



CLOUD **FOUNDRY**



Introduction to Cloud Foundry and Cloud Native Software Architecture

Overview

Does your team use Cloud Foundry to deploy applications? Or would you like to use Cloud Foundry, but haven't had time to learn the lingo? Then this course is just what you need! Cloud Foundry makes it simple for developers to deliver business value more quickly, without wasting time getting their app to the cloud - it's already there.

This course is an introduction to Cloud Foundry, including distributions available to end users, an overview of the platform's components, and what it means to be Cloud Foundry certified. The course also includes technical instructions on how to use the command line interface, how applications are deployed, what services are within the context of the system and basic debugging practices.

Finally, the workshop will take you on a tour through what it means to build cloud-native applications architecturally and ideologically. In doing so, we will review the 12-factor method of composing modern distributed web systems.

Prerequisites

No prior experience with Cloud Foundry is assumed in this course.

Course Outline

Chapter 1. Welcome & Introduction

Chapter 2. Introduction to Cloud Foundry

- Monoliths
- Microservices
- Cloud Foundry

Chapter 3. Getting Started with the CLI

- Sign Up for Cloud Foundry
- Install the CLI
- Log into Cloud Foundry
- Get Help from the CLI

Chapter 4. Pushing Your First App

- The Push Command
- Lab 1: Push Your App
- Starting An App
- Introduction to Worker App
- Lab 2: Adding a Worker
- Cleaning Up an App
- Lab 3: Cleaning Up the Web App and the Worker App

Chapter 5. Buildpacks

- Language Runtime Support
- Buildpack Stages
- Choose a Buildpack
- Buildpack Commands

Chapter 6. The Twelve Factor Methodology

Chapter 7. Cloud Foundry Components I

- Routing
- Authentication
- Application Lifecycle

Chapter 8. Cloud Foundry Components II

- App Storage and Execution
- Services
- Messaging
- Metrics and Logging

Chapter 9. Resilience and Availability

- Basics of Scaling in Cloud Foundry
- Using the CLI to Scale the App
- Lab 1: Scaling Your App
- What Is the Health Monitor?
- Lab 2: Killing Some Apps

Chapter 10. Orgs, Spaces, Roles, and Permissions

- Business Management Modeling
- Putting It All Together

Chapter 11. Routes and Domains

- Internet Routing
- Cloud Foundry Domains and Routes

Chapter 12. Zero Downtime Deployments

- What Is Zero Downtime Deployment?
- Concepts
- What Concepts Make Zero Downtime Deployments Fail?
- How Zero Downtime Deployment Works in Cloud Foundry

Chapter 13. Cloud Native Design Patterns

- Service Discovery Design Pattern
- Configuration Server Design Pattern
- Circuit Breaker Design Pattern

Chapter 14. Debugging Distributed Systems

- Application Logging in Cloud Foundry
- Debugging Commands
- Distributed Tracing

Final Exam