Cloud-Native Architect (CNA) Java

Experience best practices building Cloud Native applications in a hands-on setting with Pivotal educators and consultants. The program is focused on enabling customers and partners through “doing it” rather than “talking about it”.

The PAL teaches developers and architects how to build and architect cloud native software and covers the following topics; Pivotal Cloud Foundry, greenfield cloud native development, end state reference architectures, replatforming, modernization.

PLATFORM ACCELERATION LAB (PAL) APPROACH

Upon completion of this course, participants will understand how implement the following:

- Understand what Cloud Foundry is, and how it runs apps
- Learn about key app-centric Cloud Foundry constructs: app, manifest, buildpack, service instance, binding, domain, route, environment variables
- Understand how to perform app portfolio analysis in an agile way, making use of the “snap analysis” technique
- Learn how to avoid analysis paralysis
- Experience common impediments to running an app on Cloud Foundry, and overcome them
- Learn how to identify, codify, and make use of reusable patterns for building Cloud Native applications (i.e. understand distributed system development/ architectures)}
- Learn how to evolve monolithic apps to be Cloud Native (i.e. understand when and how to break out microservices from the monolith)

SKU

EDU-1135 or EDU-1166

DELIVERY METHODS

Public (classroom)
Private, onsite

DURATION

Three weeks

PREREQUISITES

Experience building and deploying modern software; i.e. TDD, CI/CD, and Refactoring. Familiarity with design patterns, domain driven design, component based architecture, and evolutionary architecture

Experience developing apps using: Java 6 and above, Java Enterprise Edition, Java/ Spring.

TARGET AUDIENCE

Developers and Lead Developers

MORE INFORMATION

Please contact platform-acceleration-lab@pivotal.io for more information.

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SUBJECTS AND SCHEDULE

CLOUD FOUNDRY, SPRING BOOT, CI

Best Practices / Architecture

- 12-Factor applications
- Domain Driven Design
- Evolutionary Architecture
- Test First Development (TDD)

Pivotal Cloud Foundry Concepts

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

Continuous Delivery / Integration

- Build Pipelines

Microservices

- Resilience
- Scaling
- Deployment
- Replaceability
- Organization Alignment
- Service Versioning
- Service Reuse

SPRING CLOUD SERVICES

- Service Discovery
- Service Configuration
- Cascading Failures
- Service Security
- Service Monitoring

The Cloud Native Developer

Spring Boot Developer

Building a Spring Boot app	LAB
Deploy a Spring Boot app to Cloud Foundry	LAB
Deployment Pipelines for multiple environments	LAB
Spring MVC with REST endpoints	LAB
Cloud Foundry Services & Database migrations	LAB
Spring JDBC template	LAB
Spring Boot Actuator	LAB
HTTP Basic authentication and SSL with Spring Security	LAB

Architecture

The Application Continuum	WEBSITE	SLIDES

Spring Cloud Developer

Deploying distributed systems	LAB
Service discovery and client-side load balancing	LAB
Circuit breakers	LAB
Securing a distributed system	LAB
Config server	LAB

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SUBJECTS AND SCHEDULE CONTINUED

RE-PLATFORMING

- Packaging, Build & Deployment
- Configuration
- Bootification
- Data Integration and Data Access Techniques
- Local & Distributed Transactions
- File System Access
- Logging
- Handling Batch and ETL Jobs
- Worker Process and Threading
- External Integrations
- Instance-Specific State
- Mavenization / Gradling
- Security

MODERNIZATION

- Struts to Spring
- Strangling The Monolith
- Microservices
- Data Refactoring Patterns
- Dual Data Storage / Single DB versus multiple DB
- Security
- Managing a Distributed System with Spring Cloud
- Modern JVM Languages
- Facades
- Event Decorators
- Branch By Abstraction

Replatforming

CF Push and Buildpacks	LAB
Spring Bootification	LAB
Managing Datasources	LAB
Removing Reads from the File System	LAB
Removing Persistence to the File System	LAB
Logging	LAB
Background Jobs with the Database	LAB
Background Jobs with AMQP	LAB
Remove Instance Specific State	LAB
Spring Bootification of Struts	LAB
Ant to Maven	LAB
Ant to Gradle	LAB

Modernization

Struts to Spring	LAB
Maven to Gradle	LAB
Multiple Jars	LAB
Microservices	LAB
Migrations	LAB
Security	LAB
Service Discovery	LAB
Config Server	LAB
Circuit Breaker	LAB
Kotlin	LAB

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Expiration Policy. Instructor-led public training course entitlement expires within 12 months from date of purchase (if purchased online), or 12 months from date of invoice (if purchased pursuant to a Purchase Order), after which You will not be entitled to a refund.

BUSINESS HOURS

Training Services shall be performed by Pivotal from 9:00 A.M. until 5:00 P.M. in the local time zone where the Training Services are being performed by Pivotal, Monday through Friday excluding local statutory holidays (for example, within the State of California for Pivotal's US employees), and any additional holidays that Pivotal grants to its employees, a list of which can be provided by Pivotal to you prior to the commencement of Training Services.

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