

# Course syllabus

## Microservices concepts refresher

- Why Microservices?
- Anatomy of a Microservice
- Containers
- Benefits of a Microservices architecture

## Overview of Microsoft Azure Service Fabric (ASF)

- The need for Orchestration
- Container Deployment & Orchestration with ASF
- Service Fabric Architecture & Core Concepts
- What is a Service Fabric Cluster?
- Service Fabric Explorer
- Design-Time Concepts
- Run-Time Concepts

## Getting Started with ASF

- Visual Studio 2015 and ASF SDK
- Creating an ASF cluster
- Service Fabric Health System
- Upgrading an Application
- Cluster Resource Manager

## Stateless vs Stateful Services: And / Or?

- What is a Stateless Service?
- What is a Stateful Service?
- When to use both
- Online Transaction Processing (OLTP) Services

## Application Lifecycle Management (ALM) & ASF

- Low-touch Workflows
- Service Network Communication
- Runtime Deployment:
  - ASP.NET Core 1
  - Node.js
  - Java virtual machines
  - Docker

## Reliable Services Framework

- Choosing a Communication Stack
- WCF-based communication
- ASP.NET MVC
- Web API & OWIN
- Remoting and non-Microsoft services

## **Reliable Actor Framework**

- The Actor Design Pattern - benefits & constraints
- Overview of Threading
- Concurrency
- Distributed Systems
- Actor Lifecycle
- Garbage Collection
- Failover

## **Going Live**

- Deploying to ASF
- Monitoring & Debugging
- Scaling up