# OpenStack Administration II: Deploy Control Plane Services and Manage Data Plane Nodes (CL270) Training

Duration: **5 Day**

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## Deploying and Managing Red Hat OpenStack Services on OpenShift

**OpenStack Administration II: Deploy Control Plane Services and Manage Data Plane Nodes (CL270)** is designed for Red Hat OpenStack administrators who want to strengthen their skills in deploying, managing, and scaling Red Hat OpenStack Services on OpenShift.

Throughout the course, participants learn the processes, technologies, and tools required to establish a functional OpenStack cluster. The training also focuses on managing and troubleshooting data plane nodes that host workloads for cloud users.

Through hands-on exercises and practical scenarios, participants learn how to install prerequisite operators and create the custom resources required for an OpenStack environment. They also develop troubleshooting and management skills for OpenStack compute nodes by working with the External Data Plane Management (EDPM) automation engine.

This course is based on **Red Hat OpenStack Services on OpenShift 18**.

## Organizational Impact

The skills developed through CL270 can help organizations establish advanced technical capabilities for deploying, managing, and troubleshooting **Red Hat OpenStack Services on OpenShift** environments.

Effective deployment and management of OpenStack control plane and data plane components can help organizations operate their cloud infrastructure in a more controlled manner while preparing OpenStack environments to reliably support cloud user workloads.

## Individual Impact

After completing this course, Red Hat OpenStack administrators will be better prepared to deploy and scale **Red Hat OpenStack Services on OpenShift** environments.

Participants develop practical experience with deploying the OpenStack control plane, preparing RHEL servers for use as data plane nodes, managing data plane node sets, and configuring RHOSO cluster resources to support cloud user workloads.

They also strengthen their ability to manage and troubleshoot OpenStack compute nodes by working with the External Data Plane Management (EDPM) automation engine.

# Prerequisites

Participants should have or consider the following knowledge, qualifications, and experience:

- Taking the Red Hat skills assessment is recommended to determine whether the course

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matches your current skill level
- A **Red Hat Certified Engineer (RHCE)** certification, or equivalent skills in Ansible automation and RHEL administration, is recommended
- Completion of **OpenStack Administration: Control Plane Management (CL170)** or equivalent experience with the fundamental administration of Red Hat OpenStack Services on OpenShift

## Who Should Attend

This course is particularly suitable for:

- Platform engineers responsible for administering and maintaining Red Hat OpenStack clusters
- Cloud administrators who manage Red Hat OpenStack-based cloud infrastructure
- System administrators who need to deploy, operate, and maintain Red Hat OpenStack clusters

## What You Will Learn

The course covers the following key areas:

- Evaluating a data center environment against commonly used architectures and preparing the environment for a Red Hat OpenStack Services on OpenShift deployment
- Installing the OpenStack Operator and evaluating the health of its dependent operators
- Inspecting available network and storage resources and deploying an OpenStack control plane
- Preparing RHEL servers with the resources required to operate as data plane nodes
- Creating custom resources for a node set and data plane and verifying that the deployed data plane can support a test user workload
- Adding and removing data plane nodes from a node set and validating the services operating on individual nodes
- Configuring RHOSO cluster resources to support cloud user workloads

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## Training Outline

### 1. Preparing to Deploy a RHOSO Cluster

Evaluate an existing data center environment and compare it with commonly used architectures. Prepare the infrastructure and resources required to begin installing Red Hat OpenStack Services on OpenShift (RHOSO).

### 2. The OpenStack Operator

Configure the prerequisite operators and required resources, and then install the OpenStack Operator to prepare the environment for the OpenStack deployment.

### 3. Deploying a RHOSO Control Plane

Configure the OpenShift custom resources required for an OpenStack control plane and use them to deploy the control plane.

### 4. Preparing RHEL Servers for Data Plane Deployment

Prepare and configure RHEL servers with the resources they require before being added to the RHOSO environment as data plane nodes.

### 5. Deploying a RHOSO Data Plane

Create the required custom resources for a node set and data plane. After deployment, verify that the data plane is capable of successfully handling a test user workload.

### 6. Managing Data Plane Node Sets

Learn how to add and remove data plane nodes from a node set. Inspect the services operating on individual nodes, troubleshoot problems, apply the necessary fixes, and verify that the services are functioning correctly.

### 7. Preparing a RHOSO Cluster for User Workloads

Configure RHOSO cluster resources so that the environment is prepared to support and run cloud user workloads.

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