OPA in Practice Training

Duration: **2 Day**

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Overview

What Can You Achieve with This Training?

- Learn to build **consistent authorisation and governance policies** across applications, APIs, and infrastructure using **Open Policy Agent (OPA)** and **Rego**.
- Apply the **Policy as Code** approach to manage policy decisions across centralised and distributed environments.
- Gain practical experience with **Role-Based Access Control (RBAC)** and **Attribute-Based Access Control (ABAC)** in realistic scenarios.
- Develop skills in **writing, testing, troubleshooting, and integrating Rego policies** into technical systems.
- Explore policy management approaches for **Kubernetes/OpenShift, API security, cloud governance, and virtualisation** environments.

The **OPA in Practice Training** is a **two-day, hands-on technical course** designed to help engineers develop practical skills in **Open Policy Agent (OPA)** and **Rego**.

The course focuses on establishing **consistent authorisation and governance decisions** across applications, APIs, platforms, and infrastructure. Participants learn how to translate policy requirements into clearly defined decisions, identify the information needed for evaluation, implement rules using Rego, and verify the resulting outcomes.

Through technical demonstrations, guided exercises, and scenario-based workshops, delegates explore the practical aspects of policy development. The programme also covers **policy integration, deployment, distribution, and governance practices**.

Hands-on activities take place in a **browser-based OPA workshop environment**, using scenarios related to API authorisation, Kubernetes/OpenShift, cloud governance, and virtualisation. These exercises help participants understand how policy decisions can be designed, tested, and integrated into different technical environments.

Prerequisites

Participants should have:

- The ability to read basic **JSON** and technical configuration files
- A working understanding of applications, APIs, or infrastructure systems

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- Some scripting or programming experience (helpful but not mandatory)

No previous experience with OPA or Rego is required.

Who Should Attend

This course is suitable for:

- Engineers responsible for **authorisation and governance decisions** across applications, APIs, platforms, and infrastructure
- Technical professionals looking to develop practical expertise in **defining, implementing, and testing policies with OPA and Rego**
- Individuals involved in **policy integration, deployment, and governance** within cloud and virtualised environments

What You Will Learn

By the end of this course, participants will be able to:

- Explain how **OPA enables Policy as Code** and distinguish policy decision-making from enforcement.
- Identify suitable **OPA use cases** across applications, APIs, and infrastructure.
- Define a **decision contract** covering required inputs, trusted data sources, policy rules, and expected outcomes.
- Model access decisions using **RBAC, ABAC, roles, permissions, and contextual attributes**.
- Write and modify **Rego policies** using structured input and reference data.
- Perform permitted, denied, boundary, and missing-information tests while**troubleshooting unexpected policy results**.
- Compare **OPA deployment architectures** and explain policy bundles, distribution, and activation.
- Describe **policy ownership, change management, and integration responsibilities**.
- Implement, test, and present a **working Rego policy** for a practical scenario, including its integration assumptions.

Outline

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1. Open Policy Agent Fundamentals

- Introduction to the **Policy as Code** approach and the challenges addressed by OPA
- Understanding **input, reference data, policy evaluation**, and decision outcomes
- Exploring **Policy Decision Points (PDP)** and **Policy Enforcement Points (PEP)**
- **Guided exercise:** Tracing a request from its policy requirement through decision-making and enforcement

2. OPA Use Cases

- Exploring **API authorisation** and **Kubernetes/OpenShift admission** scenarios
- Reviewing governance requirements across cloud platforms, infrastructure, and software delivery workflows
- Identifying appropriate policy decisions and the responsibilities of integrating systems
- **Scenario exercise:** Defining the required decision, supporting facts, and enforcement point

3. Modelling Policies and Access Decisions

- Examining **subjects, roles, permissions, entitlements, actions, and resources**
- Comparing **Role-Based Access Control (RBAC)** with **Attribute-Based Access Control (ABAC)**
- Evaluating authoritative information sources, missing data, exceptions, and **decision contracts**
- **Workshop:** Transforming an incomplete scenario into a structured policy decision worksheet

4. Rego Fundamentals and Policy Testing

- Understanding **packages, rules, queries, input, and supporting data** in Rego
- Working with default behaviour, helper rules, and **structured decision results**
- Testing permitted, denied, boundary, and missing-information scenarios
- **Hands-on lab:** Evaluating, modifying, and testing policies in the Rego Playpen

5. Architecture, Governance, and Policy Distribution

- Examining system integration requirements and **trusted input data**
- Comparing **centralised, nearby shared, and sidecar deployment models**
- Understanding policy modules, **bundles, distribution mechanisms**, and runtime activation
- Reviewing policy ownership, approval, change review, promotion, auditing, and **rollback procedures**

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- **Technical demonstration:** Following a policy from local development through to distributed release

6. OPA in Action and Scenario Workshop

- Practising input preparation, policy evaluation, result interpretation, and **enforcement**
- Handling missing evidence, rejected requests, and unusable policy decisions
- **Hands-on workshop:** Implementing an agreed scenario decision contract using Rego
- Testing, troubleshooting, and explaining the completed policy and its **integration assumptions**