

Quality Assurance In Microservice Architectures

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2016

Introduction

Goals: explore strategies of building reliable QA system, that could cope with challenges specific for microservice architectures. Give an examples of existing tools and technologies. Consider different types of testing within key scenarios.

- ▶ Challenges of testing in microservice architectures.
- ▶ Types of tests (Cohn Test Pyramid), their purposes, scopes and quantities. Ice Cream Cone antipattern.
- ▶ Non-functional testing: performance, security.
- ▶ Rapid application deployment as a prerequisite for microservices. Deployment pipeline. Continuous integration, deployment and delivery.
- ▶ Releasing strategies: blue/green deployment, canary releasing, smoke tests.
- ▶ After release quality assurance: monitoring, DevOpsCulture.

Tools and Techniques

- ▶ xUnit framework
- ▶ stubbing and mocking (on the example of Mockito)
- ▶ smart stubbing with Mountebank
- ▶ testing of data passing between services (on the example of SOAP UI)
- ▶ consumer driven testing (on the example of Pact)
- ▶ End-to-End Testing (BDD Tools, JBehave, Cucumber)

Scenarios

We will consider all scenarios in the context of metasearch engine for information about hotels.

- ▶ Scenario 1: Testing microservices within application.
- ▶ Scenario 2: Testing microservices that use third-party service
- ▶ Scenario 3: Testing microservice that will be or is already exposed to public domain

References

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