Model Based Testing in Practice

Kelvin Ross and Padmanabhan Krishnan

Abstract

As software becomes increasingly more complex, and business places greater emphasis on agility and speed-to-market, software developers are continuously striving to find ways to control the expanding cost of software testing. Frequent and often late changes still continue to make it into releases with less than adequate testing, as the scaling cost of traditional testing cannot be sustained on larger projects. Industry continues to strive to find ways to control costs, yet increase the coverage of tests and efficiently repeat regression tests after requirements changes and bug fixes.

Test automation has offered some benefit. However traditional automation approaches are still challenged to scale. Significant preparation and maintenance is still required to undertake automated test scenarios.

Model-Based Testing (MBT) has the potential to dramatically change the software testing process and to reduce effort involved in thoroughly testing a software system. Instead of explicitly prescribing tests as an output of the test design process, MBT instead automatically derives tests from a model. Through MBT, thousands or even millions of test scenarios can be rapidly generated from the model, far in excess of what can be considered manually or even using traditional automation. MBT has the potential to define test scenarios and find bugs that are unlikely using other methods due to combinatorial complexity.

This tutorial will provide an overview of MBT, review different methodologies and tools that are available, explain how it differs from traditional approaches, demonstrate how to use MBT to effectively test aspects of your application, and define the skills and supporting processes required to scale MBT to larger projects.

Model-Based Testing tools presented will be made available as open-source software.

Details

Date and Time

Tuesday 14 April 2009, 9.00am - 5.00pm

Price

- Registered conference student - AU $195.00
- Tutorial only attendee - AU $595.00
- Registered conference delegate - AU $495.00

Intended Audience

- Software engineers
- Testing professionals
- Team leads and managers

About the presenters

Kelvin Ross

Kelvin holds a PhD in Computer Science and Electrical Engineering in the areas of configuration management and high-integrity software development. Kelvin is managing director of a software testing consulting firm in Australia with 60 specialist consultants. He has been involved in software assurance for almost 20 years. His consulting experience has led Kelvin to be involved with some of Australia's leading organisations on some of the most critical IT projects. Projects have included testing and assurance for shrink-wrapped software, web-based applications, distributed and fault-tolerant systems, SOA and messaging systems, and safety-critical medical, defence and transportation systems. He has particular interests are in testing centres of excellence, and model-based and automated testing frameworks, though which he has developed a strong international reputation.

Padmanabhan Krishnan

Paddy Krishnan is a Professor of Computer Science and Head of Department of Software Systems at the School of Information Technology, Bond University. He is also the Director of the Centre for Software Assurance and an Associate Research Fellow at the International Institute for Software Technology, United Nations University, (UNU/IIST) Macao. His research interests are in the area of software engineering with a focus on formal methods, security, model-based testing, assurance and real-time systems.