

Red Hat OpenShift 4 System Administration

Day1

OpenShift Container Platform architecture

- Overview of Red Hat Enterprise Linux CoreOS (RHCOS)
- Crio Overview
- Podman Overview
- Overview of journactl

Installation, Upgradation and its troubleshooting

- Understand the underline infrastructure/resources requirements.
- Know Quay.io
- Know Redhat Registry
- Installation with IPI
- Installation with customized network plugins
- **Troubleshooting installation issues**
 - Gathering logs from a failed installation
 - Manually gathering logs with SSH access to your host(s)
 - Manually gathering logs without SSH access to your host(s)
 - Getting debug information from the installation program
 - Login to master nodes and worker nodes

Day 2

Post_installation_configuration and Troubleshooting

- Configuration of Authentication with Htpasswd
- Configuration of Authentication with Azure AD (Optional)
- Remove the default virtual admin user (kubeadmin)
- Secure Api with ssl certificate
- Secure Route with Route
- Setting the Ingress Controller
- Configuration Default Quota project template
- Configure default limits
- Restrict user for LoadBalancer service.
- Configure Alert Manager
- Updating the global cluster pull secret
- Configure Autoscaling for nodes
- Exposing OpenShift Internal Registry
- Login to Internal Registry ,pull and push images

- Monitoring pods

Day 3

OpenShift Backup and DR (Optional)

- Installation and Configuration of Kasten/Velero
- Setup the backup of etcd
- Recovering from the etcd backup

Post-installation node tasks

- Configuring Machine health checks
- Node host best practices
- Configure different type of profile
- Updating ssh keys for master and worker nodes

Post-installation storage configuration

- Dynamic provisioning
- Defining a storage class

OpenShift Scc and troubleshooting

- Understanding default scc
- Creating and user custom scc
- Unable to deploy application because of scc
- Adding a service account to deploy an application

Pod Scheduling and Troubleshooting

- Default scheduling
- Infrastructure Topological Levels
- Affinity
- Anti Affinity
- Advanced scheduling
 - Pod Affinity and Anti-affinity
 - Node Affinity
 - Node Selectors
 - Taints and Tolerations

Day 4

C2 - Restricted

Managing Sensitive Information with Secrets

- Guided Exercise: Managing Sensitive Information With Secrets
- Controlling Application Permissions with Security Context Constraints (SCCs)
- Guided Exercise: Controlling Application Permissions with Security Context

Configuring OpenShift Networking Components

- Controlling Cluster Network Ingress
- Guided Exercise: Controlling Cluster Network Ingress
- Lab: Configuring OpenShift Networking Components

Scaling an Application

- Scaling an Application
- Controlling Pod Scheduling
- Scaling an OpenShift Cluster
- Manually Scaling an OpenShift Cluster
- Guided Exercise: Manually Scaling an OpenShift Cluster
- Automatically Scaling an OpenShift Cluster

Managing a Cluster with the Web Console

- Performing Cluster Administration
- Guided Exercise: Performing Cluster Administration
- Managing Workloads
- Guided Exercise: Managing Workloads
- Examining Cluster Metrics
- Guided Exercise: Examining Cluster Metrics
- Lab: Managing the Cluster with the Web Console
- Lab: Install, manage, and troubleshoot an OpenShift cluster
- Troubleshooting

Day 5

- Pod related issues
 - Router/Registry Not deploying to correct node
 - Failure to deploy registry (permissions issues)
 - Application Pod fails to deploy
- Issues with Nodes
 - Nodes being reported as ready, but builds failing
 - Node reporting NotReady
 - Nodes report ready but ETCD health check fails

- Atomic-openshift-node service fails to start
 - Must make a non-zero request for cpu
- Issues related to Identity
 - user is unable to login
 - user has two identities
 - How to impersonate user
 - login with service account