

Cert. Professional for Software Architecture (CPSA-F®) training course

The iSAQB® Certified Professional for Software Architecture training (CPSA® training) is internationally recognised as the training for you as a software developer or IT architect when you want to improve your (agile) software architecture skills and make more impact.

Participants of the Certified Professional for Software Architecture - Foundation Level training (CPSA® training) will learn the knowledge and skills needed to design, specify and document a software architecture suitable to meet small- and medium-sized system requirements. Based on their individual practical experience and existing skills, participants will learn to derive architectural decisions from an existing system vision and sufficiently detailed requirements. You will learn methods and principles for design, documentation and evaluation of software architectures, independent of specific development processes.

Learning objectives CPSA® training:

- Know the development of contemporary software architectures and the associated terms and definitions: from Abstraction and Building Blocks to Class Diagrams and Design Patterns. From Microservices and Micro-frontends to Unified Modelling Language (UML) and the C4 model: you will learn it and much more!
- Be able to explain the tasks and responsibilities of an (agile) software architect within a Scrum, DevOps and/or SAFe context.
- Knowing how the software architect relates to other stakeholders and what roles communication and influence play in stakeholder management.
- Understand the essential activities of software architecture and be able to perform them for small to medium-sized systems.
- Be able to distinguish between different types of IT systems, their relevance and concrete applicability. Consider web-based, client/server and embedded systems.
- Be able to explain the goals and benefits of a sound software architecture and how they relate to the entire software life cycle and the larger architecture context.
- Be able to participate in requirements processes from an architect's point of view.
- Know the correlation between different development approaches and software architecture.
- Be able to distinguish short- and long-term goals and their implications, as well as understand what this means in terms of software architecture.
- Understand the importance of striving for "conceptual consistency" by developing an "ubiquitous language".
- Be able to document and communicate software architectures based on views, patterns and technical concepts. You will also learn additional resources and tools for documentation purposes.
- Know the most relevant architecture views associated diagrams, their elements and their (mutual) relationships. Think context diagrams, component diagrams, sequence diagrams and, finally, you can zoom in on each component to show how the components are implemented as code. Here, we use the C4 model and a number of UML diagrams.
- Understand and apply notations/models, architectural views and context views of systems.
- Be able to develop and implement cross-cutting concepts.
- Be able to discuss fundamental decisions regarding architecture with stakeholders in requirements, management, development, operations and QA.

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- Be able to design and define interfaces.
- Be able to assess the degree of coupling between components and systems and improve it where necessary.
- Be able to oversee and manage dependencies between building blocks.
- Be able to describe, explain and thoroughly apply the important solution patterns.
- Be able to explain and use design principles.
- Be able to make informed choices between generic and specific solutions.
- Be able to analyse and assess the quality of software architecture based on quality models and quality characteristics.
- Be able to give examples of the application of different architectures in different environments.
- And much more!

Target audience:

This CPSA® training course is suitable for anyone who wants to improve their software architecture skills: both software developers and software architects, both aspiring architects and experienced architects. Experience shows that you get the most value from the training when you:

- At least 18 months' experience in software development in a team environment.
- Knowledge and experience of concepts such as modularisation, abstraction, algorithms & data structures, UML and its relation to source code, parameter fitting (call-by-value, call-by-reference) and the basics of type systems (static vs. dynamic typing, generic data types).
- Know the basics and differences of imperative, declarative, object-oriented and functional programming.
- Has practical experience with technical documentation, more specifically documentation of source code, system design or technical concepts.

Certification:

Expandior, in collaboration with its trusted technology partner OpenValue, is the only provider of this state-of-the-art training in the Netherlands. This uses OpenValue's iSAQB-accredited material. As with all CPSA-F® certifications, the Foundation Level Exam (CPSA-F®) is taken by an independent certification body. The basis for this is a challenging, non-public question catalogue developed by the iSAQB in accordance with the curriculum, from which a subset is selected as exam questions.

The approximately 75-minute CPSA-F® exam consists of 40 multiple choice questions. The exact number may vary due to a random selection of questions with different scores. You receive points for each correct answer and to pass the exam, you need 60 per cent of the maximum score. If you pass the exam, you will receive your official and internationally recognised CPSA-F® certificate. Your certification exam will take place on the first Friday afternoon after you attend the training and this exam is included with this training.