Imperas Newsletter: April 2017

"Silicon without software is just sand."

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Agile for Embedded Conference

Imperas is sponsoring the Agile for Embedded Conference May 3, 2017 at Easthampstead Park, Berkshire, UK and presenting a technical paper on "Target-Based Simulation for Testing of Embedded Software in CI Flows" by Lee Moore, Duncan Graham, Simon Davidmann, and Larry Lapides of Imperas Software.

Embedded systems have high reliability requirements that demand extensive software testing. Historically this testing has been done on hardware or by cross compiling to an x86 platform, however, hardware-based testing lacks controllability, observability and determinism while cross compilation forces testing of non-production binaries. Virtual platforms (software simulation), which enable the use of unmodified target binaries, address these concerns, are easily automated for inclusion in a CI flow, and complement hardware-based testing.
Learn more.

To set up a meeting, please email us at sales@imperas.com.

Imperas Software at DAC 2017

Imperas will exhibit and deliver a virtual platform tutorial at DAC 2017: Linux Bring Up on Heterogeneous Multiprocessor SoCs, with Sean Raby of Imagination Technologies and Simon Davidmann of Imperas Software, on Monday June 19. Join us at the World of IoT Pavilion, Booth #521, in Austin @DAC2017!
Read more.

Success Video: Audi and NIRA Dynamics

For Audi (NIRA Dynamics) in automotive, software testing is mission-critical. Because failsafe quality is key, they needed an exhaustive testing solution. A high-level

Imperas Shows Viability of Instruction Accurate Simulation for Fault Injection Testing

At the Embedded World conference in March, Imperas presented results from fault injection testing work done in collaboration with UFGRS (Brazil) and Univ. Leicester (United Kingdom).

Currently, most fault injection testing is performed either on real hardware or using RTL simulation. Due to issues with these techniques including lack of controllability and visibility, slow performance, lack of processor models and more, instruction-accurate software simulation (virtual platforms) can be an effective tool for testing fault tolerance. This work establishes the validity of virtual platforms for fault injection testing.

The results are very encouraging. While testing on hardware still needs to be done, fault injection testing on virtual platforms has advantages of performance, controllability (ability to inject faults anywhere in the system), easy modeling enabling the exploration of different processor and software architectures, and low cost. Given the availability of virtual platforms early in the design cycle, fault injection testing can start earlier in the project, resulting in higher quality fault tolerant systems.
Read more.

Magillem and Imperas Demonstrate Improved Critical Systems Dependency Analysis Using Virtual Platforms

Magillem Design Services, together with Imperas, presented a new flow to improve traceability of dependencies between all the objects in the embedded system such as requirements, specifications, documentation, hardware and software.

approach to verification of hardware/ software systems, with complete observability, controllability, and repeatability was needed. Imperas virtual platforms to the rescue! Watch it here.

This work combined Magillem's IP-XACT (XML-based format) with Imperas virtual platforms to show how embedded systems debugging can be improved by bi-directional tracing of dependencies from requirements to embedded system execution.
Read more.

OVPsim Release News

OVP: Fast Simulation, Free open source models, Public APIs: Open Virtual Platforms.

A new Imperas and OVP release became available, February 2017. The Open Virtual Platforms portal is one of the most exciting open source software developments in the embedded software world since GNU created GDB.

- For embedded software developers, virtual platforms are increasingly important, especially for multi-core designs.

The resources on this portal can significantly accelerate your development and test. The next release of OVPsim is expected to be available in May 2017.