



# OS220: OpenStack Administration & Operations

Course ID #: 7000-461-ZZ-Z

Hours: 21

## Course Content

### Course Description:

The OpenStack Administration and Operations course is a 3 day class designed to provide you with a complete experience with administering and operating the most common OpenStack components to implement Infrastructure as a Service (IaaS) in a private cloud; from image management to instance creation to network plugins and more. At the end of this course, you have the skills required to pass the COA exam. All Mirantis OpenStack courses are vendor agnostic. Tasks are performed in an OpenStack environment without any vendor add-ons that might change the way OpenStack works. Reference implementations are utilized, such as Logical Volume Manager (LVM) for Block Storage, Open vSwitch (OVS) for L2 networking, or KVM/QEMU for the hypervisor.

### At Course Completion:

Students will learn:

- Keystone (Identity service): Authenticating with Keystone, managing tokens, RBAC policies, & the purpose of the Service Catalog
- Glance (Image service): Creating & managing images, options to build an image, the purpose of cloud-init
- Neutron (Network service): Understand what networks OpenStack uses, such as, the management network. Neutron architecture, including plugins, namespaces, layer 2 protocols, layer 3 routing, Neutron security groups, and more.
- Nova (Compute service): Using Nova to deploy virtual machine (VM) instances & control where the instances are deployed. Deploying instances with SSH keys for better security. Understanding the supported hypervisors. Lastly, implementing resource quotas.
- Heat (Orchestration service): Discusses Heat templates, their syntax, and MANY practical day-to-day examples of Heat templates, including examples of installing and configuring software on your instances at boot.
- Octavia (LBaaS): Use the CLI to create & manage a load balancer and load balancer resources
- Ceilometer / Aodh (Telemetry services): Discuss the role & architecture of each component. Review a sample application with load balancing and autoscaling



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## Prerequisites:

- Solid Linux command line skills
- OS100 or equivalent experience, including:
- Familiarity with the OpenStack Dashboard UI & command line client

Although not required, an understanding of hypervisors, virtualization, networking, and storage concepts is beneficial

## Target Student:

This course is targeted at students with the following skills:

- Basic understanding of cloud and virtualization technologies
- Basic hypervisor skills are beneficial, such as KVM or VMware, but not required
- Basic Linux skills
- Basic understanding of OpenStack
- Motivations: Learn the critical skills needed to operate and administer an OpenStack environment
- Roles: System/network administrators, Technical IT Professionals, Deployment engineers, Cloud administrators, & Cloud operations