

MICROSERVICES FOR LEADERS & MANAGERS

This half-day DevOps training class is loaded with practical real-world information. From the foremost Service-Oriented-Architecture/DevOps/Agile development training company, comes a course to move the dial on your organizations' journey with this workshop. You will leave this course loaded with knowledge on the usage, patterns and practices for Microservices.

AUDIENCE

This course will be particularly useful for technology managers, development leaders, architects and any person in leadership or management implementing or considering Microservices and DevOps for their organization including the following:

- IT/IS/MIS Directors
- App Dev Management
- Infosec, Data Management, Operations, Quality, or Business leaders

TOPICS

- Microservices
- CI/CD
- Kubernetes
- Docker

WHAT YOU WILL LEARN

After completing this course, the student should be able to:

- Understand the various key components.
- Understand the patterns for migration of applications to microservice architected solutions on Docker, Kubernetes, and Jenkins
- Understand the various components in an life cycle environment for CI/CD
- Automation of testing, provisioning, and requirements for successful Microservice Application Implementation and Application Modernization

PREREQUISITES

A desire to learn how Microservices patterns and toolchains can improve your organization effectiveness, build & release processes, application architecture & development, and business continuity for greenfield and application modernization

DURATION

1/2 day.

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OUTLINE: MICROSERVICES FOR LEADERS & MANAGERS

CHAPTER 1. MICROSERVICES DEMYSTIFIED

- The Microservices Architecture Design Principles
- Decentralized Processing
- Business Domain-Centric Design
- Crossing Process Boundary is Expensive!
- Designing for Failure
- Fault Injection During System Testing
- Distributed Transactions
- Managing Distributed Services with Docker & Kubernetes (OpenShift)
- Microservices and their relationship to the front-end
- Rich Client Applications
- Single Page Applications (SPA)
- The Building Blocks of a Fault-tolerant Application
- Example of Microservices in Their Purest Form: AWS Lambdas
- Example of Traditional Enterprise Application Architecture
- Example of Microservices Architecture
- Summary

CHAPTER 2. MICROSERVICE ENVIRONMENT & PATTERNS

- Framing Microservices
- Decentralized Processing
- Business Domain-Centric Design
- Crossing Process Boundary is Expensive!
- Designing for Failure
- Fault Injection During System Testing
- Distributed Transactions
- Managing Distributed Services with Docker & Kubernetes (OpenShift)
- Microservices and their relationship to the front-end
- Rich Client Applications
- Single Page Applications (SPA)
- The Building Blocks of a Fault-tolerant Application
- Digital Commerce example
- AWS Lambda Example
- Summary

CHAPTER 3. MICROSERVICE TECHNOLOGY

- Many Flavors of Services
- Understanding REST
- Principles of RESTful Services
- REST Example – JSON
- Microservices with Node.js
- Node's Value Proposition
- Mean Stack
- Spring Boot
- Sprint Cloud
- Summary

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CHAPTER 4. INTRODUCTION TO KUBERNETES

- What is Kubernetes?
- What Is a Container?
- Microservices and Orchestration
- Microservices and Infrastructure-as-Code
- Kubernetes Container Networking
- Summary

CHAPTER 5. DOCKER: BRING ON THE WHALE

- What is Docker
- Docker ecosystem
- Docker concepts
- Docker Architecture
- Microservice encapsulation
- Secure microservices using Docker
- Agility, Portability, and Control
- Summary

CHAPTER 6. CI /CD

- Jenkins CI
- CloudBees
- Confidentiality
- Activating Security
- Configure Authentication
- OpenShift Jenkins Pipeline Plugin
- BuildConfig Strategy
- OpenShift Sync Plugin
- Pipeline Visualization
- Jenkins Auto-provisioning
- Blue Ocean
- Summary

CHAPTER 7. OPERATIONAL READINESS

- Monitoring, Logging, and Resource Management
- Monitoring Compute Resources
- Checking Pod Health
- Logging
- Secrets & Vaulting
- Summary

CHAPTER 8. APPLICATION MODERNIZATION

- What is Application Modernization?
- Typical App Modernization Projects
- Why Modernize?
- Goals for Modernization
- Twelve-factor Application Microservices
- Maintaining State
- Cloud Service Fabric

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CHAPTER 9. SECURITY IN MICROSERVICES

- Role-based
- Claim-based
- Session Cookie
- HTTP Basic
- JWT
- Spring Security