36658ec449e9dc865112109a48b | placement |
| 180e4ea1a055450d8d8063f04aa63b3e | bob      |
| 22f93e8d2cbe4128814c36d3be38bbe | system_reader |
| 2ecde72a934244baa49e47aae373498d | system_member |
| 2eee114ca75f4851850324b95989f70f | admin     |
| 38514d8c71f5475f87cd8df300775e4f | david    |
| 45cf821007147aa9beca67e4c54d37c | cinder    |
| 58eb5834ea50412880f0a51f259834c6 | neutron   |
| 5c84da3eec7a45f7a75b8c210fc48c07 | charlie   |
| 7e573f39bdc54bf9ab6c63524c265a36 | alt_demo_member |
| 86085e7f4bf849d58c45534c777fa5e9 | nova     |
| 95505b2e82304122828c763604842a38 | glance    |
| a8050f3abec64a64b8669b536550b798 | alt_demo  |
| ac47259130384d6eae36d033282d3cb5 | eve       |
| ba8470eaec4e4fe58738e1649af394cd | demo      |
| c9bf6df3c8d64124a00735dc6bd5876f | demo_reader |
| dcf040f6fb04e3f82e97f8b9a8fa38a | alt_demo_reader |
| f0da75d1c6a94151afc341c70dae620f | alice     |
+-----+-----+
ubuntu@ubuntu:~/devstack$ 
```

#### **Step 4: While logged in as admin, perform these operations**

```

ubuntu@ubuntu:~/devstack$ openstack server list --all-projects
ubuntu@ubuntu:~/devstack$ openstack hypervisor list
+-----+-----+-----+-----+
| ID           | Hypervisor Hostname | Hypervisor Type | Host IP | State |
+-----+-----+-----+-----+
| 7985fdc4-e253-4bdb-800c-b334e6c4f203 | ubuntu          | QEMU           | 127.0.0.1 | up   |
+-----+-----+-----+-----+
ubuntu@ubuntu:~/devstack$ 
```

# Part 6: Hands-On Lab: Dashboard Comparison: Admin vs Regular User

## Section 1: Admin Dashboard View

**Step 1:** Logout of the current session (if logged in)

**Step 2:** Login as **admin** user

**Step 3:** Observe the navigation menu

As admin, you should see:

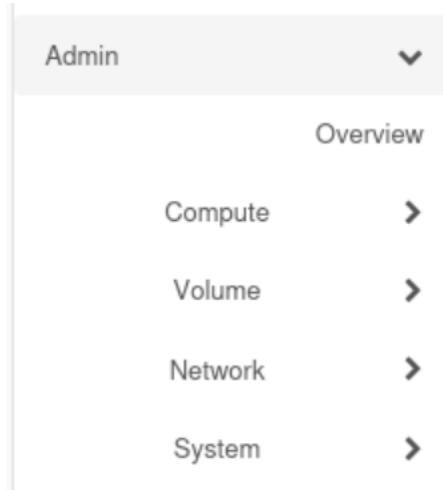
- **Project** tab
- **Admin** tab (only visible to admins)
- **Identity** tab



**Step 4:** Click on the **Admin** tab

You should see sections for:

- Compute (Hypervisors, Instances across all projects)
- Volume (Volume Types)
- Network (Networks across all projects)
- System Information



**Step 5:** Navigate to **Admin** -> **System** -> **System Information** -> **Compute Services**

This shows all compute services running in your OpenStack environment.

The screenshot shows the OpenStack Admin Dashboard at <http://127.0.0.1/dashboard/admin/info/>. The left sidebar is under the 'Admin' section, with 'System Information' selected. The main content area is titled 'System Information' and shows a table of compute services. The table has columns: Name, Host, Zone, Status, State, and Last Updated. There are four items listed:

Name	Host	Zone	Status	State	Last Updated
nova-scheduler	ubuntu	internal	Enabled	Up	1 minute
nova-conductor	ubuntu	internal	Enabled	Up	1 minute
nova-conductor	ubuntu	internal	Enabled	Up	1 minute
nova-compute	ubuntu	nova	Enabled	Up	0 minutes

Version: 25.5.1

The screenshot shows the OpenStack Admin Dashboard at <http://127.0.0.1/dashboard/identity/>. The left sidebar is under the 'Identity' section, with 'Projects' selected. The main content area is titled 'Projects' and shows a table of projects. The table has columns: Name, Description, Project ID, Domain Name, Enabled, and Actions. There are seven items listed:

Name	Description	Project ID	Domain Name	Enabled	Actions
finance		2a8ed426db441f1947733f7845f1cb	Default	Yes	Manage Members
Test_project	Test	3bb3226221e64ca4a18267052169edd9	Default	Yes	Manage Members
alt_demo		513076bc044b439a88fd9439d9078e5	Default	Yes	Manage Members
invisible_to_admin		7439add45b594797a6de39131ab05cc08	Default	Yes	Manage Members
admin	Bootstrap project for initializing the cloud.	bd755da91444d328d9125316317a883	Default	Yes	Manage Members
demo		e0d3df1248db4233xad571460b0b792	Default	Yes	Manage Members
service		f02553c6119d4c41aa01a732d85d9107	Default	Yes	Manage Members

## Section 2: Regular User Dashboard View

**Step 6:** Logout of the admin account

**Step 7:** Login as alice

- **Username:** alice
- **Password:** Alice123!@
- **Domain:** Default

**Step 8:** Observe the navigation menu

Project finance > Identity / Projects > Projects

Name	Description	Project ID	Domain Name	Enabled	Actions
finance		2e8ed426dab441f1947733f78451fc	Default	Yes	
Test_project	Test	3bb3226221e64ca4a18267052169edd9	Default	Yes	<button>Set as Active Project</button>

As a regular user (member role), alice should see:

- **Project tab** (can access)
- **NO Admin tab** (not visible)

**Screenshot Task:** Take a screenshot showing alice's limited navigation menu (no Admin tab).

### Step 9: Navigate to Project -> Compute -> Instances

Alice can manage instances within her project.

Project finance > Compute / Instances > Instances

Instance Name	Image Name	IP Address	Flavor	Key Pair	Status	Availability Zone	Task	Power State	Age	Actions
No items to display.										

### Step 10: Try to access admin functions

In the URL bar, manually try to navigate to:

<http://127.0.0.1/dashboard/admin/>

You should see an error or be redirected, showing alice doesn't have access.

http://127.0.0.1/dashboard/admin/

You are not authorized to access this page [Login](#)

## Section 3: Create Resources as Different Users

**Step 11:** While logged in as alice, create an instance

- Go to **Project -> Compute -> Instances**
- Click **Launch Instance**
- **Instance Name:** alice-test-vm
- **Source:** Select cirros image
- **Flavor:** m1.tiny
- Click **Launch Instance**

Launch Instance

Details

Please provide the initial hostname for the instance, the availability zone where it will be deployed, and the instance count. Increase the Count to create multiple instances with the same settings.

Source *	Project Name	Total Instances (10 Max)
Flavor *	Test_project	10%
Networks	Instance Name *	0 Current Usage 1 Added 9 Remaining
Network Ports	alice-test-vm	
Security Groups	Description	
Key Pair	Availability Zone	
Configuration	nova	
Server Groups	Count *	
Scheduler Hints	1	
Metadata		

**Details**

Instance source is the template used to create an instance. You can use an image, a snapshot or an instance (image snapshot), a volume or a volume snapshot (if enabled). You can also choose to use persistent storage by creating a new volume.

**Source \***

**Select Boot Source**

Flavor \*

Image

Create New Volume

Yes No

Networks

Volume Size (GB) \*

1

Delete Volume on Instance Delete

Yes No

Network Ports

Security Groups

Volume Type

lvmdriver-1

Key Pair

Allocated

Displaying 0 items

Configuration

Server Groups

Name	Updated	Size	Format	Visibility
Select an item from Available items below				

Scheduler Hints

Metadata

Displaying 0 items

▼ Available ①

Select one

Click here for filters or full text search.

Displaying 1 item

Name	Updated	Size	Format	Visibility	
cirros-0.6.3-x86_64-disk	9/12/25 11:47 PM	20.69 MB	QCOW2	Public	

Displaying 1 item

Cancel

< Back

Next >

Launch Instance

### **Step 12: Verify the instance is running**

Displaying 1 item											
	Instance Name	Image Name	IP Address	Flavor	Key Pair	Status	Availability Zone	Task	Power State	Age	Actions
<input type="checkbox"/>	alice-test-vm	-	192.168.233.122	m1.tiny	-	Active	nova	None	Running	0 minutes	<button>Create Snapshot</button> ▾

## **Step 13: Logout and login as bob**

- **Username:** bob
  - **Password:** Bob123!@

**Step 14:** Navigate to **Project -> Compute -> Instances**

Bob should see alice's instance because they're in the same project (Test\_project).

Displaying 1 item											
	Instance Name	Image Name	IP Address	Flavor	Key Pair	Status	Availability Zone	Task	Power State	Age	Actions
<input type="checkbox"/>	alice-test-vm	-	192.168.233.122	m1.tiny	-	Active	nova	None	Running	0 minutes	<button>Create Snapshot</button> ▾

**Screenshot Task:** Take a screenshot showing bob can see alice's instance.

**Step 15:** Logout and login as **david**

- **Username:** david
- **Password:** David123!@

**Step 16:** Navigate to **Project -> Compute -> Instances**

The screenshot shows the OpenStack Compute Instances interface. The top navigation bar includes 'Project / Compute / Instances'. On the left, a sidebar with 'Compute' selected under 'Instances' has options for 'Overview', 'Instances' (which is active), 'Images', and 'Key Pairs'. The main content area displays a table with no items. A message box at the top right says 'Info: Scheduled deletion of Instance: alice-test-vm34'.

David should NOT see alice's instance because he's in a different project (finance).

**Screenshot Task:** Take a screenshot showing david's empty instance list (different project).

## Part 7: Managing Project Access

### Section 1: Add User to Multiple Projects

**Step 1:** Logout and login back as **admin**

**Step 2:** Navigate to **Identity -> Projects**

**Step 3:** Click on the Test\_project

**Step 4:** Go to the **Users** tab

The screenshot shows the Identity / Projects / Test\_project page. The 'Users' tab is selected. The table displays the following data:

Name	ID	Domain Name	Domain ID	Enabled	Description
Test_project	3bb3226221e64ca4a18267052169edd9	Default	default	Yes	Test

You should see alice and bob listed as members.

**Step 5:** Click **Manage Members**

## Step 6: Add david to the engineering project

- Find david in the available users
- Click the + button next to his name
- Select the **member** role
- Click **Save**

The screenshot shows a user interface for managing project members. At the top, there are three tabs: 'Project Information \*' (disabled), 'Project Members' (selected), and 'Project Groups'. Below the tabs are two tables.

**All Users:**

User	Action
placement	[+]
system_reader	[+]
David	[+]
system_member	[+]
cinder	[+]
neutron	[+]
alt_demo_member	[+]
nova	[+]
glance	[+]
alt_demo	[+]

**Project Members:**

User	Role	Action
alice	member	-
bob	member	-
admin	member	-

At the bottom right are 'Cancel' and 'Save' buttons.

**Screenshot Task:** Take a screenshot showing david added to the Test\_project project.

## Step 7: Verify via CLI

- Enter the command: `source ~/devstack/openrc admin admin`
- `openstack role assignment list --user david --names`

```

clean.sh      functions      lib       README.rst   tests
CONTRIBUTING.rst functions-common LICENSE   roles       tools
data          FUTURE.rst    local.conf  run_tests.sh tox.ini
doc           gate          Makefile   samples     unstack.sh
extras.d      HACKING.rst  openrc    stackrc
files         inc           playbooks  stack.sh
ubuntu@ubuntu:/opt/stack/devstack$ openstack role assignment list --user david --
-names
Missing value auth-url required for auth plugin password
ubuntu@ubuntu:/opt/stack/devstack$ source openrc admin admin
ubuntu@ubuntu:/opt/stack/devstack$ openstack role assignment list --user david --
-names
No User found for david
ubuntu@ubuntu:/opt/stack/devstack$ openstack role assignment list --user David --
-names
+-----+-----+-----+-----+-----+-----+
| Role   | User        | Group      | Project    | Domain   | System   | Inherited |
+-----+-----+-----+-----+-----+-----+
| member | David@Defau |           | finance@Def |          |          | False     |
|        | lt            |           | autl        |          |          |           |
| member | David@Defau |           | Test_projec |          |          | False     |
|        | lt            |           | t@Default   |          |          |           |
+-----+-----+-----+-----+-----+-----+
ubuntu@ubuntu:/opt/stack/devstack$ █

```

David should now have member role in both Test\_project and finance projects.

## Section 2: Test Cross-Project Access

**Step 8:** Create credentials file for david with Test\_project project

vim /david\_testp\_openrc

Press [INSERT] to edit

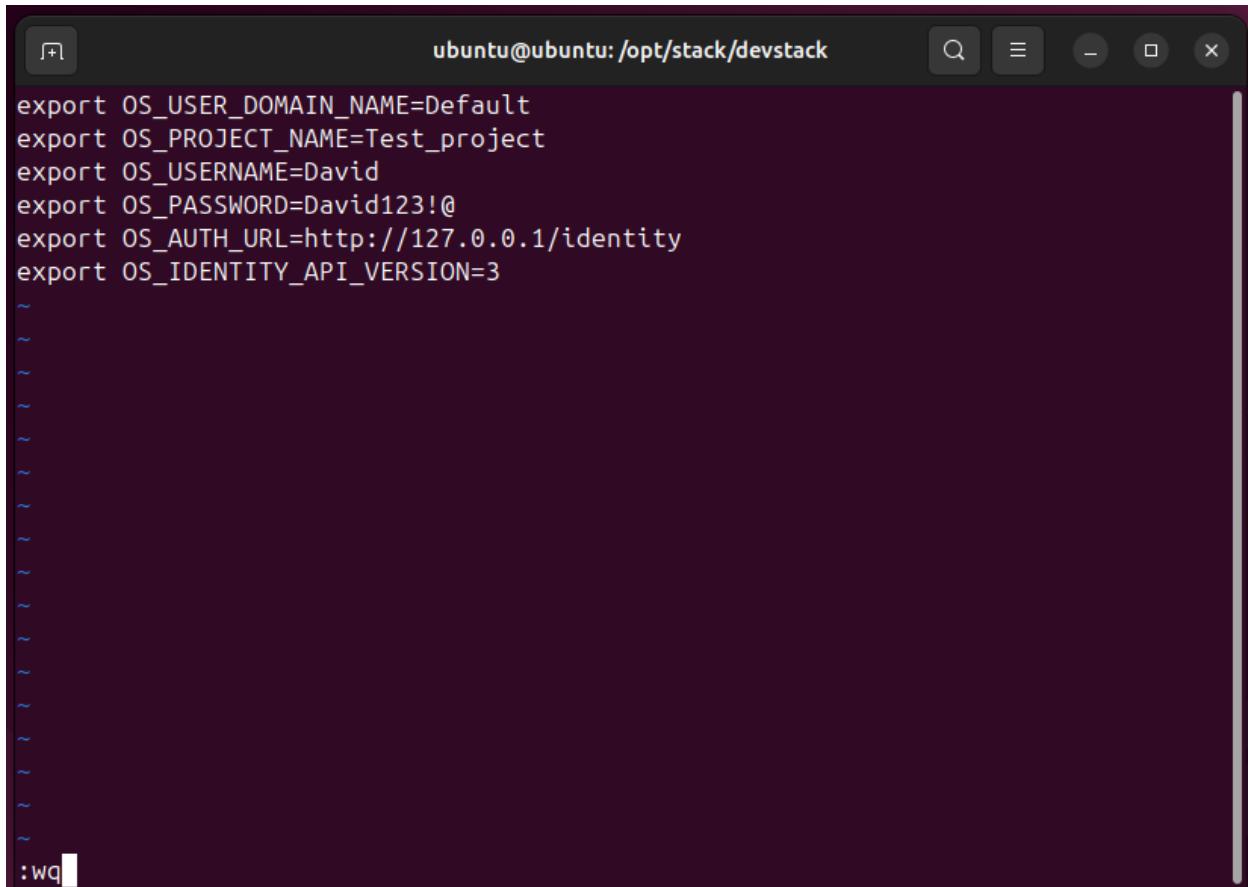
```

export OS_PROJECT_DOMAIN_NAME=Default
export OS_USER_DOMAIN_NAME=Default
export OS_PROJECT_NAME=Test_project
export OS_USERNAME=David
export OS_PASSWORD=David123!@
export OS_AUTH_URL=http://127.0.0.1/identity
export OS_IDENTITY_API_VERSION=3

```

Press [ESCAPE]

Enter :wq to save



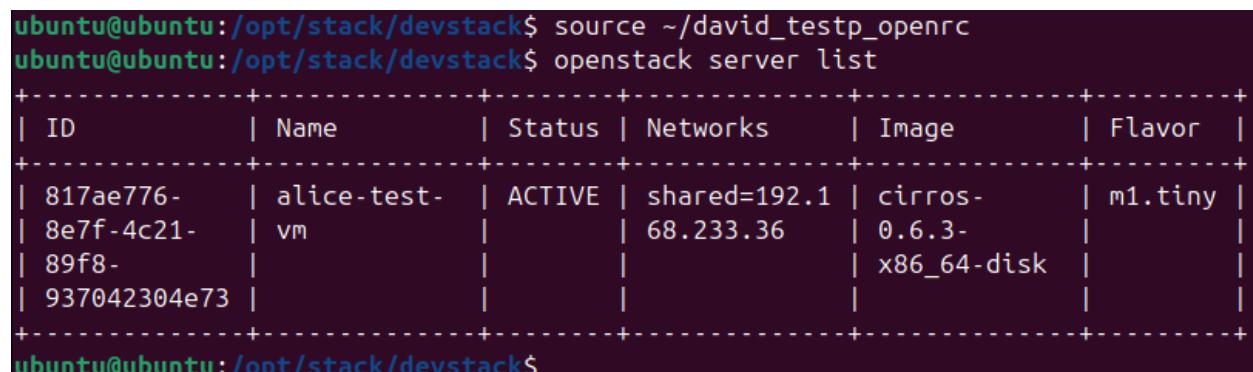
A screenshot of a terminal window titled "ubuntu@ubuntu: /opt/stack/devstack". The window contains several environment variable assignments:

```
export OS_USER_DOMAIN_NAME=Default
export OS_PROJECT_NAME=Test_project
export OS_USERNAME=David
export OS_PASSWORD=David123!@
export OS_AUTH_URL=http://127.0.0.1/identity
export OS_IDENTITY_API_VERSION=3
```

Below these, there are approximately 20 blank lines followed by the command ":wq" at the bottom of the screen.

### Step 9: Test david's access to Test\_project

- Enter the command: source ~/david\_finance\_openrc
- Enter the command: openstack server list



A screenshot of a terminal window showing the results of the commands entered in Step 9. The first command is "source ~/david\_finance\_openrc" and the second is "openstack server list". The output of the "openstack server list" command is a table:

ID	Name	Status	Networks	Image	Flavor
817ae776-	alice-test-	ACTIVE	shared=192.1	cirros-	m1.tiny
8e7f-4c21-	vm		68.233.36	0.6.3-	
89f8-				x86_64-disk	
937042304e73					

**Step 10:** Switch david to finance project

bash

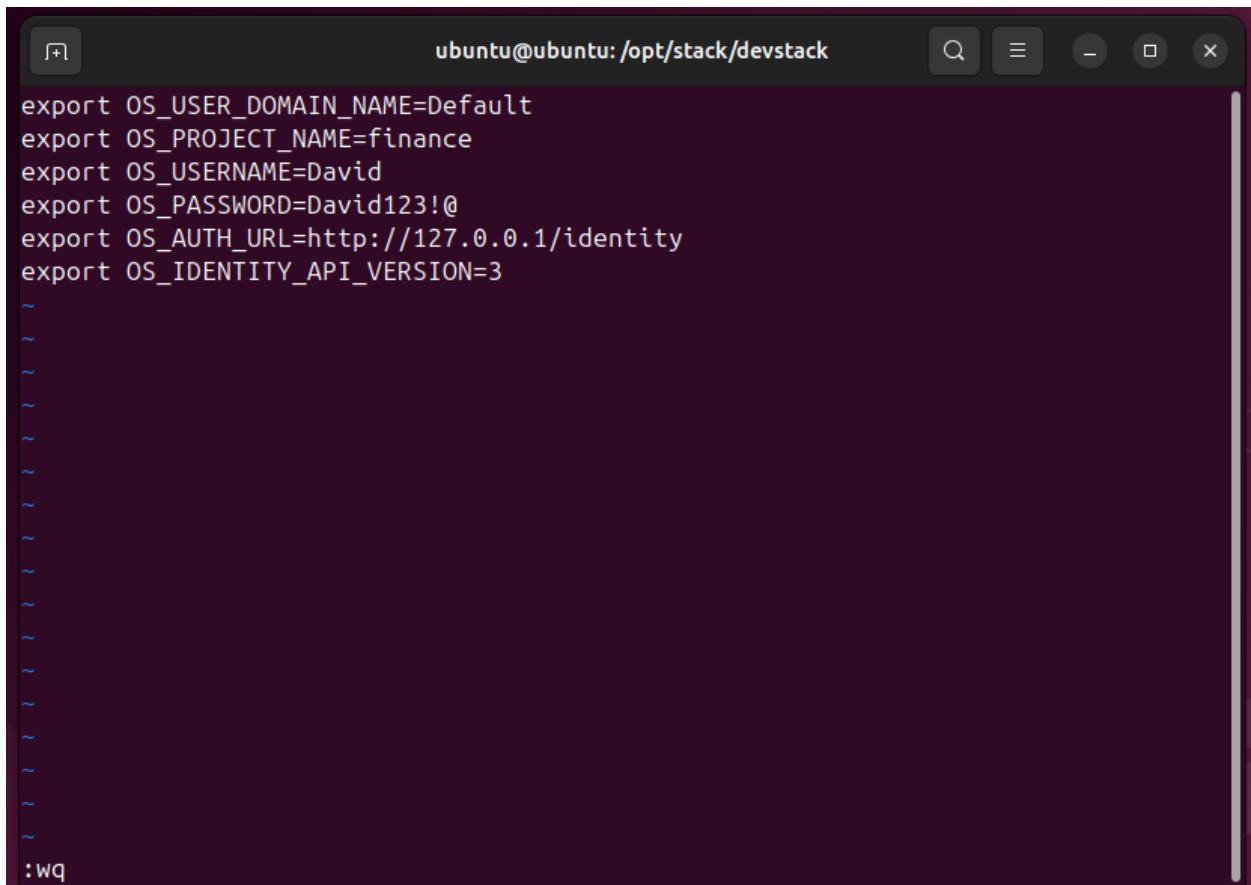
- Enter the command: Vim david\_testp\_openrc

Press [INSERT] to edit

```
export OS_USER_DOMAIN_NAME=Default  
export OS_PROJECT_NAME=finance  
export OS_USERNAME=David  
export OS_PASSWORD=David123!@  
export OS_AUTH_URL=http://127.0.0.1/identity  
export OS_IDENTITY_API_VERSION=3
```

Press [ESCAPE]

Enter: WQ to save and exit



The screenshot shows a terminal window titled "ubuntu@ubuntu: /opt/stack/devstack". The window contains the following text:

```
export OS_USER_DOMAIN_NAME=Default  
export OS_PROJECT_NAME=finance  
export OS_USERNAME=David  
export OS_PASSWORD=David123!@  
export OS_AUTH_URL=http://127.0.0.1/identity  
export OS_IDENTITY_API_VERSION=3
```

At the bottom of the terminal, there are several small blue question mark icons followed by the command ":wq".

- Enter the command: source ~/david\_testp\_openrc
- Enter the command: openstack server list

```
ubuntu@ubuntu:/opt/stack/devstack$ source ~/david_testp_openrc
ubuntu@ubuntu:/opt/stack/devstack$ openstack server list
ubuntu@ubuntu:/opt/stack/devstack$
```

Nothing is shown because there are no instances in the finance group

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