[DO328]: Building Resilient Microservices with Istio and Red Hat OpenShift Service Mesh

Length : 3 days
Delivery Method : Instructor-led (Classroom)

Course Overview

Control, manage, trace, monitor, and test your microservices with Red Hat OpenShift Service Mesh

Building Resilient Microservices with Istio and Red Hat OpenShift Service Mesh (DO328) teaches students installation, service monitoring, service management, and service resilience of Red Hat OpenShift® Service Mesh.

Openshift created an enterprise-ready, multi-tenant platform that made deploying and scaling microservice applications efficient and easily repeatable. But as these architectures become larger and more complex, defining how these services interact with each other becomes increasingly difficult. Red Hat OpenShift Service Mesh comprises 3 products—Istio, Jaeger, and Kiali—that facilitate service interaction management, provide service tracing, and create a visual representation of communication pathways.

This course is based on Red Hat OpenShift® Container Platform 4.4 and Red Hat OpenShift Service Mesh 1.1.

Course Summary

- Install Red Hat OpenShift Service Mesh on an OpenShift cluster.
- Apply release strategies by controlling service traffic.
- Build service resilience with load balancing and failovers.
- Test service resilience with chaos testing.
- Enforce service security.
- Observe, measure, and trace network traffic with OpenShift Service Mesh.

Audience for this course

- This course is designed for developers who want to deploy and scale microservices applications.

Prerequisites for this course

- Attending Red Hat Certified Specialist in Cloud Infrastructure exam (DO283) or demonstrating equivalent experience in creating microservice applications is recommended, but not required
- Attending Red Hat OpenShift I: Containers & Kubernetes (DO180) and Red Hat OpenShift Development II: Containerizing Applications (DO288), and passing the Red Hat Certified Specialist in OpenShift Application Development exam (EX288), or possessing basic OpenShift experience, is strongly recommended

Impact on the organization
Employing microservice architectures with OpenShift and OpenShift Service Mesh enable organizations to improve application resilience and scalability, while decreasing developer overhead. Teams can reduce time to market and improve insights into their microservice architecture by being able to visualize and trace data flow throughout their applications. With these insights, organizations can optimally allocate resources and quickly identify defects in specific microservices applications.

Impact on the individual
You can use the concepts in this course to simplify service interactions and manage them efficiently. You will learn how to install and configure OpenShift Service Mesh to define, monitor, and manage service interaction within microservice architectures. This course is intended to illustrate the ease of OpenShift Service Mesh's "sidecar" approach and to highlight the product's benefits of service resilience and monitoring.

Course Outline

Module 1: Introduction to container technology
Lessons
- Describe how software can run in containers orchestrated by Red Hat OpenShift Container Platform.

Module 2: Create containerized services
Lessons
- Provision a server using container technology.

Module 3: Manage containers
Lessons
- Manipulate prebuilt container images to create and manage containerized services.

Module 4: Manage container images
Lessons
- Manage the life cycle of a container image from creation to deletion.

Module 5: Create custom container images
Lessons
- Design and code a Dockerfile to build a custom container image.

Module 6: Deploy containerized applications on OpenShift
Lessons
- Deploy single container applications on OpenShift Container Platform.

Module 7: Troubleshoot containerized applications
Lessons
- Troubleshoot a containerized application deployed on OpenShift.

Module 8: Deploy and manage applications on an OpenShift cluster
Lessons

- Use various application packaging methods to deploy applications to an OpenShift cluster, then manage their resources.

Module 9: Design containerized applications for OpenShift
Lessons
- Select a containerization method for an application and create a container to run on an OpenShift cluster.

Module 10: Publish enterprise container images
Lessons
- Create an enterprise registry and publish container images to it.

Module 11: Build applications
Lessons
- Describe the OpenShift build process, then trigger and manage builds.

Module 12: Customize source-to-image (S2I) builds
Lessons
- Customize an existing S2I base image and create a new one.

Module 13: Create applications from OpenShift templates
Lessons
- Describe the elements of a template and create a multicontainer application template.

Module 14: Manage application deployments
Lessons
- Monitor application health and implement various deployment methods for cloud-native applications.

Module 15: Perform comprehensive review
Lessons
- Create and deploy cloudinative applications on OpenShift.

Note: Course outline is subject to change with technology advances and as the nature of the underlying job evolves. For questions or confirmation on a specific objective or topic, please contact enquiries@avantustraining.com.