Course : Reactive, event-driven and microservices architectures

Seminar - 1d - 7h00 - Ref. ARA
Price : 1100 CHF E.T.

NEW

Participants will discover how event-driven architectures promote asynchronous communication and scalability in distributed environments. Particular attention will be paid to the integration of microservices, which offer greater modularity and flexibility in the development of complex applications.

Teaching objectives

At the end of the training, the participant will be able to:

- Identify the challenges facing information systems in an overconnected world
- Understand the answers provided by the reactive approach and the recommended solutions
- Understanding reactive architectures and their ecosystems
- Discover the different types of IS architectures

Intended audience

IT management, functional management, user project managers, technical project managers, technical architects.

Prerequisites

Basic knowledge of technical architectures.

Course schedule

1 Introduction to modern architecture

- Understand the challenges of modern systems and the importance of reactive and event-driven approaches.
- Presentation of the Reactive Manifesto and the principles of event architecture.

PARTICIPANTS

IT management, functional management, user project managers, technical project managers, technical architects.

PREREQUISITES

Basic knowledge of technical architectures.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

2 From monolith to microservices and Event Driven Architecture (EDA)

- History of software architectures: from client-server to SOA to microservices.
- Transition to event-driven architectures: motivations, benefits and challenges.

3 Fundamentals of event architecture

- Definition and key concepts: events, producers, consumers, event channels.
- Communication models: publication/subscription, message broadcasting, complex event handling.
- Benefits in terms of decoupling, scalability and responsiveness.

4 EDA integration with microservices

- Using EDA for asynchronous communication between microservices.
- Distributed transaction management with the Saga pattern.
- Data consistency and failure management considerations.

5 Command Query Responsibility Segregation (CQRS) and Event Sourcing

- Principles of separation of reading and writing responsibilities with CQRS.
- Event Sourcing concepts: event persistence, state reconstruction.
- Benefits in terms of scalability, traceability and auditability.

6 Messaging middleware and event brokers

- Overview of tools for implementing EDA, such as Apache Kafka, RabbitMQ and AWS EventBridge.
- Selection criteria and specific use cases.

7 Challenges and best practices in event-driven architectures

- Data integrity management in a distributed environment.
- Ensuring performance and resilience under pressure.
- Monitoring, logging and event traceability strategies.
- Security considerations specific to event-driven architectures.

8 High availability and scalability

- Criteria and techniques for achieving high availability.
- Horizontal and vertical scalability strategies.
- Use of containers and orchestration with Kubernetes.
- Continuous deployment and integration in an event-driven environment.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

Dates and locations

REMOTE CLASS
2026 : 16 Mar., 10 June, 23 Sep., 18 Dec.