

MCS-WS5 Microservices Workshop

Description: the workshop is intended to work together in a hands-on mode on the most useful topics that the participating teams need.

Workshop objectives:

- Work together in a hands-on mode on the topics that the team / project needs
- Analyze the benefits, drawbacks and tradeoffs of the alternative architectural patterns

Structure: approximately 90-95% practice, approximately 5-10% theory to support it

Target audience: Software Architects, Tech Leads, Developers

Prerequisites: the participants must first attend the 'Microservices design & architecture' course, because all the presented topics are hands-on examples of the topics presented and discussed during that training.

Duration: 3 to 5 days, 7 hours/day, depending on the project's needs.

Collaborative work on several of the following topics:

- Identifying the composing services
- Analyzing several system operations, identifying the owning services and their collaborating services
- Using the 'API first' approach:
 - Writing synchronous APIs
 - Writing asynchronous APIs
- Service to service communication:
 - Using synchronous communication:
 - REST
 - gRPC
 - Using asynchronous communication
- Consistent data writing, using the Saga pattern

- Data reading:
 - Using the API composition pattern
 - Using the CQRS pattern

- Implementing resilience patterns - Retry, RateLimiting, CircuitBreaker, Bulkhead

- Testing a microservices architecture:
 - Consumer Driven Contract Tests
 - Integration tests
 - Component tests
 - End-to-end-tests
 - Load tests