Introduction to Cilium

Course Number: WA3626

Duration: 1 days

Course Description

Cilium is an open-source networking and security project optimized for containerized workloads. This Cilium course explores Cilium's powerful capabilities for securing and managing containerized applications. Learners gain practical experience configuring Cilium within Kubernetes clusters and learn how it boosts network performance, scalability, and security.

Skills Gained

- Understand the Fundamentals of Cilium
- Understand eBPF (Extended Berkeley Packet Filter) and its role in Cilium
- Install Cilium in a Kubernetes cluster
- Implement network policies with Cilium
- Utilize Cilium's observability with Hubble

Prerequisites

All participants must have taken our Docker and Kubernetes Fundamentals course or have equivalent knowledge.

Training Materials

All Cilium training attendees receive comprehensive courseware.

Attendees will not need to install any software on their computers for this class. The class will be conducted in a remote environment that Ascendient Learning will provide; students will only need a local computer with a web browser and a stable Internet connection. Any recent version of Microsoft Edge, Mozilla Firefox, or Google Chrome will work well.

Course Details

Introduction to Cilium

- What is Cilium?
- Challenges in Kubernetes Networking
- Networking with Cilium

eBPF and Its Role in Cilium

- Overview of eBPF
- How Cilium Leverages eBPF
- Benefits of Using eBPF for Networking and Security

Setting Up Cilium

- Pre-requisites for Installation
- Installing Cilium on Kubernetes Clusters
- Validating the Installation

Cilium Networking Fundamentals

- Understanding Cilium CNI
- Basic Networking with Cilium
- Troubleshooting Network Connectivity

Security Policies in Cilium

- Introduction to Cilium Network Policies
- Implementing Layer 3, Layer 4, and Layer 7 Policies
- Best Practices for Policy Design

Observability with Cilium

- Introduction to Hubble
- Setting Up Hubble Observability
- Monitoring Traffic and Debugging with Hubble

Additional Use Cases

- Multi-Cluster Networking with Cilium

- Cilium and Service Load Balancing