

Cloud Foundry for DevOps



Who is this guy?

Mike Jacobi (a.k.a. sushiandbeer)

- 20+ years in the IT business in different industries
- From mainframe to cloud environments
- From COBOL to microservices
- 3 years working with Cloud Foundry
- Loves working with students and customers
- A Pivotal lead (“anchor”)
- Enjoys hiking

Who are you?

- Name
- What is your job?
- New to Cloud Foundry?
- Any specific goals for the class?

Day 1

Main Concepts of Cloud Foundry

- What is Cloud Foundry?
- Why is Cloud Foundry a major player in the PaaS world?
- Cloud Foundry architecture
- Getting help

Deploy BOSH

- BOSH architecture
- Installing the BOSH CLI
- Initializing an environment (for BOSH and CF)
- Deploying BOSH

Deploy Cloud Foundry

- Deploying Cloud Foundry using BOSH 2.0
- Running deployment jobs
- Verifying results using CATs

Day 2

Cloud Foundry Quick Start

- Connecting to the Cloud Foundry API
- Creating a user
- Creating an organization
- Creating a space
- Setting permissions to a space
- Targeting an org and a space
- Deploying an application
- Viewing logs
- Scaling applications

Cloud Foundry Org and Space Management

- Managing organizations
- Getting info about an organization
- Targeting organizations
- Getting info about spaces
- Modifying and deleting spaces

Quota Management in Cloud Foundry

- Quota structure
- Listing quotas
- Getting quota info
- Creating and managing quotas
- Modifying quotas
- Deleting quotas
- Assigning quotas
- Space quotas

Using Cloud Foundry Security Groups

- Structure
- Security groups scopes
- Creating security groups
- Binding security groups
- Viewing security groups
- Managing security groups

Day 3

Learn how the BOSH Director and the Agent work

- SSH into running VMs created by BOSH
- Investigating logs and BOSH Agent settings
- Seeing how the BOSH Director talks to a BOSH Agent in real time

Buildpacks

- What is a buildpack?
- The structure of a buildpack
- Creating a custom buildpack

High Availability

- An HA deployment
- Rolling updates
- Scaling Cloud Foundry

Security

- Web app SSO
- Configuring TLS and HTTPS
- Security key management (PKI)
- Security inside a CF cluster
- Secure network configuration

Day 4

Advanced Cloud Foundry CLI Usage

- What are CF CLI plugins?
- How can I install a CF CLI plugin?
- Several useful plugins for listing available resources, simplifying blue-green deployments and other tasks
- How to delete unnecessary plugins?
- Tracing API calls
- CLI plugins
- Raw API requests

Troubleshooting

- Debugging techniques: cf apps, cf events, and cf logs recent
- Remote debugging in CF
- Troubleshooting containerized services

Concourse automation

- Concourse basics
- Running a simple Concourse Pipelines to deploy a service

Schedule

- Breaks: 10:30 and 2:30pm (10 minutes break)
- Lunch: 12:00 to 1:00pm

Methodology

- Theory (slides, talking)
- Q&A
- Presentation of resources
- Exercises & quizzes