



Modern architectures, a state of the art

Duration 1 day(s) (ARCHI-ETAT-01)

A global perspective on modern architectures and their characteristics

Description

This seminar offers a 360° view on the state of the art of modern software architectures. It targets architects and tech leads looking to upskill or maintain their knowledge on this ever-changing field. The slides maintain a high level of abstraction and do not dive in the implementation details; specific points or examples can however be discussed orally.

Goals

- Get familiar with modern, standard architectures (both high-level and concrete software architectures)
- In each domain (web, mobile, persistence, messaging, etc.), understand the various option and the compromise each offers
- Identify the industry trends in terms of adoption of concrete solutions and frameworks
- Get basic knowledge of established good practices to deploy these architectures
- Understand how the cloud can facilitate and accelerate their adoption

Public

- Architect
- Tech lead
- Senior developer

Prerequisites

Knowledge of architecture

Structure

100% Theory, 0% Practice

Program

Introduction

- Qu'est-ce que l'architecture logicielle ?
- Le(s) rôles d'un architecte
- L'impact du temps sur l'architecture

Strategic architecture

- Mapping in IT
- From the monolith to microservices, and everything in between

Tactical architecture

- Web backend architectures (CRUD, 3 layers, hexagonal, streaming)
- Reactive programming
- Web frontend architectures (templating, static, SPA, SSR, SSG, Hybrid)
- Mobile architectures (responsive, progressive, hybrid, cross-platform, native)

Languages and frameworks

- Which solutions for which requirements?
- Market and industry trends

Testing

- The various types of tests
- The test pyramid
- TDD, ATDD, BDD...

Persistence

- The main types of storage solutions (relational, columnar, key-value, document-oriented, time series, graphs, file storage...)

Messaging

- The main communication patterns
- The main types of exchanged data
- Event-driven architectures
- Implementation patterns

Logging and Monitoring

- What to collect?
- How to collect it?

Cloud

- The main cloud offers (on-premise, hosting, IaaS, PaaS, SaaS...)
- Cloud-native architectures
- 12-factor apps

Bonus and conclusion

- Overview of DDD (Domain-Driven Design)
- Overview of CQRS
- Overview of event-sourcing
- Reading list