

Red Hat OpenShift Course Outline

Duration – 20 hours

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| 1. Introduction to OpenShift | 1.5 hours |
| <ul style="list-style-type: none">• Overview of OpenShift and Kubernetes• Benefits of OpenShift• OpenShift Architecture• Key Terminologies• Lab: Navigating the OpenShift Console | |
| 2. Setting Up OpenShift Environment | 2.5 hours |
| <ul style="list-style-type: none">• OpenShift Installation Options (Local & Cloud)• Setting Up OpenShift on Red Hat, AWS• Accessing the OpenShift Cluster• Lab: Setting Up Your First OpenShift Cluster | |
| 3. OpenShift Core Concepts | 2 hours |
| <ul style="list-style-type: none">• Projects, Namespaces, and Users• OpenShift CLI (oc) Basics• Pods, Deployments, and ReplicaSets• Services and Routes• Lab: Creating and Managing Projects, Pods, and Services | |
| 4. Working with Applications in OpenShift | 2 hours |
| <ul style="list-style-type: none">• Deploying Applications• Configuring Applications (Environment Variables, ConfigMaps, Secrets)• Scaling Applications• Lab: Deploying a Sample Application | |
| 5. OpenShift Networking | 2 hours |
| <ul style="list-style-type: none">• Service Mesh Overview• Networking Components in OpenShift• Routes, Ingress, and Traffic Management• Lab: Configuring Routes and Ingress | |

6. OpenShift Storage	2 hours
<ul style="list-style-type: none">• Persistent Storage and Volumes• Storage Classes and Persistent Volume Claims• Managing Storage in OpenShift• Lab: Attaching Persistent Storage to Applications	
7. OpenShift Security	2 hours
<ul style="list-style-type: none">• Role-Based Access Control (RBAC)• Security Context Constraints (SCCs)• Networking Security (Network Policies)• Lab: Configuring Security for Applications	
8. Monitoring and Logging	2 hours
<ul style="list-style-type: none">• Built-in Monitoring Tools (Prometheus, Grafana)• Logging with EFK Stack (Elasticsearch, Fluentd, Kibana)• Troubleshooting Applications• Lab: Monitoring an Application's Performance	
9. Managing OpenShift Clusters	1.5 hours
<ul style="list-style-type: none">• Cluster Administration Basics• Updating and Scaling Clusters• Cluster Health Checks and Maintenance• Lab: Cluster Management Tasks	
10. Advanced Topics	1.5 hours
<ul style="list-style-type: none">• Operators and OperatorHub• OpenShift Service Mesh and Serverless• Lab: Deploying an Operator	
11. Conclusion and Best Practices	1 hours
<ul style="list-style-type: none">• Best Practices for Managing OpenShift• Resources for Further Learning• Q&A and Recap• Lab: Final Project - Deploy a Multi-Tier Application	