Container Adoption Boot Camp (DO700) Training

Duration: **10 Day**

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Supporting Enterprise Adoption of Containers, Kubernetes, and DevOps

Container Adoption Boot Camp for Administrators (DO700) is an intensive, hands-on learning program focused on managing container-native applications at enterprise scale with Red Hat OpenShift Container Platform, Red Hat's implementation of Kubernetes.

The course is designed for administrators who are adopting container, Kubernetes, and DevOps technologies and need to support an expanding number of clusters, users, applications, and stakeholders.

The skills developed throughout DO700 can be applied to both self-managed OpenShift environments and managed service offerings such as **Red Hat OpenShift on AWS (ROSA)** and **Azure Red Hat OpenShift**.

Enrollment also includes one year of **Red Hat Learning Subscription Standard**, providing unlimited access to Red Hat's online training catalog. Participants may attempt up to five unique exams and retake those exams if they do not pass successfully.

This collection of courses is based on **Red Hat OpenShift Container Platform 4.14**.

Organizational Impact

DO700 is designed to provide administrators who are new to container technologies with both foundational and advanced skills for configuring, managing, and automating Red Hat OpenShift Container Platform.

The skills developed in the boot camp support the deployment of highly available, resilient, and scalable containerized applications.

Red Hat OpenShift Container Platform can help organizations accelerate application development and deployment, support application portability across environments, and simplify the scaling, administration, and maintenance of adapted and cloud-native applications.

Individual Impact

After completing DO700, participants will be better prepared to configure and manage Red Hat OpenShift Container Platform 4 clusters at enterprise scale.

Participants will be able to:

- Configure security controls for users, applications, and networking
- Integrate OpenShift with enterprise authentication, storage, and GitOps systems
- Apply configurations that improve IT operations productivity and support organizational compliance requirements
- Use troubleshooting techniques to identify issues involving containerized applications, cluster operators, and compute capacity

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Recommended Next Exams

After completing DO700, participants can continue with the following certification exams:

- **Red Hat Certified OpenShift Administrator (EX280)**
- **Red Hat Certified Specialist in OpenShift Automation and Integration (EX380)**

Prerequisites

Participants should have one of the following:

- **Red Hat Certified System Administrator (RHCSA)** certification
- Or equivalent practical experience with Linux system administration

Who Should Attend

This course is particularly suitable for:

- System administrators adopting container and Kubernetes technologies
- Cloud administrators responsible for OpenShift-based environments
- Site Reliability Engineers (SREs) who support reliability and operations in production OpenShift environments

What You Will Learn

The course covers the following key areas:

- Introduction to Kubernetes and Red Hat OpenShift
- Deploying and troubleshooting containerized applications on OpenShift
- Controlling access to projects through Role-Based Access Control (RBAC)
- Configuring authentication and identity management for OpenShift
- Isolating applications by using network policies
- Controlling resource consumption with quotas and limits
- Automating OpenShift administration with the OpenShift GitOps operator
- Deploying packaged applications with Helm charts and OpenShift templates
- Provisioning persistent storage according to application requirements
- Backing up and restoring containerized applications with the OpenShift API for Data Protection (OADP) operator

Training Outline

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1. Introduction to Kubernetes and OpenShift

Identify the major Kubernetes cluster services and OpenShift platform services, and use the web console to monitor their status and operation.

2. Kubernetes and OpenShift Command-Line Interfaces and APIs

Access an OpenShift cluster through the command line and query Kubernetes API resources to evaluate overall cluster health.

3. Run Applications as Containers and Pods

Run containerized applications as unmanaged Kubernetes pods and develop troubleshooting skills for resolving common application issues.

4. Deploy Managed and Networked Applications on Kubernetes

Deploy applications on Kubernetes and expose them to network access from both inside and outside the cluster.

5. Manage Storage for Application Configuration and Data

Externalize application configuration into Kubernetes resources and provision storage volumes for persistent application data.

6. Configure Applications for Reliability

Configure applications to work effectively with Kubernetes high-availability and resilience mechanisms.

7. Manage Application Updates

Manage repeatable application updates and support rollback of code and configuration when required.

8. Declarative Resource Management

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Deploy and update applications from resource manifests that can be parameterized for different target environments.

9. Deploy Packaged Applications

Deploy and update applications from packaged resource manifests that are prepared for sharing and distribution.

10. Authentication and Authorization

Configure authentication with the HTPasswd identity provider and assign roles to users and groups.

11. Network Security

Protect network traffic between applications running inside and outside the OpenShift cluster.

12. Expose non-HTTP/SNI Applications

Provide external access to applications without relying on an ingress controller.

13. Enable Developer Self-Service

Configure OpenShift clusters for secure self-service use by multiple development teams, and restrict self-service when project provisioning must remain under operations control.

14. Manage Kubernetes Operators

Install and update operators managed through the Operator Lifecycle Manager and the Cluster Version Operator.

15. Application Security

Run applications that require elevated or specialized privileges from the host operating system or Kubernetes environment.

16. OpenShift Updates

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Update an OpenShift cluster while minimizing disruption to applications already running in the environment.

17. Authentication and Identity Management

Integrate OpenShift with enterprise LDAP and OIDC identity systems and configure recognition of groups defined by those systems.

18. Backup, Restore, and Migration of Applications with OADP

Use OpenShift API for Data Protection (OADP) to back up and restore application configuration and data.

19. Cluster Partitioning

Configure selected cluster nodes so that they are dedicated to specific workload categories.

20. Pod Scheduling

Schedule workloads onto dedicated groups of cluster nodes and prevent other workloads from consuming those nodes.

21. OpenShift GitOps

Deploy OpenShift GitOps and use it to manage both clusters and applications.