

Cilium Certified Associate (CCA) Exam Curriculum

A Cloud Native Computing Foundation (CNCF)

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kubernetes



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COMPUTING FOUNDATION

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

CCA Curriculum

20% - Architecture

- Understand the Role of Cilium in Kubernetes Environments
- Cilium Architecture
- IP Address Management (IPAM) with Cilium
- Cilium Component Roles
- Datapath Models

18% - Network Policy

- Interpret Cilium Network Policies and Intent
- Understand Cilium's Identity-based Network Security Model
- Policy Enforcement Modes
- Policy Rule Structure
- Kubernetes Network Policies versus Cilium Network Policies

16% - Service Mesh

- Know How to use Ingress or Gateway API for Ingress Routing
- Service Mesh Use Cases
- Understand the Benefits of Gateway API over Ingress
- Encrypting Traffic in Transit with Cilium
- Sidecar-based versus Sidecarless Architectures

10% - Network Observability

- Understand the Observability Capabilities of Hubble
- Enabling Layer 7 Protocol Visibility
- Know How to Use Hubble from the Command Line or the Hubble UI

10% - Installation and Configuration

- Know How to Use Cilium CLI to Query and Modify the Configuration
- Using Cilium CLI to Install Cilium, Run Connectivity Tests, and Monitor its Status

10% - Cluster Mesh

- Understand the Benefits of Cluster Mesh for Multi-cluster Connectivity
- Achieve Service Discovery and Load Balancing Across Clusters with Cluster Mesh

10% - eBPF

- Understand the Role of eBPF in Cilium
- eBPF Key Benefits
- eBPF-based Platforms versus IPtables-based Platforms

6% - BGP and External Networking

- Egress Connectivity Requirements
- Understand Options to Connect Cilium-managed Clusters with External Networks



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CLOUD NATIVE COMPUTING FOUNDATION

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/>.