Building Cloud-native Applications using Microservices Architecture

WorkshopPLUS

Duration: 3 Days [Remote / Onsite]
Difficulty Level: 300 - Advanced

Description

The *Building Cloud-native Applications using Microservices Architecture* offering will help you understand microservice fundamentals, modeling techniques, and design patterns using a sample microservice application built on various open-source technologies and an end-to-end containerization process. You will gain a solid understanding of monitoring and troubleshooting containers, orchestration platforms, Dapr, the role of DevOps, and setting up a CI/CD pipeline for containerized applications.

Objectives

After completing this training, you will be able to:
- Meet current and future challenges by acquiring knowledge on microservices architecture, the containerization process, and orchestration tools.
- Implement a CI/CD pipeline for containerized applications using GitHub Actions or Azure DevOps to build, publish, and trigger deployments to AKS.
- Monitor and troubleshoot containers running on AKS.
- Use Dapr with a microservices-based application.

Outcomes

- Gain knowledge of microservices architecture, modeling techniques and key design patterns.
- Understand the in-depth containerization process and how to containerize applications created from open-source technologies.
- Learn to deploy and monitor cloud-native applications hosted on Azure.

Methodology

Learn by example
You will participate in group discussions and learn from presentations and demonstrations.

Hands-on
- Use an environment for a hands-on experience.
- Access resources and labs for up to six months after the workshop.

Scope

This offering is scoped for a microservice application hosted on Azure Kubernetes Services.

Agenda

Day 1
- Introduction to Microservices
- Modeling Techniques and Decomposition Strategy
- Designing and Architecting Microservices

Day 2
- Containers Core Concepts
- Advanced Container Topics
- Container Hosting

Day 3
- DevOps with Containers
- Monitoring Microservices and Containers

Other Optional Modules
- GitHub Actions with Containers
- Use Dapr with Microservices

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Delivery Outline

Requirements	
Participants ▪ Developers and Architects **Skill requirements** ▪ Some experience in developing and architecting enterprise-scale applications. **Time commitment** ▪ Three full-day engagements for relevant roles.	**Delivery requirements** ▪ Computer with Windows 10 or later, audio equipment, internet access, modern browser, and at least 1 Mbps bandwidth per participant. ▪ Microsoft/Windows Live ID to connect to the virtual environment. ▪ Microsoft Teams for remote deliveries.

Education		
Day 1	Introduction to Microservices	▪ Microservices fundamentals ▪ Micro frontends
Day 1	Modeling Techniques and Decomposition Strategy	▪ Domain driven design and its importance ▪ Event storming to achieve DDD ▪ Decomposition principles, patterns and approaches
Day 1	Designing and Architecting Microservices	▪ Design patterns ▪ Anti-patterns to avoid when building microservices
Day 2	Container Core Concepts	▪ Fundamentals of Docker containers ▪ Deep diving Linux and Windows containers
Day 2	Advanced Container Topics	▪ Managing data ▪ Managing resources ▪ Docker networking, container security, Compose
Day 2	Container Hosting and Orchestration	▪ Microsoft hosting options ▪ Additional Orchestrator options
Day 3	DevOps with Containers	▪ Learn CI/CD pipeline using Azure DevOps Services
Day 3	Monitoring and Troubleshooting Containers	▪ Azure Monitor for containers
Optional Module	GitHub Actions with Containers	▪ Configure CI/CD pipeline using GitHub Actions
Optional Module	Use Dapr with Microservices	▪ Use Dapr with microservices

For more information: Contact your Microsoft Representative for more details.

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