# Migrating Java and Java EE based Application to Azure Services By Dr. Vishwanath Rao

#### **Course Contents**

#### Day 1

## Migration overview

- Azure Application and Code Assessment Toolkit
- Cloud Suitability Analyzer

## **Breaking Up Monoliths – Pros and Cons**

- Traditional Monolithic Applications and Their Place Disadvantages of Monoliths
- Developer's Woes
- Architecture Modernization
- Architecture Modernization Challenges Microservices Architecture is Not a Silver Bullet! What May Help?
- In-Class Discussion
- Summary

### **Microservice Development**

- What are Microservices?
- Microservices vs Classic SOA
- Principles of Microservices Architecture Design Domain-Driven Design
- Domain-Driven Design Benefits Microservices and Domain-Driven Design Designing for failure
- Microservices Architecture Pros Microservices Architecture Cons
- Docker and Microservices
- Microservice Deployment with Docker Workflow Writing Dockerfile
- Kubernetes
- Microservices and Various Applications
- Web Applications

# Web Applications – Reference Architecture Web Applications – When to use?

- Single Page Applications
- Single Page Applications Benefits Traditional Enterprise Application

- **Architecture Sample Microservices Architecture**
- Serverless & Event-driven Microservice
- Twelve-factor Applications
- Twelve-factor Applications
- Twelve Factors, Microservices, and App Modernization

#### **The Twelve Factors**

- Categorizing the 12 Factors
- 12-Factor Microservice Codebase
- 12-Factor Microservice Dependencies
- 12-Factor Microservice Config
- 12-Factor Microservice Backing Services
- 12-Factor Microservice Build, Release, Run
- 12-Factor Microservice Processes
- 12-Factor Microservice Port Binding
- 12-Factor Microservice Concurrency
- 12-Factor Microservice Disposability
- 12-Factor Microservice Dev/Prod Parity
- 12-Factor Microservice Logs
- 12-Factor Microservice Admin Processes

## Day 2

## **REST Services**

- Many Flavors of Services Understanding
- REST Principles of RESTful Services
- REST Example Create
- REST Example Retrieve
- REST Example Update
- REST Example Delete
- REST Example Client Generated ID
- SOAP Equivalent Examples REST Example JSON Famous
- RESTful Services Additional Resources

## **Migrate Spring to Azure**

- Spring Boot to Azure
- Spring Apps Spring Cloud to Azure Spring Apps

#### **Migrate Tomcat to Azure**

Tomcat to Azure App Service\

- Tomcat to Azure Container Apps Tomcat to containers on AKS
- Tomcat to Azure Spring Apps Tutorial: Containerized Tomcat to AKS

## Day 3

## Migrate WebLogic Server to Azure

- WebLogic Server to AKS
- WebLogic Server to WildFly on AKS
- WebLogic Server to Azure Virtual Machines
- Tutorial: WebLogic to Azure VMs
- WebLogic to AKS within custom VNET
- WebLogic Server with App Gateway
- WebLogic Server to JBoss EAP on App Service

## **Migrate WildFly to Azure**

WildFly to WildFly on AKS

## **Migrate JBoss EAP to Azure**

- JBoss EAP to Azure App Service
- JBoss EAP to Azure VMs

#### **JBoss EAP to Azure**

Red Hat OpenShift JBoss EAP to WildFly on AKS

### Day 4

## Migrate WebSphere to Azure

- WebSphere Application Server to AKS
- WebSphere Application Server to Azure
- Red Hat OpenShift WebSphere Application Server to Azure Virtual Machines
- WebSphere to WildFly on AKS
- WebSphere to JBoss EAP on App Service
- Tutorial: WebSphere to Azure VMs manual guidance

## Moving existing application to Azure

- Azure Migrate App Containerization overview
- Set up host environment
- Discover your Java web application
- Build container image for your Java web app

• Deploy app container to Azure App Service

## Day 5

- Create an Azure Spring Apps instance
- Configure a Spring Cloud Config Server
- Build a Spring Boot microservice
- Build a Spring Cloud Gateway
- Distributed tracing
- Scale Spring Boot microservices
- Deploy Azure Database for MySQL
- Deploy Azure Database for MySQL
- Deploy a Java EE (Jakarta EE) application to JBoss EAP on Azure App Service
- Deploy a Java EE (Jakarta EE) application to JBoss EAP on Azure App Service
- View the JBoss EAP administration tools and application logs
- Access the JBoss EAP administration tools and application logs