Istio Certified Associate (ICA) Exam Curriculum

A Cloud Native Computing Foundation (CNCF)

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kubernetes

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Istio Certified Associate (ICA) Exam Curriculum

This document provides the curriculum outline of the Knowledge, Skills and Abilities that a Istio Certified Associate (ICA) can be expected to demonstrate.

ICA Curriculum

7% - Istio Installation, Upgrade & Configuration

- Using the Istio CLI to install a basic cluster
- Customizing the Istio installation with the IstioOperator API
- Using overlays to manage Istio component settings

20% - Securing Workloads

- Understand Istio security features
- Set up Istio authorization for HTTP/TCP traffic in the mesh
- Configure mutual TLS at mesh, namespace, and workload levels

40% - Traffic Management

- Controlling network traffic flows within a service mesh
- Configuring sidecar injection
- Using the Gateway resource to configure ingress and egress traffic
- Understanding how to use ServiceEntry resources for adding entries to internal service registry
- Define traffic policies using DestinationRule
- Configure traffic mirroring capabilities

13% - Advanced Scenarios

- Understand how to onboard non-Kubernetes workloads to the mesh
- Troubleshoot configuration issues

20% - Resilience and Fault Injection

- Configuring circuit breakers (with or without outlier detection)
- Using resilience features
- Creating fault injection

kubernetes

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Cloud native computing uses an open source software stack to deploy applications as microservices, packaging each part into its own container, and dynamically orchestrating those containers to optimize resource utilization. The Cloud Native Computing Foundation (CNCF) hosts critical components of those software stacks including Kubernetes, Fluentd, Linkerd, Prometheus, OpenTracing and gRPC; brings together the industry's top developers, end users, and vendors; and serves as a neutral home for collaboration. CNCF is part of The Linux Foundation, a nonprofit organization. For more information about CNCF, please visit: https://cncf.io/.