Design of the Secure Execution PUF-based Processor (SEPP)

Abstract:
A persistent problem with program execution is its vulnerability to code injection attacks. Equally unsolved is the susceptibility of software to reverse engineering, which undermines code confidentiality. We propose an approach that solves both kinds of security problems by employing instruction-level code encryption combined with the use of a physical unclonable function (PUF). Our Secure Execution PUF-based Processor (SEPP) architecture is designed to minimize the attack surface, as well as the performance impact, and requires no significant changes to the software development process. Our approach supports distributed systems, as the secure execution environment needs not be physically available to the developer.

Stichworte:
Design, Secure, Execution, PUF-based, Processor

Dewey Dezimalklassifikation (Liste):
620 Ingenieurwissenschaften

Kongress- / Buchtitel:
TRUDEVICE Workshop on Secure Hardware and Security Evaluation

Kongress / Zusatzinformationen:
Saint Malo, Frankreich

Jahr: 2015
Quartal: 3. Quartal
Jahr / Monat: 2015-09
Monat: Sep
Revied: ja
Sprache: en

Occurences:
· Einrichtungen > Fakultäten > Fakultät für Elektrotechnik und Informationstechnik > Lehrstühle und Professuren > Sicherheit in der Informationstechnik (Prof. Sigl) > 2015

entries: