
Solution Architecture Design: Integration, Cloud Patterns and Technical Governance Training Course

19 – 23 April 2027
Barcelona





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Programme Summary

Solution architecture design, covering integration, cloud patterns and technical governance, is the subject of this five-day training course for lead architects, delivery heads and programme leaders at strategic level, ending in a solution architecture pack for one live initiative. Technology programmes fail when design choices are made without recorded trade-offs or review. The programme moves from architecture principles, through diagnosis of current designs, to design of integration and cloud solutions, then to application on one initiative. Mars Training Centre UK delivers this solution architecture design programme for senior technology leaders.

The Business Case

Architecture decisions made early fix cost, risk and delivery speed for years. When requirements, quality needs and integration points are not stated clearly, teams rebuild interfaces, exceed cloud budgets and pass weak designs through review. A shared method gives leaders a way to compare options, record decisions and show approving bodies why a design was chosen.

- Rework: Falls as requirements and quality attributes are stated before design commitments are made.
- Delivery Risk: Falls as integration and cloud choices are tested against agreed criteria.
- Decision Traceability: Improves as choices and trade-offs are recorded and reviewed.

Principles and Evidence Base

- ISO/IEC/IEEE 42010 architecture description: It structures stakeholders, concerns, viewpoints and views in Sessions 1 and 2.
- ISO/IEC 25010 product quality model: It supplies the quality attributes used to rank options in Sessions 2 and 4.
- Trade-off analysis of quality attributes: It guides the comparison of integration and cloud options in Session 4.
- Separation of concerns and loose coupling: They shape the integration and cloud patterns examined from Session 3 to Session 5.

Intended Participants

- Lead solution architects who own the design of systems spanning several teams and suppliers.
- Heads of IT delivery who approve designs and carry the cost of rework.
- Technology programme leaders who sponsor change and need defensible design decisions.
- Architecture review members who assess proposals against agreed standards.



The programme serves banking, government, telecommunications and health technology teams, and suits mixed groups.

Learning Outcomes

1. Participants will be able to construct an architecture description that links stakeholders, concerns and views.
2. Participants will be able to evaluate design options against ranked quality attributes.
3. Participants will be able to diagnose weaknesses in existing integration and cloud designs.
4. Participants will be able to design an integration approach with interfaces, data flows and failure handling.
5. Participants will be able to justify cloud pattern choices with recorded trade-offs.
6. Participants will be able to prioritise review findings and brief an approving body.

Programme Structure

Day 1: Solution Architecture Design Principles

What does a design need to state before it can be judged?

- Stakeholder and Concern Register
- Architecture Viewpoint Catalogue
- Quality Attribute Ranking Sheet
- Constraint and Assumption Log
- Context Diagram Method

Day 2: Requirements and Design Options

How are needs turned into comparable options?

- Requirement to Component Trace Matrix
- Option Generation Canvas
- Weighted Trade-off Scoring Model
- Architecture Decision Record Template
- Build, Buy or Reuse Test

Day 3: Diagnosing Integration and Cloud Designs

Where do current designs create risk and cost?

- Interface Dependency Map
- Coupling and Failure Point Review
- Cloud Cost Driver Analysis
- Data Flow and Ownership Audit
- Design Smell Checklist



Day 4: Designing Integration, Cloud Patterns and Governance

Which patterns and controls meet the ranked needs?

- Integration Pattern Selection Guide
- Cloud Landing Zone Design Outline
- Resilience and Recovery Design Sheet
- Architecture Review Board Charter
- Standards and Exception Register

Day 5: Applying the Methods to One Initiative

Is the architecture pack ready for approval?

- Applying the Session 1 Register to the Initiative
- Scoring Options with the Session 2 Model
- Closing Gaps Found in Session 3 Reviews
- Rehearsing the Review Board Presentation
- Completing the Solution Architecture Pack

Methodology

The programme uses structured exercises on anonymised design cases from several sectors. Participants describe an architecture, score options, review sample interface and cloud designs, and defend decisions before a simulated review board in small groups, with feedback on each work product.

- Suggested activity: Drafting a decision record for a choice between two integration approaches.
- Suggested activity: Reviewing a sample cloud design and listing the risks a board would raise.
- Suggested activity: Ranking quality attributes for a payments service and a records system.

Capstone Output

Each participant completes a solution architecture pack for one initiative. It holds a context diagram, a stakeholder and concern register, ranked quality attributes, decision records, an integration and cloud design outline, and a review board submission. The pack is used to obtain approval and guide delivery teams.

Frequently Asked Questions

Is a programme on solution architecture design suitable for senior technology leaders?

Yes. Solution architecture design is taught at strategic level and assumes current responsibility for approving or owning system designs, not hands-on cloud configuration.



Which references does solution architecture design rest on in this programme?

Solution architecture design rests on ISO/IEC/IEEE 42010, the ISO/IEC 25010 quality model, trade-off analysis of quality attributes and loose coupling principles.

How is the pack from solution architecture design used at work?

You use the solution architecture pack to obtain approval from a review board and to guide delivery teams through the agreed design.

How does solution architecture design differ from a programme on software development?

Solution architecture design centres on structure, integration and trade-offs across systems, while software development centres on writing and testing code for a component.