# Master Class: Designing and Implementing Cloud Native Applications using Microsoft Azure (DICNMA)

**ID** DICNMA **Price** CHF 2,690.—(excl. VAT) **Duration** 4 days

## Who should attend

- Azure developers who build distributed and event-driven applications
- Software architects who design microservices on Azure

## Prerequisites

- C# and .NET experience
- Azure development at AI-200 (formerly AZ-204) level
- Docker Desktop
- An Azure subscription
- A GitHub account

## Course Content

### Module 1: Designing Event-Driven Distributed Systems

- Modular Monolith vs. Microservices
- Sync vs. Async: Commands & Events
- Event Storming: Find Service Boundaries
- Event Types: Domain, Integration, CloudEvents
- Reliability Patterns: Outbox, Saga, Idempotency
- Azure Messaging: Pick the Broker

### Module 2: Building Distributed Apps with Aspire

- Aspire AppHost: Model the System
- ServiceDefaults: Telemetry, Resilience, Discovery
- Aspire Integrations: Hosting & Client
- Aspire Dashboard: Traces Across Services
- Polyglot AppHost: Angular & Python
- Aspire Testing: Distributed Integration Tests

### Module 3: Hosting on Container Apps & AKS

- Aspire Deploy: ACR & Container Apps
- Key Vault & App Configuration
- Revisions: Traffic Splitting & Draining
- AKS: Aspire-Generated Kubernetes Manifests
- Application Insights: Traces & KQL

### Module 4: Reliable Messaging with Service Bus

- Topic Subscriptions: SQL Filters
- Azure Functions: Service Bus Triggers
- Competing Consumers: KEDA Scale Rules
- Sessions: Ordered Message Processing
- Dead-Letter Queues: Poison Messages
- Idempotent Consumers: Duplicate Detection

### Module 5: Events & Streams with Event Grid & Event Hubs

- Event Grid: Custom Topics & Subscriptions
- Event Grid: Filters, Retries, Dead-Letter
- Event Grid Namespaces: Pull Delivery
- Event Hubs: Partitions & Checkpoints
- Event Hubs: Kafka-Compatible Streaming
- SignalR Service: Push to Browsers

### Module 6: Event Sourcing & CQRS with Cosmos DB

- Transactional Outbox: Atomic Publishing
- Change Feed Processor: Projections
- CQRS: Separate Writes from Reads
- Read Models: Indexing, RUs, Consistency
- Managed Redis: Change-Feed Cache Invalidation
- Event Store: Aggregates & Snapshots
- Event Versioning: Evolve Schemas Safely

### Module 7: Dapr Building Blocks for Portable Services

- Dapr Sidecar: Run with Aspire
- Service Invocation: mTLS & Retries
- State Stores: ETags & Concurrency
- Pub/Sub: Swap Brokers via Components
- Resiliency Policies: Retries & Breakers
- Dapr Actors: Virtual Actor Model
- Managed Dapr: Container Apps vs. AKS

### Module 8: Durable Execution, Workflows & Sagas

- Durable Execution: Replay & Determinism
- Durable Task Scheduler: Managed Backend
- Durable Functions: Orchestrations & Entities
- Durable Timers: External Events & Approvals
- Durable Task SDK: KEDA-Scaled Workers
- Dapr Workflow: Portable Orchestrations

- Saga Orchestration: Compensating Activities

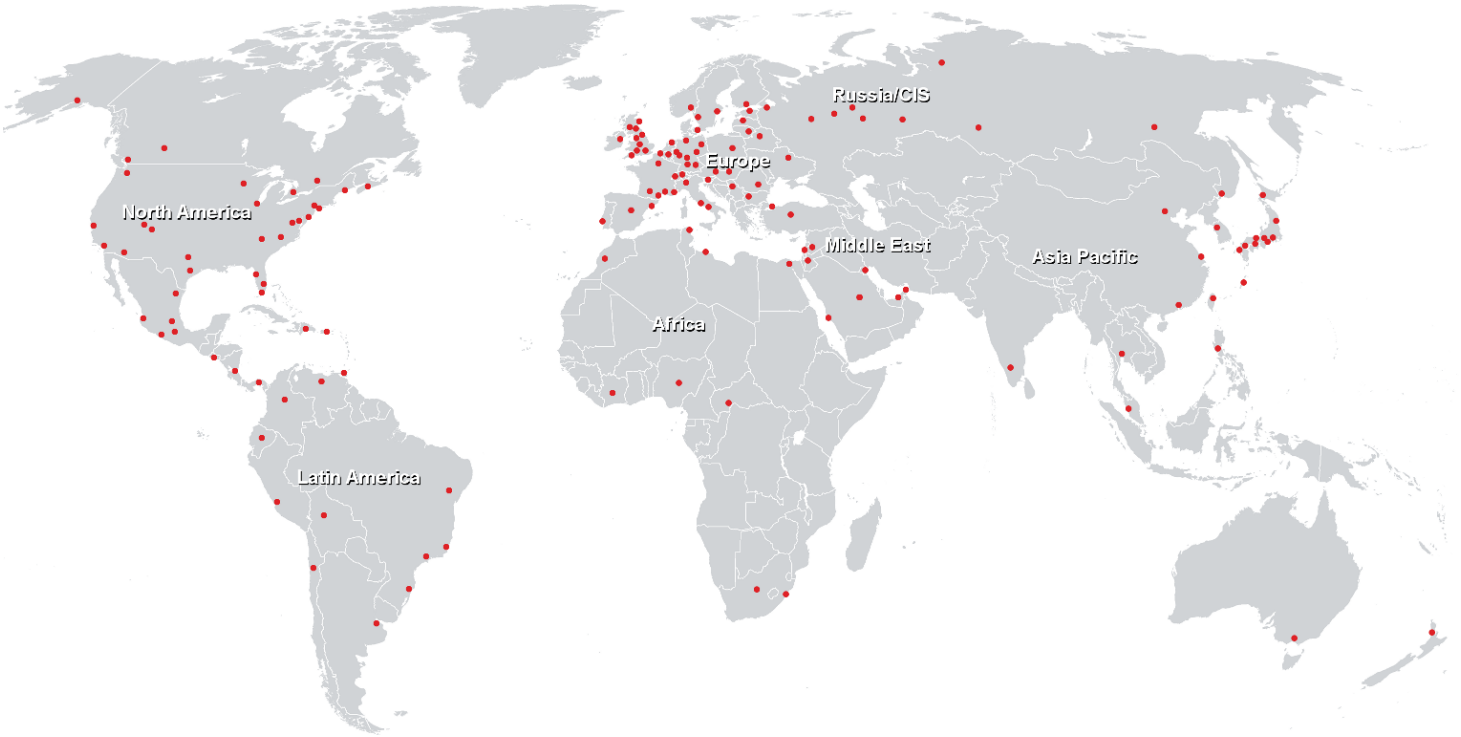
**Module 9: AI Agents in Event-Driven Systems**

- Microsoft.Extensions.AI: Foundry Model Client
- Agent Subscribers: React to Events
- LLM Calls: Durable Activities
- Rate Limits: Priority Queues & KEDA
- Vector Search: Change Feed Embeddings
- Agent Choreography: Events vs. A2A

**Find out more in our course video**

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**Training Centres worldwide**






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