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Locking the sky: a survey on IaaS cloud security. (English) Zbl 1234.68017

Summary: Cloud computing is expected to become a common solution for deploying applications thanks to its capacity to leverage developers from infrastructure management tasks, thus reducing the overall costs and services’ time to market. Several concerns prevent players’ entry in the cloud; security is arguably the most relevant one. Many factors have an impact on cloud security, but it is its multitenant nature that brings the newest and more challenging problems to cloud settings. Here, we analyze the security risks that multitenancy induces to the most established clouds, Infrastructure as a service clouds, and review the literature available to present the most relevant threats, state of the art of solutions that address some of the associated risks. A major conclusion of our analysis is that most reported systems employ access control and encryption techniques to secure the different elements present in a virtualized (multitenant) datacenter. Also, we analyze which are the open issues and challenges to be addressed by cloud systems in the security field.

MSC:
68M01 General theory of computer systems
68U35 Computing methodologies for information systems (hypertext navigation, interfaces, decision support, etc.)

Keywords:
cloud computing; security; IaaS; multitenancy

Software:
Flicker

Full Text: DOI

References:

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