WICSA 3 Workshop: Component Based Architectures

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Purpose & Goals

- Bring together practicing software architects and software architecture researchers.
- Understand the state of the art in both practice and research in the area of component-based software architecture.
- Identify the "challenge" problems that practitioners meet regularly when working in this area.
- Suggest possible research projects that (at least partly) address the challenge problems.

Session 1 - Scope

- What do architects mean by a "component"? Is this the same as its "everyday" technical meaning as used by most software developers?
- What isn't a component?
- Do practitioners and researchers mean the same thing when talking about "components"?
- What is special about component-based architecture?
- Can there be non component-based software architecture?
- What sort of partitioning are we concerned about with components? Logical/Conceptual? Functional? Information? Source code? Load-time? Run-time? Others? Should there be any difference?
- Is variation of parts a necessary condition?
- Is the use of a purpose created "component infrastructure" a necessary condition for component-based architecture?

Session 2 - State of the Art

Architectural Concerns

- How are components used within today's systems? Where are components not used?
- What problems does using components solve?
- What problems does using components introduce? (E.g. integration and interoperability - perhaps performance).
- How can using components address common architectural concerns:
  - Reliability?
  - Availability?
  - Scalability?
  - Responsiveness?
  - Efficiency?
  - Security?
  - Internationali{z/s}ation?
  - Usability / accessibility?
  - Evolution?

Infrastructure

- What are the common requirements for a "component infrastructure"?
- What component infra-structures are in widespread use? (CORBA (Component Model), EJB,

COM, .Net, web services?)
- What are the problems with existing component models and infrastructures? Can we see solutions to them?
- What research results are available already that could help? How could these be applied?

Session 3 - A Research Agenda

- What works well today?
- What do we know about using components? Why do we think we "know" this?
- What do we not know?
- Can we identify one or more "challenge problems" in this area?
- What research projects could help to address the challenge problems?