
Introducing the Architecture Session

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Theme of the Session

- u Architecture-based approaches
 - As opposed to algorithm-based approaches?
- u What is the *architecture*, as opposed to the *infrastructure* for carrying out self healing?
 - Does the infrastructure impose and/or constrain the choice of architecture?
 - Is the infrastructure, indeed, the self-healing architecture?
- u Is it possible/desirable to be generic?
 - If not, what is the real scientific contribution?

Personal Background (i.e., Biases)

- u There are big differences among systems
 - small vs. large
 - single-administration vs. federated
 - standards based vs. proprietary interfaces
 - optional vs. critical
- u My interest: *survivability in the extreme*
 - large, federated, proprietary, critical
- u What would “architecture based” mean?
 - What is the “architecture” of such systems?
 - Could the technologies presented help me?

Papers Seeding the Discussion

- u Architectural Style Requirements for Self-Healing Systems. M. Mikic-Rakic, N. Mehta, and N. Medvidovic
- u Self-Organising Software Architectures for Distributed Systems. I. Georgiadis, J. Magee, and J. Kramer
- u Towards Architecture-Based Self-Healing Systems. E.M. Dashofy, A. van der Hoek, and R.N.Taylor
- u Model-Based Adaptation for Self-Healing Systems. D. Garlan, and B. Schmerl

The Papers Compared

u Common assumptions

- reconfiguration is the primary mechanism
- definition of “self-healing architecture”
- invasive control over components
- the reconfiguration process works

u Common theme

- importance of conformance

u Differences

- drivers for reconfiguration
- details of infrastructure