Pivotal Application Service
Pivotal Certified Developer Java

Self-Study Course and Resources

OVERVIEW

This guide is intended to provide you with a self-study course and resources to help prepare you for the [Pivotal Developer Certification](#).

The certification is intended to test skills learned in the Pivotal [Platform Acceleration Lab (PAL) for Developer](#) courses provided by Pivotal Education. The content provided in this guide maps to the exam topics found in the [Study Guide](#). This document is intended to provide additional guidance to product guides, learning platform options, tutorials, and more. This will bolster your skills needed to pass the exam.

The content provided consists primarily of content available in the public domain or the Pivotal Partner Portal. We have also collected helpful content from powerful, but low cost providers such as PluralSight ($299 per person per year).

Contents:
- Self-Study Course Materials [40 hours]
- Test Your Knowledge [1 hour]
- Additional Resources

While not required, the [Cloud Foundry Certified Developer](#) is a great foundational certification to obtain prior to the Pivotal Developer Certification.

If you have feedback on the guide, please share with us via the [Feedback Form](#).

Pivotal.

Self-Study Course

The self-study course below will take you through self-paced content, labs and exercises to address the Pivotal Certified Developer [Exam Topics](#):

- Pivotal Application Service (PAS)
- Spring
  - Spring Boot
  - Spring MVC
  - Spring Cloud
- Cloud-native patterns and practices

PIVOTAL APPLICATION SERVICE [16 hours]

- [Pivotal Cloud Foundry Developer Training Course](#) Content [16 hours-No Cost]

SPRING [16 hours]

Spring Boot [2 hours]

- Building a Spring Boot app [[Spring Guide](#), 15 min.] [[Spring Guide w/Gradle](#), 15 min.]
- Deploy a Spring Boot app to Cloud Foundry [[Spring Guide](#), 15 min.]
- Deployment Pipelines for multiple environments [[Spring Lab](#), 1 hr.]

Spring MVC [3 hours]

- Spring MVC with REST endpoints [[Spring Guide](#), 15 min.]
- Cloud Foundry Services & Database migrations [[DBM Github Lab](#), 45 min.]
- Spring JDBC template [[Spring Guide](#), 15 min.] [[Github Lab](#), 30 min.]
- Spring Boot Actuator [[Spring Guide](#), 15 min.]
- HTTP Basic authentication and SSL with Spring Security [[Spring Guide](#), 1 hr.]

Spring Cloud [11 hours]

- Deploying distributed systems [[Spring Video](#), 1 hr. 15 min.] [[Spring Cloud Main Projects](#), ~30 min. /project]
- Service discovery and client-side load balancing [[Spring Guide](#), 15 min.] [[CS Load Balancing w/Ribbon and SC](#), 15 min.] [[SC CS Load Balancer Guide: Ribbon](#), 30 min.]
- Circuit breakers [[Spring Guide](#), 15 min.] [[Circuit Breaker: Hystrix Clients Guide](#), 15 min.]
- Securing a distributed system [[Observability SpringOne Video](#), 1 hr.] [[Decoding Spring One Video](#), 30 min.]
- Config server [[Spring Guide](#), 1 hr.] [[Spring Cloud Config Server Guide](#), 1 hr.]
- Service Discovery [[Spring Blog](#), 1 hr.] [[SpringOne Platform Video](#), 30 min.]
- Service Configuration [[Spring Guide](#), 30 min.] [[Spring Project](#), 30 min.]
- Cascading Failures [[Pivotal Blog](#), 30 min.] [[Martin Fowler Blog](#), 15 min.]
- Service Security [[Spring Project](#), 15 min.] [[Snyk Blog](#) 1 hr.]
- Service Monitoring [[SpringOne Platform Video](#), 30 min.]
- Distributed Tracing [[Spring Docs](#)., 30 min.]

Pivotal.

CLOUD-NATIVE PATTERNS AND PRACTICES [7.5 hours]
Best Practices / Architecture [5 hours]
- 12-Factor applications [12 Factor App Manifesto, 1 hr.] [Pivotal Blog, 15 min.]
- Domain Driven Design [101 Pivotal Blog, 15 min.] [201 Pivotal Video, 1 hr.] [Github Tutorial]
- Evolutionary Architecture [Blog Post 15 min.]
- Test First Development (TDD) [TDD Presentation, 30 min.] [Pivotal Blog, 5 min.] [SpringOne Platform Video, 30 min.]
- Pair rotation guide [Pivotal Blog, 15 min.] [SpringOne Platform Video, 1 hr.]
- The Application Continuum [Official Page, 30 min.] [Github Lab, 15 min.]

Continuous Delivery/Integration [2 hours]
- Concourse Overview [Concourse Overview, 15 min.] [SpringOne Case Study Video, 30 min.]
- Concourse Build Pipeline [Concourse Examples, 15 min.] [Github Samples, 1 hr.]

Microservices Benefits [Pivotal Whitepaper, 15 min.]
- Resilience
- Scaling
- Deployment
- Replaceability
- Organization Alignment
- Service Versioning
- Service Reuse

Reinforce Your Knowledge

The following is a tutorial from Spring Developer Advocate Mark Heckler. It will test your knowledge of Spring Boot, Cloud Foundry, and the concepts above. This Spring Cloud Tutorial is a good place to start using your new skills. [1 hour]

Additional Resources

MEDIA:

- Cloud Native Java [1 hour]
- Breaking the Monolith [1 ½ hours]
- What to Do with Legacy Applications [1 hour, podcast]

BOOKS AND WHITEPAPERS:

- Migrating to Cloud-Native Application Architectures
- Beyond the 12 Factor App
- Application Replatforming
- Cloud-Native Java
- Learning Spring Boot 2.0

Pivotal

DOCUMENTATION:

Pivotal Application Service Key Concepts

- Applications
- Buildpacks
- Manifests
- Organizations and Spaces
- Users and Roles
- Domains and Routes
- Services
- Environment variables

PLURALSIGHT

$29/MON. | $299/YR.

Pivotal Application Service (PCF): Pivotal Cloud Foundry Developer [Intermediate]

Spring:

Java Microservices with Spring Cloud: Developing Services [Intermediate]

Core Spring [Path]

- Spring Fundamentals [Beginner]
- Spring Security Fundamentals [Intermediate]
- Creating Your First Spring Boot Application [Intermediate]
- Getting Started with Spring Data JPA [Beginner]
- Spring Boot: Efficient Development, Configuration, and Deployment [Intermediate]
- Architecting Web Applications with Spring [Intermediate]
- Java Microservices with Spring Cloud: Developing Services [Intermediate]
- Spring: The Big Picture [Beginner]
- Spring with JPA and Hibernate [Intermediate]
- Data Transactions with Spring [Intermediate]
- TDD with Spring and JUnit 5 [Intermediate]
- Spring Security: Authentication / Authorization - Building Effective Layers of Defense [Intermediate]
- Spring Retry: Getting Started [Beginner]
- Spring REST: Getting Started [Intermediate]
- Spring Data Mongo: Getting Started [Beginner]
- Spring Cloud Fundamentals [Intermediate]
- Introduction to Spring Cloud Contract [Beginner]
- Java Microservices with Spring Cloud: Developing Services [Intermediate]
- Java Microservices with Spring Cloud: Coordinating Services [Intermediate]
- Effective Automated Testing with Spring [Intermediate]

Other:

- Cloud Foundry for Developers [Beginner]
- Agile Fundamentals [Intermediate]
- Pair Programming [Beginner]
- Implementing DevOps in the Real World [Beginner]

Pivotal.