INFO 3606

**OpenStack Virtual Machine Creation Lab 5: Transforming Ideas into Instances**

**Use Case Scenario:**

Welcome to the OpenStack Virtual Machine Creation Lab – where you, as a student in a cloud computing class, embark on a journey to unleash the power of Nova, OpenStack's instance management component. Imagine you are part of a cloud computing course, and your assignment is to build and deploy virtual machines (VMs) for various use cases, from development environments to testing innovative applications.

**Part 1: Allocating Floating IPs**

Envision a scenario where your class is working on collaborative coding projects, and each student or group needs external access to their VMs. As part of this lab, you will explore the Floating IP concept, ensuring that each VM has its own address for external access. This is crucial for collaboration and showcasing your projects to external stakeholders.

**Part 2: Creating an OpenStack Image**

In the cloud computing class, different projects demand different operating systems and configurations. As a student, you have the freedom to create your own images based on project requirements. The lab introduces you to the process of creating an OpenStack image, allowing you to customize VM environments for specific project needs.

**Interactive Lab Activities:**

*Activity 1: Allocating Floating IPs*

- Your task: Log in with your student credentials, navigate to Project ➤ Compute ➤ Access & Security ➤ Floating IPs, and allocate a Floating IP to the project. This ensures that each student or group has a dedicated external IP for their VMs.

*Activity 2: Creating an OpenStack Image*

- Imagine your class working on diverse projects, each requiring a unique VM environment. As a student, you have the freedom to choose or create an image. Follow the guide to create an image, and explore the flexibility of deploying custom VM environments for your projects.

*Activity 3: Launching an Image Instance in OpenStack*

- Now, envision the excitement of launching VM instances based on the images you created. Move to Project ➤ Instances and launch a new instance. Choose flavors, allocate resources, and connect your VM to the network. The lab guides you through the process of bringing your virtual ideas to life.

*Activity 4: Associating Floating IPs*

- As part of the class projects, it's essential to make VMs accessible externally. Navigate to Compute ➤ Instances, associate a Floating IP with your VM, and ensure external connectivity. This step is crucial for testing your applications in a real-world scenario.

**Conclusion:**

Through these hands-on activities, you, as a student in the cloud computing class, not only learn the technical aspects of launching VMs in OpenStack but also experience the freedom to customize your computing environment. Allocating Floating IPs, creating custom images, and launching instances become essential skills for your journey in cloud computing. The OpenStack Nova component becomes your tool for turning theoretical concepts into practical applications, setting the stage for collaborative and innovative projects within your cloud computing class.