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# Score Training: Kubernetes Deployment Monitoring

2 days (14 hours)

## Overview

Score is a Kubernetes deployment monitoring tool that evaluates your manifests before they go into production. It helps reduce risks (security, reliability, costs) and standardize practices through measurable rules and thresholds.

This training aims to make your deployments more robust by integrating Score into a delivery pipeline: resource analysis (Deployments, Services, Ingress, RBAC), anti-pattern detection, and prioritization of fixes. You will learn to interpret results, define policies, and enforce safeguards.

The approach is hands-on: guided demos, workshops on a test cluster, followed by implementation in a CI pipeline. Deliverables include a set of rules tailored to your context, sample pipelines, and an acceptance checklist for manifest reviews.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

## Objectives

- Install and run Score on manifests and charts.
- Analyze the scores and identify priority risks.
- Correct Kubernetes resources according to recommendations.
- Define thresholds and validation policies (gates).
- Integrate Score into a CI/CD pipeline and automate reporting.

## Target Audience

- Developers deploying to Kubernetes
- DevOps / SRE engineers
- Kubernetes platform administrators
- Tech leads / software quality managers

## Prerequisites

- Basic understanding of Kubernetes (Pods, Deployments, Services)
- Reading and writing YAML manifests
- Experience using kubectl and a terminal
- Basic understanding of CI/CD (pipelines, jobs)

## Technical prerequisites

- PC with at least 8 GB of RAM (16 GB recommended)
- Linux, macOS, or Windows with WSL2
- Access to a test Kubernetes cluster (local or remote) and kubectl
- Tools: Git, code editor, Docker or compatible runtime

## Our Score Training Program

[Day 1 - Morning]

### Introduction to Score and Platform Engineering

- Understanding the Score philosophy: solving Kubernetes complexity for developers
- Key concepts: Workload specification and separation of responsibilities (Dev vs. Ops)
- Ecosystem overview: Score spec, CLI (score-k8s, score-compose), and CNCF incubation
- Technical comparison: Score vs. Helm vs. Kustomize (when and why to choose Score)
- Installation and Configuration: CLI, IDE Plugins, and Prerequisite Check
- Hands-on workshop: Setting up a project and writing your first functional score.yaml file

[Day 1 - Afternoon]

### Workload Modeling and Resource Management

- Advanced Syntax: Container Management, Environment Variables, and Volumes
- The Resource System: Declaring dependencies (DB, DNS, Redis) in an abstract manner
- Abstracting dynamic provisioning: bridging the gap with real-world infrastructure
- Network & Security: ports, probes, and resource limits (requests/limits)
- Validating Generated Manifests: Compliance and Reading YAML Output
- Hands-on Workshop: Creating a microservice with a database dependency, ready for Docker Compose and Kubernetes

[Day 2 - Morning]

## Abstraction and Multi-Environments

- Native Secrets Management: Integration and Security Best Practices
- Overlays and Configuration: Managing Dev/Staging/Prod Specifics Without Code Duplication
- Spec Extension: Adding Annotations and Labels for Observability
- Governance: Using Schemas to Ensure Score File Compliance
- Drift Analysis: Strategies for Reviewing and Validating Manifest Deltas
- Hands-on Workshop: Deploying a Single Specification Across Two Clusters with Distinct Security Policies

[Day 2 - Afternoon]

## Industrialization, CI/CD, and Governance

- GitOps integration: automatic generation pipelines (ArgoCD / Flux)
- Score in the IDP (Internal Developer Platform): Introduction to Orchestration (Humanitec, Backstage)
- Deployment testing: Validating the output with Policy-as-Code (Kyverno, OPA)
- Maintenance and Troubleshooting: Debugging Score-to-K8s Translation Errors
- Production deployment checklist and rollout strategies
- Hands-on workshop: Complete CI pipeline: from score.yaml to automated and secure deployment

## Relevant companies

This training is designed for both individuals and businesses—large or small—that wish to train their teams in new, advanced IT technologies or to acquire specific industry knowledge or modern methods.

## Placement Assessment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency in various types of technologies, as well as their expectations and personal goals for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth running of the training session.

## Teaching Methods

Practical Course: 60% Practical, 40% Theory. Training materials distributed in digital format to all participants.

## Organization

The course alternates between theoretical input from the trainer, supported by examples and reflection sessions, and group work.

## Certification

At the end of the session, a multiple-choice quiz is used to verify that the skills have been properly acquired.

## Certification

A certificate will be issued to each trainee who has completed the entire training program.