

GSAW 2007 Tutorial F:

QUASAR: a Method for the QQuality Assessment of System ARchitectures

Length: Half day

Overview:

The quality of a system's architecture is critical to that system's success. This is especially true for software-intensive systems, which often have very complex system and software architectures. A system's ultimate success depends on how well its architecture its requirements. The quality of the overall system architecture also depends on the quality of the architectures of the system's subsystems, the quality of the architectures of their subsystems, and so on. Unless the architectures of these subsystems and sub-subsystems adequately help them meet the derived architecturally significant requirements that are allocated to them, it is unlikely that the overall quality of the system architecture will be adequate. Without a proper architectural foundation, it becomes very difficult and expensive to achieve sufficient system quality during design, implementation, and testing.

This tutorial teaches the QUASAR (QQuality Assessment of System ARchitectures) system architecture quality assessment method, which is a practical method for assessing the quality of system architectures in terms of the degree to which the architectures of their subsystems and their sub-subsystems help ensure that they meet the derived quality requirements allocated to them.

QUASAR is based on the premise that the system architects are responsible for:

- knowing and understanding the relevant derived and allocated goals and requirements that their architectures must help their subsystems fulfill
- creating an appropriate architecture that supports the meeting of these requirements
- properly documenting this architecture so that their architectural decisions and associated rationales can be readily found
- knowing whether their architectures sufficiently support the requirements that have been allocated to them
- therefore, being able to make a strong case that their architectures have sufficient quality

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