

Survey of Access Controls in Cloud Computing

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Abstract : Cloud computing is one of the most significant technologies that the world deals with, in different sectors with different purposes and capabilities. The cloud faces various challenges in securing data from unauthorized access or modification. Consequently, security risks and levels have greatly increased. Therefore, cloud service providers (CSPs) and users need secure mechanisms that ensure that data are kept secret and safe from any disclosures or exploits. For this reason, CSPs need a number of techniques and technologies to manage and secure access to the cloud services to achieve security goals, such as confidentiality, integrity, identity access management (IAM), etc. Therefore, this paper will review and explore various access controls implemented in a cloud environment that achieve different security purposes. The methodology followed in this survey was conducting an assessment, evaluation, and comparison between those access controls mechanisms and technologies based on different factors, such as the security goals it achieves, usability, and cost-effectiveness. This assessment resulted in the fact that the technology used in an access control affects the security goals it achieves as well as there is no one access control method that achieves all security goals. Consequently, such a comparison would help decision-makers to choose properly the access controls that meet their requirements.

Keywords : access controls, cloud computing, confidentiality, identity and access management

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