First Workshop on Compiler and Architectural Techniques for Application Reliability and Security (CATARS)

In Conjunction with the International Conference on Dependable Systems and Networks (DSN) www.dsn.org

Date: June 26th, 2008

Place: Anchorage, Alaska, USA

Theme and Goals
As computer systems grow more and more complex, it becomes harder to ensure that they operate in a reliable and secure fashion. The problem is especially severe at the application-level, due to the diversity of software platforms and the ever-increasing demand for adding new features in applications. Manual addition of ad-hoc techniques to ensure application fault and attack tolerance may be error-prone and runs the risk of missing important reliability loopholes and security vulnerabilities. This in turn can lead to catastrophic failures and devastating attacks. Compiler and architectural techniques can play a crucial role in automating both detection of and recovery from errors and attacks in applications.

The goal of this workshop is to provide a common platform for researchers in the dependability and security communities to interact with compiler designers and computer architects, so that effective cross-pollination of ideas can occur between these areas. Further, the workshop will stress on the importance of designing for reliability and security in the computer architecture and compiler communities, where traditionally the emphasis has been on performance enhancement.

List of Topics
The workshop is open to all interested researchers working on dependability and security as well as on computer architecture and compilers. We encourage submissions including but not limited to the following topics:

- Automated generation and runtime enforcement of application invariants
- Compile-time techniques for finding programming errors and security violations
- Compiler and runtime techniques to aid development of distributed, fault-tolerant programs
- Novel application-level code and data duplication techniques (in hardware or software)
- Static Analysis to ensure conformance to reliability and security properties
- Automated generation of fault-tolerant and attack-tolerant programs
- Micro-architectural techniques for runtime error detection and containment
- Architectural support for diagnosing and understanding application failures and compromises
- Memory organization schemes for enabling detection of and recovery from errors and attacks
- Design and Implementation of reconfigurable hardware for executing application-level checks
CATARS Workshop – Call for Papers

- Reliability and security issues exposed due to multi-core processors and their mitigation
- Novel programming language-level constructs for building fault-tolerant applications
- Metrics for assessing application vulnerability to errors and security attacks
- Verifiable byte-code/intermediate language and secure runtime infrastructures
- Software obfuscation and hardware tamper-resistance

Submission Information
Submitted papers must be original work with no substantial overlap with papers that have been published or that are simultaneously published to a journal or conference with proceedings. Papers should be at most 6 pages in IEEE proceedings style (two-column pages, single space, using 10 point font and 1-inch margins) including all figures and references. Submitted papers will be fully refereed by PC members. Accepted papers will be published in the supplemental volume of DSN 2008 proceedings. Authors of accepted papers must guarantee that their paper will be presented at the workshop.

Important Dates
Paper submission due 7th March, 2008
Acceptance notification 11th April, 2008
Camera-ready versions of papers 1st May, 2008

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