Right Abstraction

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About Me - Yogi

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- @yogendra
- Programmer for Life
- Passionate about Productivity
- Work at Pivotal
- Live in Singapore
- Regular at Local Community (CF, Spring UG, GDG-SG, Kotlin, GCP UG, etc.)

What is Abstraction?

Abstraction

the process of removing physical, spatial, or temporal details

“The essence of abstractions is preserving information that is relevant in a given context, and forgetting information that is irrelevant in that context”

– John V. Guttag

Challenges of Enterprises

Variety of Workloads

CONTAINERS

Batches

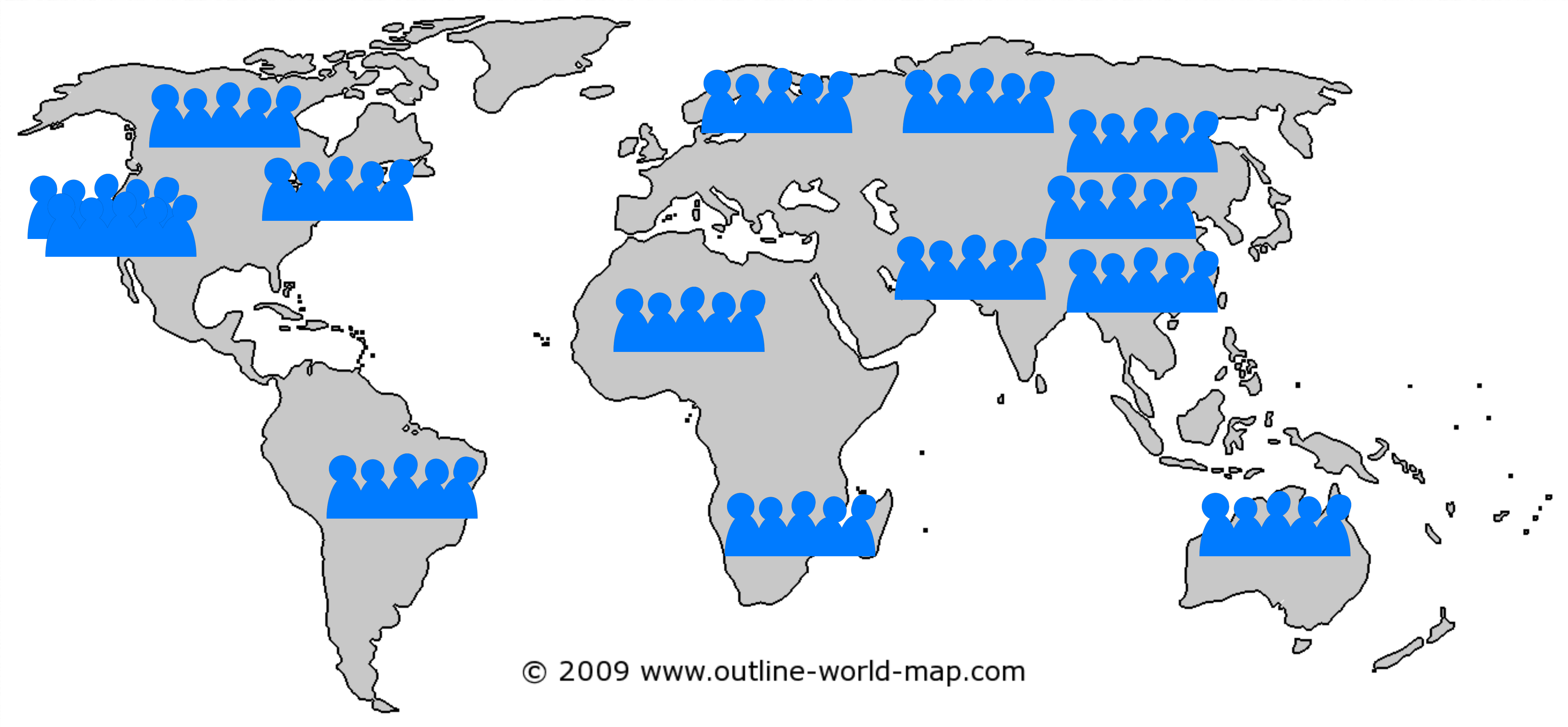
EVENT-DRIVEN FUNCTIONS

MICROSERVICES

DATA SERVICES

MONOLITHIC APPLICATIONS

Many Large Teams



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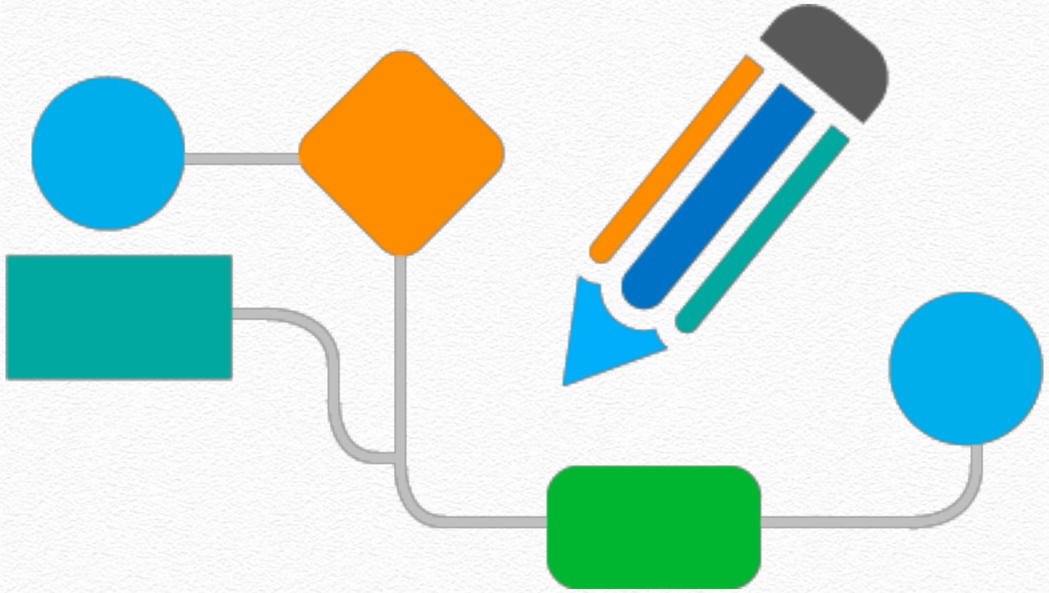
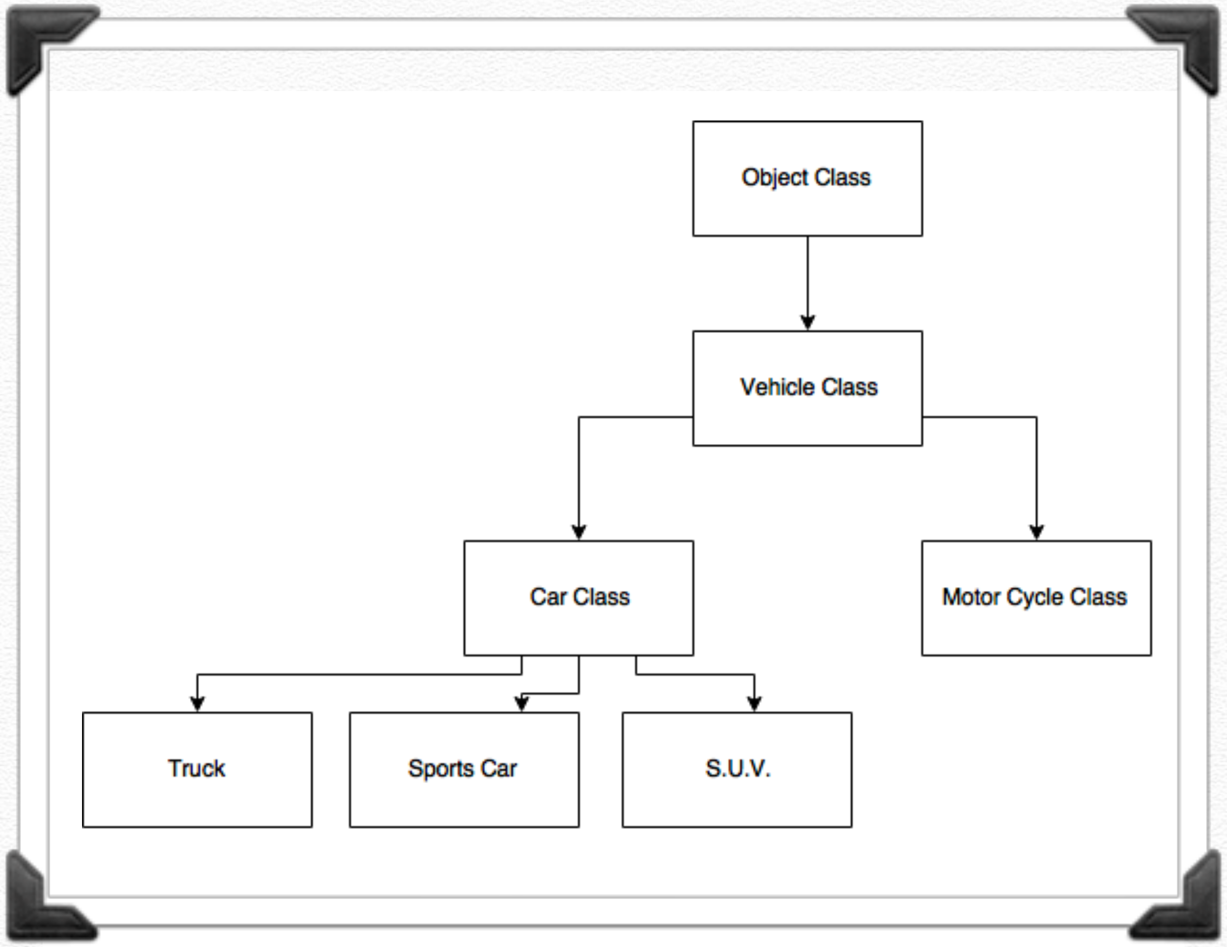
Large Legacy Investment

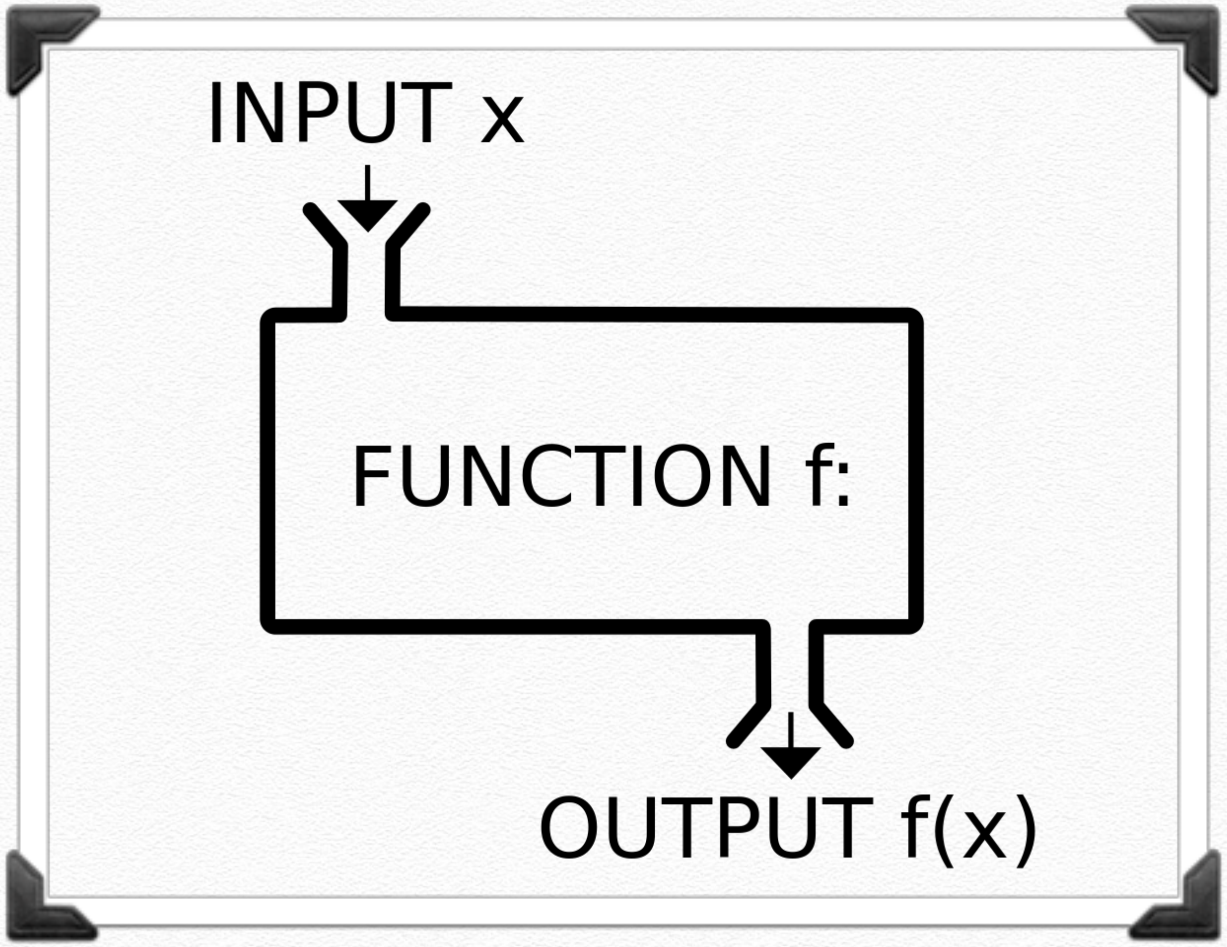


Abstraction in Software Engineering

Object Oriented Programming



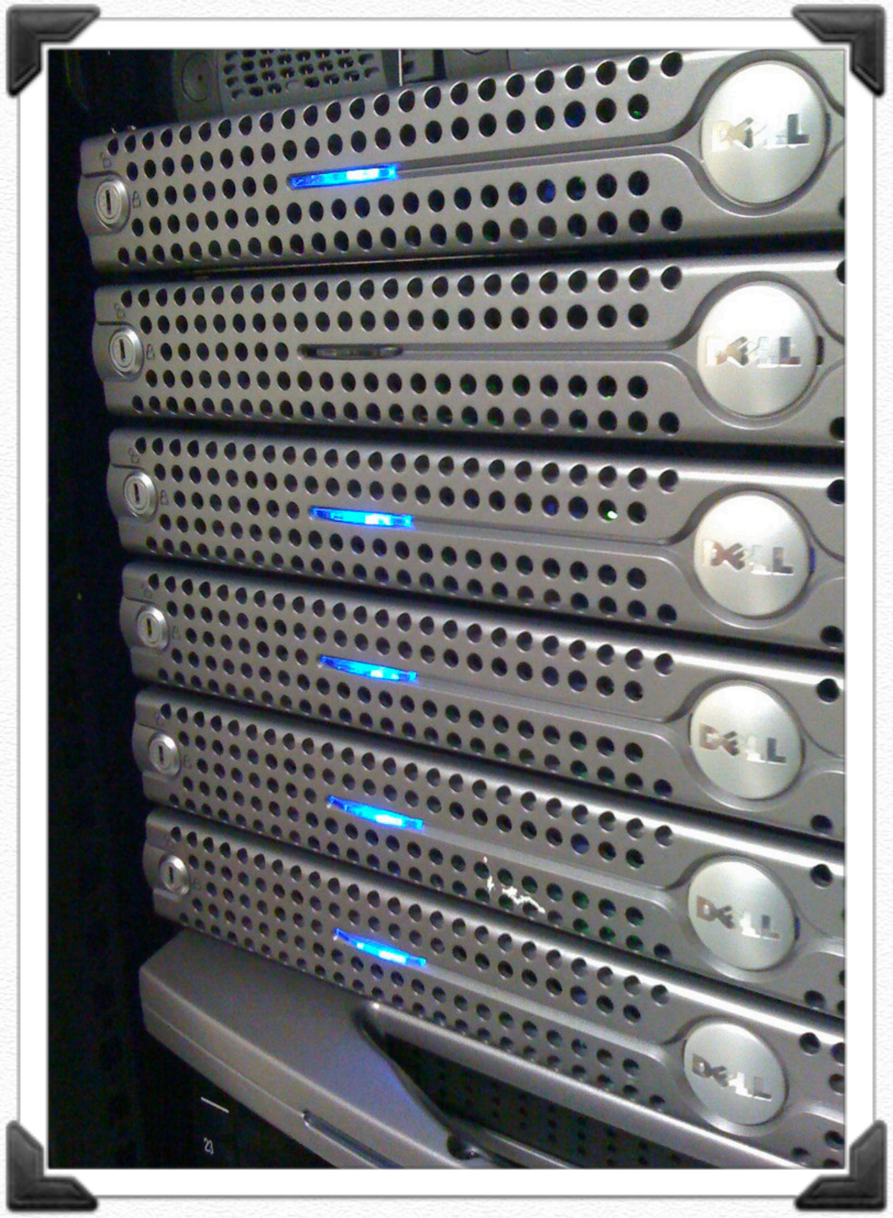
Functional Programming

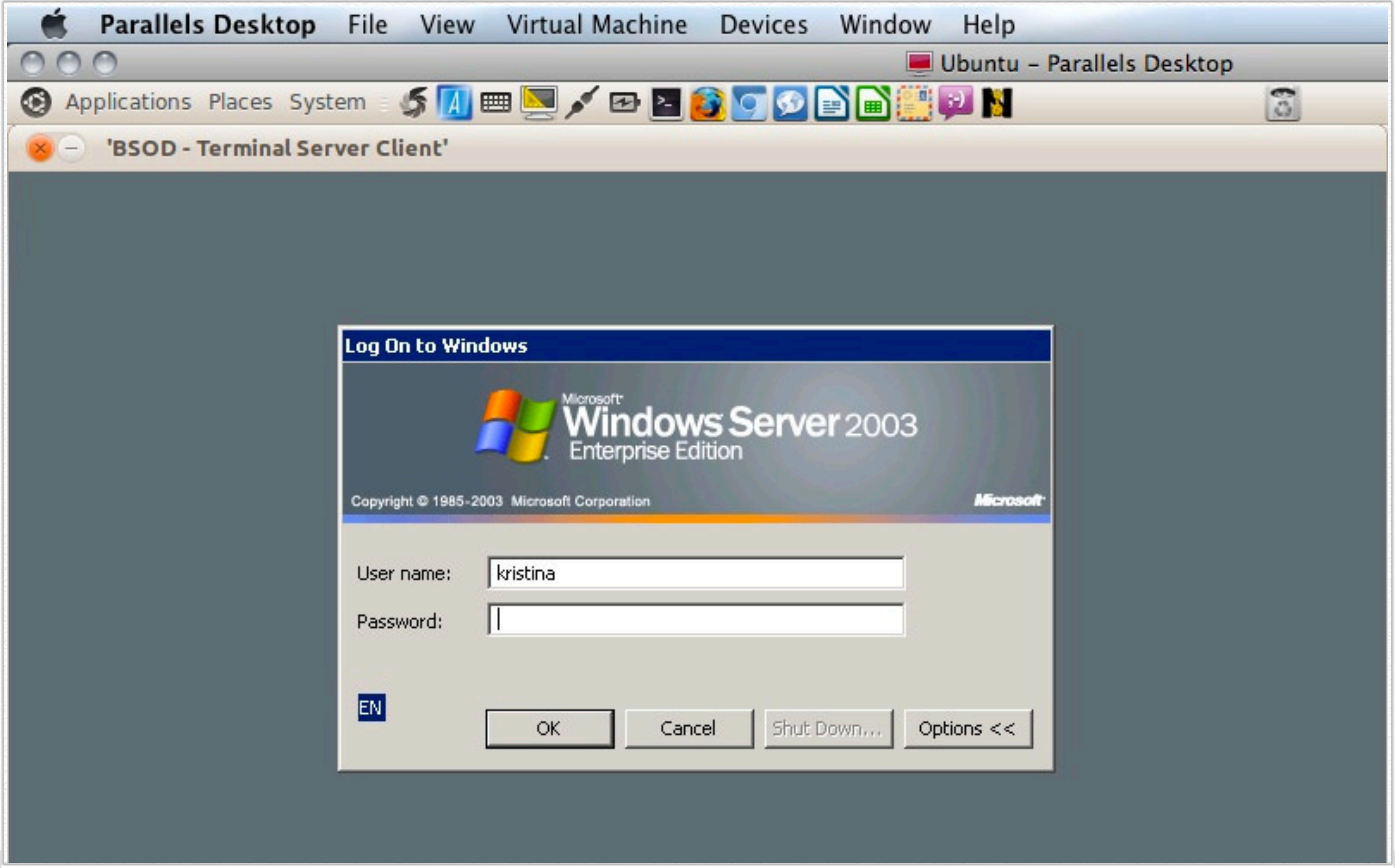


Abstraction in Software Runtime

Bare Metal

Hosts running in DC
(or under the desk, next to
coffee machine)

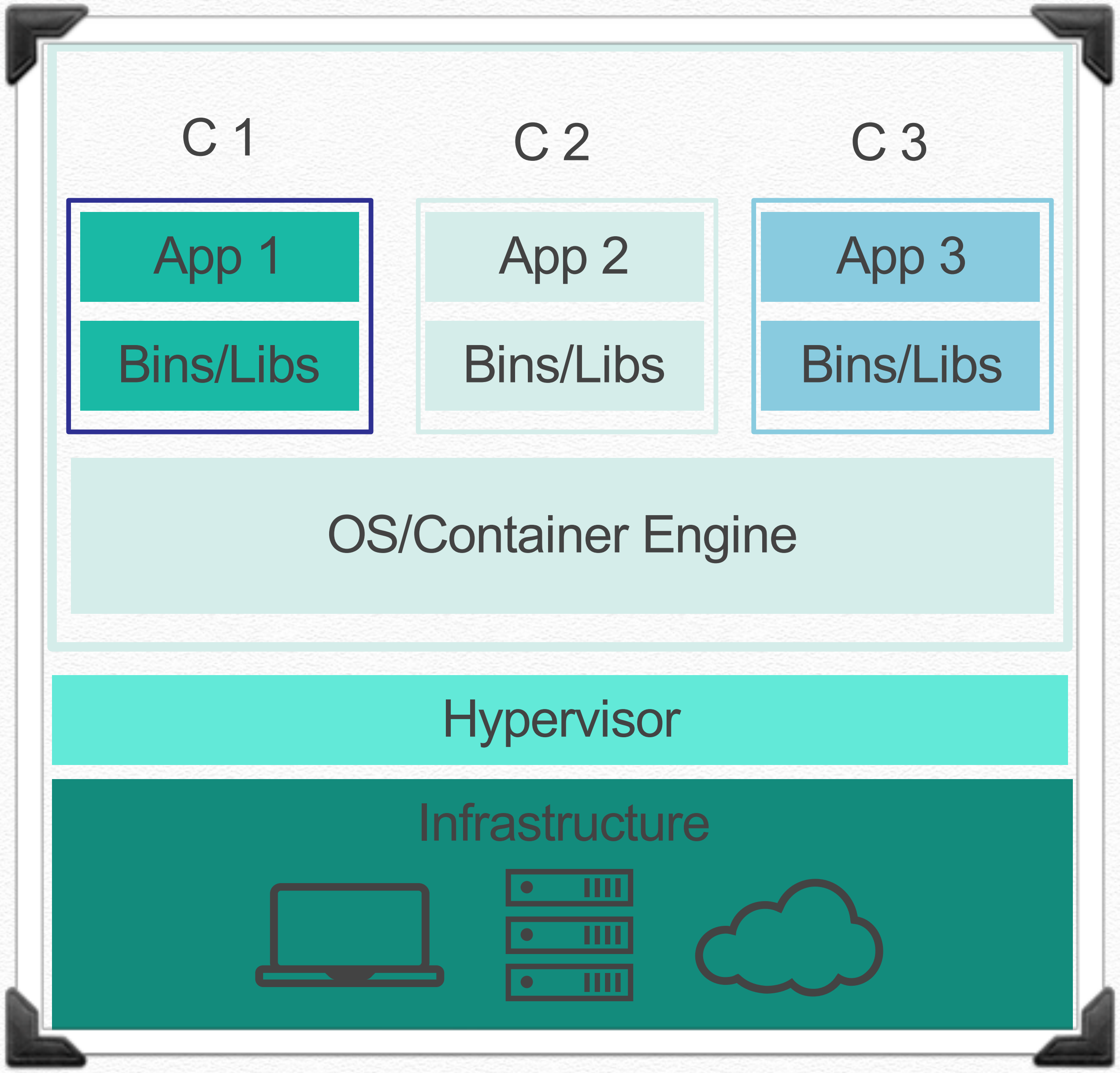




User name: kristina

Password:

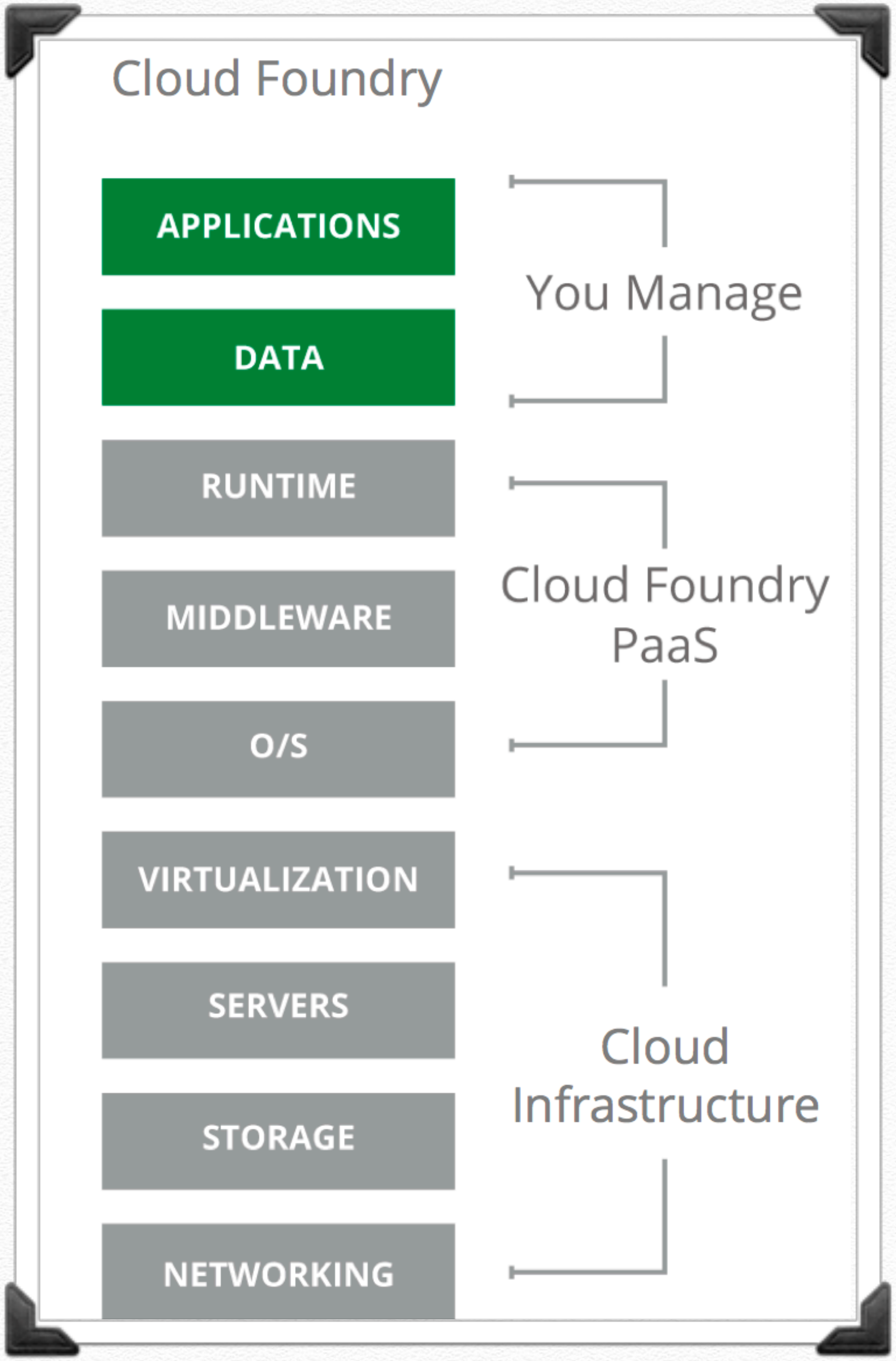
Virtual Machine


C 1
C 2
C 3
App 1
Bins/Libs
App 2
Bins/Libs
App 3
Bins/Libs
OS/Container Engine
Hypervisor
Infrastructure

Containers

Application

Cloud Foundry, GAE



Cloud Foundry

APPLICATIONS

DATA

RUNTIME

MIDDLEWARE

O/S

VIRTUALIZATION

SERVERS

STORAGE

NETWORKING

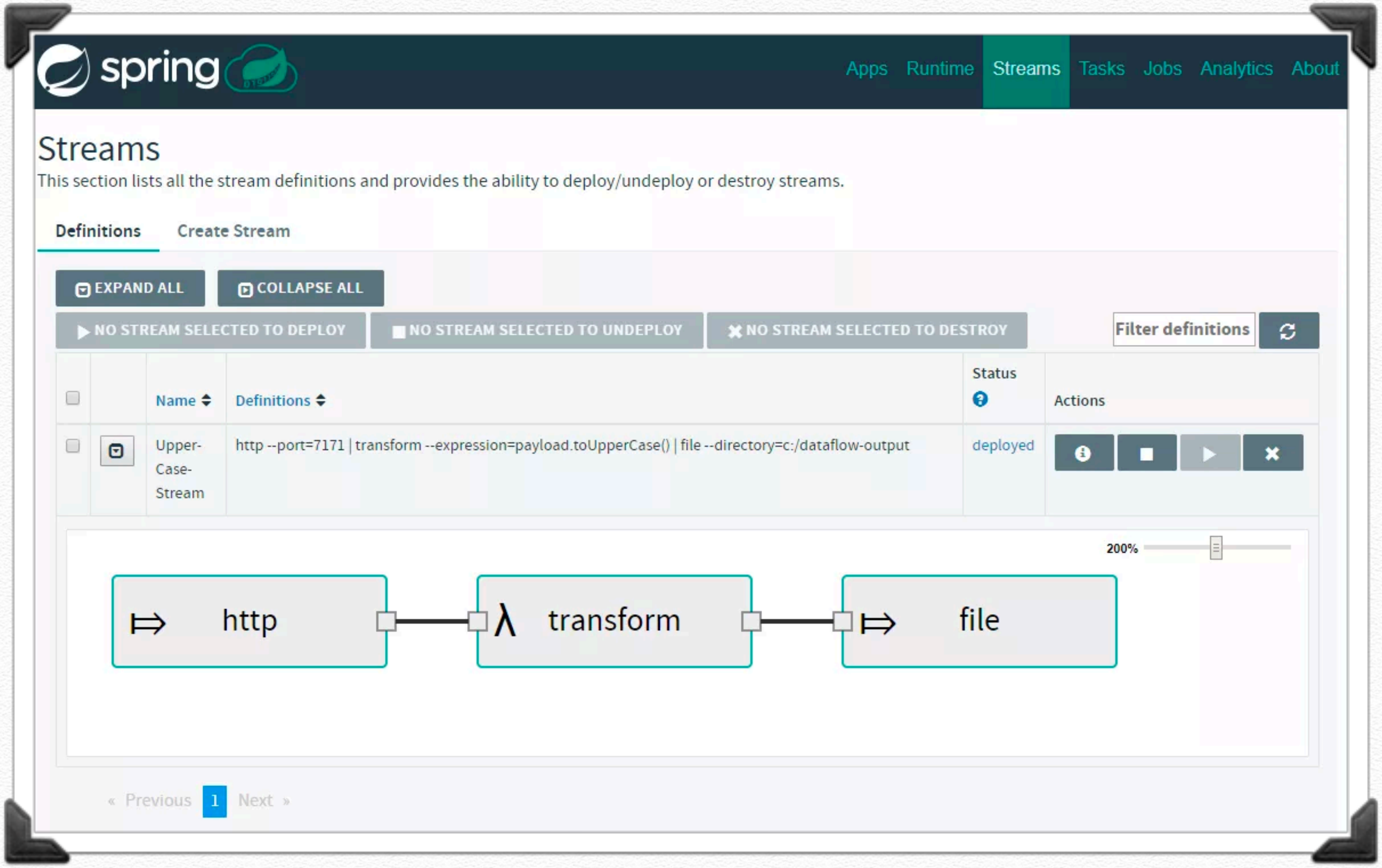
You Manage

Cloud Foundry PaaS

Cloud Infrastructure

Serverless

Knative, AWS Lamba, GCF



Streams

This section lists all the stream definitions and provides the ability to deploy/undeploy or destroy streams.

Definitions   Create Stream

□		Name	Definitions	Status	Actions
□		Upper-Case-Stream	http --port=7171 | transform --expression=payload.toUpperCase() | file --directory=c:/dataflow-output	deployed	

Specialized Runtimes

Spring Cloud Data Flow (SCDF), Workflow Runtimes, Rule Engines

Summary

Physical Host

- Very limited use cases
- Legacy workloads
- Example: Mainframes

Virtual Machines

- Vendor Provided VM images
- System or Runtime Software
- Example: Virtual Appliances

Containers

- Trending upwards
- COTS Application
- Data Services
- Re-platforming monoliths
- Example: Elastic Search, Cassandra, NLP Engines, etc.

Application

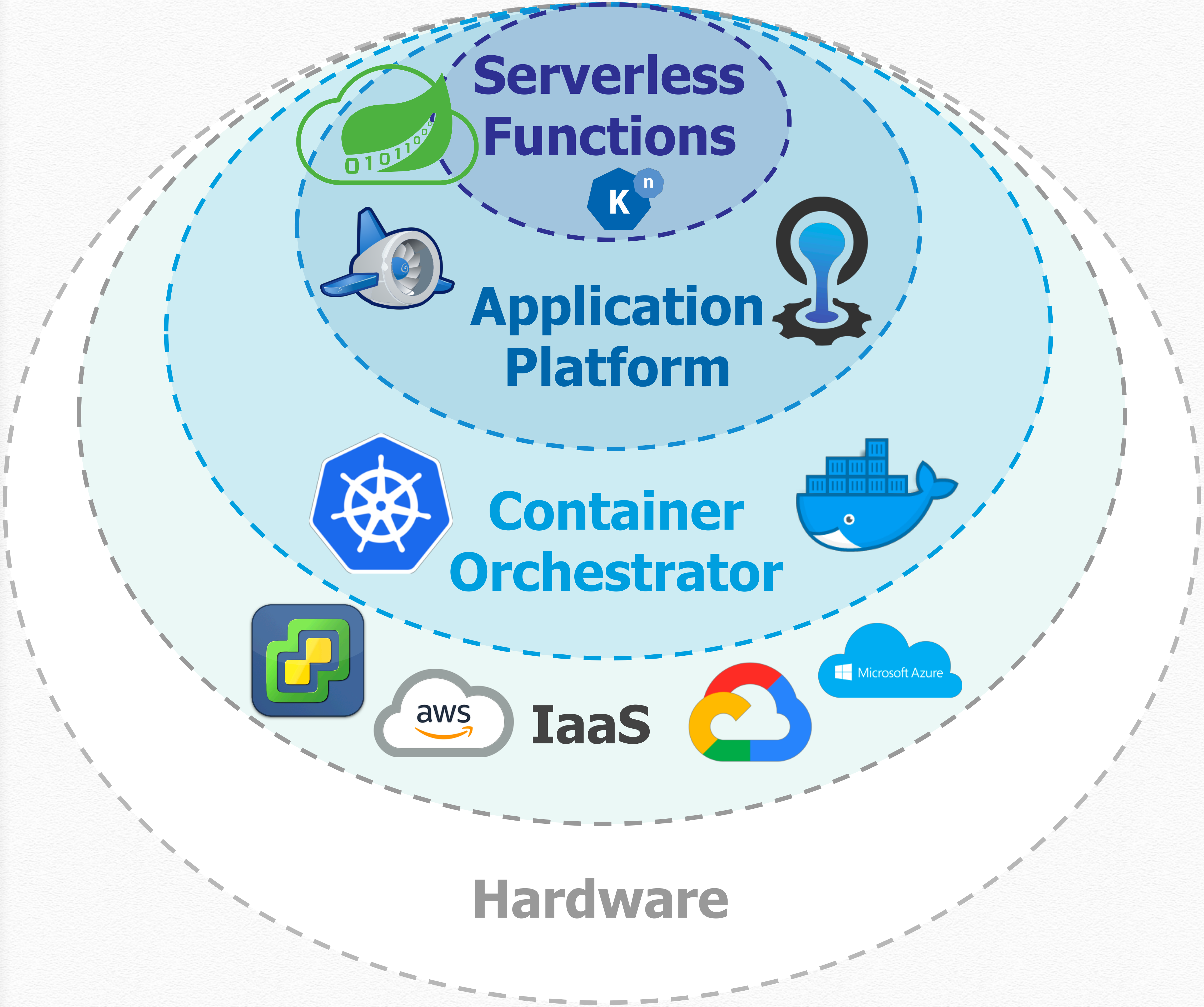
- Specialized/Standardized Container Runtimes
- Just Run It
- 12-Factor Apps, Microservices
- Ideal for API, Microsites
- Example: Spring Boot Applications, REST Service, Frontends

Serverless

- Scale to Zero
- Ideal for event based systems
- Highly volatile traffic
- Example: Analytics processing, Order processing

Specialized Runtime

- Brings the goodness of “Just Run It” and Serverless together
- Interconnectivity of services is a runtime concern and not coding concern
- Ideal for enterprises with 1000s of data driven applications
- Example: Customer service apps, Transaction processing apps, etc.



Serverless Functions

Application Platform

Container Orchestrator

IaaS

Hardware

Thanks!
Feedback and Questions?
Always welcome

Reach Me @yogendra