Surviving the Tornado: The Best Kept Secrets of R&D Success in the Internet Age

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Abstract

Next-generation distributed systems will be substantially more complex, consisting of increasingly autonomous components that will collaborate in networks of embedded processors based largely on commercial-off-the-shelf (COTS) technology. To attain and sustain the success of these systems, it is essential to develop distributed object computing (DOC) middleware that can coordinate the COTS networking and computing resources and provide global end-to-end quality of service (QoS) properties. Substantial R&D efforts are needed to solve fundamental mission-critical QoS challenges that cannot be solved with today's middleware. Although these challenges will not be solved by industry without significant research investment, the R&D community must get "inside the tornado" rather than trying to ignore or resist it. This talk describes concrete steps we must take to invigorate DOC middleware by aligning our R&D activities with emerging COTS standards and technologies.

Biography

Dr. Douglas Schmidt is an Associate Professor in the Electrical and Computer Engineering department at the University of California, Irvine, USA. His research focuses on design patterns, optimization principles, and empirical analyses of object-oriented techniques that facilitate the development of high-performance and real-time distributed object computing middleware running over high-speed networks and embedded system interconnects. He is currently serving as a Program Manager in the Information Technology Office (ITO) at DARPA, leading the USA research effort on distributed object computing middleware.