
# Architecture Reviews


Version 5.0

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# Lesson Description

- This lesson discusses the purpose of architecture reviews and how to conduct them.

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# Lesson Goal

- Participants will be able to lead an architecture review.

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# Lesson Objectives

- Upon completion of the lesson, the participant will be able to:
  - Choose an appropriate type of architecture review for the circumstances
  - Organize and lead an architecture review
  - Review another teams architecture

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# Lesson Outline

- Reviewing the architecture
  - Types of architecture reviews
  - Organizing and leading an architecture review
  - Reviewing another team's architecture
  - Results of the review
- Summary

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# Types of Architecture Reviews

- Early
  - Suitability
  - Alternatives
  - Early Feasibility
- Late
  - Completeness
  - Correctness
  - Late Feasibility

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# Suitability

- When
  - Typically Late Inception or Early Elaboration
  - May be part of a go/no-go decision for the project
  - May be part of an alternatives or feasibility review
- Goals of the Review
  - Determine: Can we meet the project goals with this architecture?
    - Quality
    - Requirements
    - Risks mitigated

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# Alternatives

- When
  - Typically Late Inception or Early Elaboration
  - May be the input to a prototyping effort
- Goals
  - Choose the most suitable one or two among competing alternatives
    - Identify unanswered questions that have to be resolved before choosing one
    - Possibly identify the need for a prototyping phase of the project

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# Early Feasibility

- When
  - Typically Late Inception or Early Elaboration
  - May be part of a go/no-go decision for the project
  - May be part of a suitability review
- Goals
  - Is this a feasible architecture for this project team or this company?
    - Cost of development and supporting technologies
    - Time to develop
    - Team skills – do we have the skills we need or can quickly acquire them
    - Maturity of technology – are we risking our project on version 1 of a technology?

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# Completeness

- When
  - Late Elaboration or early Construction
  - May be part of a go/no-go decision for the project
- Goals
  - Is the chosen architecture complete with regard to meeting requirements, quality goals, and high-priority project risks (those that the architecture can mitigate)?
    - FURPS = Functionality, Usability, Reliability, Performance, Security
    - Risks = People, Business, Technology

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# Correctness

- When
  - Anytime, but generally late Elaboration
  - May be part of any other review
- Goals
  - Is the chosen architecture correct with regard to:
    - Industry standards
    - Metrics
    - Corporate standards and guidelines
    - Regulatory agency requirements

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# Late Feasibility

- When
  - Late Elaboration or anytime in Construction
  - Typically requested when things are going wrong
  - May include an alternatives review
- Goals
  - Determine if the architecture still good for the project (possibly with rework) or are we in trouble.
  - Frequent trouble areas:
    - Technology is not working out as planned
    - Team is not coming up to speed on new technology
    - Radical requirements change
    - “Surprise” requirements
    - New regulations from a government agency
    - Project very far off of time or budget estimates

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# Organizing and Leading an Architecture Review

- Who should attend
- Preparation
- Session structure

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# Who

- Reviewers
  - Project stakeholders
  - Peers from other projects
- Project team
  - Presents the architecture
- Facilitator
  - Keeps the meeting running
- Scribe (at least one)
  - Takes notes

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# Preparation

- These things are typically the job of the meeting facilitator
  - Prepare a schedule with regular breaks
  - Identify attendees
  - Send tested architecture and review guidelines a week ahead
  - Reserve large enough room
  - Refreshments for longer meetings

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# Session Structure

- Meeting facilitator guides the session, team members do all presentations
  - Introduce project
  - Identify architecturally significant requirements or issues, and the high priority risks that will be mitigated
  - Describe how the architecture satisfies / does not satisfy the requirements or issues or risks (this will be specific to the project and the kind of review you are doing)
    - If you are comparing architectures, repeat this step for each architecture
    - Compare and contrast the alternatives
  - Answer questions and probe for comments throughout, but especially at the end

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# Reviewing an Architecture

- Preparation - look at the architecture ahead of time
  - Identify the type of the review and the goals of the review
  - Review using ideas from testing section for completeness and correctness
  - Review to see if the architecture resolves the architecturally significant requirements and issues
  - Based on your own knowledge, look for problem areas in the architecture
- At the review
  - Listen carefully
  - Ask questions to clarify anything that is not clear
  - Probe for answers to concerns you may have
  - Watch for high priority risks that do not have a mitigation plan
  - Take notes to create a summary report

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# Results of the Review

- Write a follow up report
  - Note any places where the architecture does not satisfy the architecturally significant requirements and issues, and why it does not
  - Note any high priority risks that are not addressed in the architecture or do not have a mitigation plan
  - Identify any questions you have that were not answered
  - Identify any assumptions that the project team has made that may not be true, or that may not stay true throughout the project
  - Identify the good points of the architecture and the parts of the architecture that should not change
- Send your notes to the project architect

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# Summary

- Reviewing the architecture
  - Types of architecture reviews
  - Organizing and leading an architecture review
  - Reviewing another team’s architecture
  - Results of the review