
Information technology — Security techniques — Requirements for establishing virtualized roots of trust

Technologies de l'information — Techniques de sécurité — Exigences relatives à l'établissement de racines de confiance virtualisées





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Published in Switzerland

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Foreword

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 27, *Information security, cybersecurity and privacy protection*.

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Introduction

Trusted computing is a kind of security technology based on hardware trusted modules, which aims to ensure that a computer behaves as expected. The trusted computing technology has been developing fast since its establishment in the 1980s.

The emergence of cloud computing provides a new application scenario for trusted computing technology. Trust can be established in VMs using a RoT on the physical machine and a virtualized RoT in the VM and mechanism to bind them together to provide assurance they are on the same machine. The trusted migration of a VM could use trusted computing to establish trust in the state of the source and destination physical machines (including their VMM software) and components involved in the migration process. In the cloud computing environment, a single physical RoT only provides limited resources and computing efficacy, which is not enough for the large number of VMs on one server. To address this issue, virtualized RoTs are used. Using virtualization technology to create multiple virtualized RoTs on a single physical platform, providing a virtualized RoT for each VM, combined with cryptographic technology to support secure and trusted migration of VMs, thereby building a trusted cloud computing environment. The establishment procedure of virtualized RoTs consists of multiple steps, and any security problem in any step diminishes the trustworthiness of virtualized RoTs, resulting in an inability to establish trust using the virtualized RoTs.

The goal of the document is to provide a unified approach to virtualize RoTs based on hardware trusted modules.

Information technology — Security techniques — Requirements for establishing virtualized roots of trust

1 Scope

This document specifies requirements for establishing virtualized roots of trust.

2 Normative references

There are no normative references in this document.