Abstract

Due to the distinguished nature of cloud computing, it needs an effective access control model, that can cope with its broad network access, on-demand self-service, and so on. When thinking in integrating the Software-defined Networking (SDN) with the cloud computing environment, to let SDN serve, secure, and control the cloud environment. The authors must think about a perfect access control model to secure access to the SDN-integrated cloud environment. This paper proposes an extended access control model for the SDN-integrated cloud computing. Where the author’s AR-ABAC access control model [15] is extended to suit the SDN-integrated cloud environment distinguished nature. The extended model can make the election process about the number of attributes considered for making access decisions. In addition it can perfectly deal with the SDN software controllers (OpenDaylight controller). Finally the model ensures secure resource sharing among potential untrusted tenants and supports different access permissions to the same user at the same session.


EAR-ABAC: An Extended AR-ABAC Access Control Model for SDN-Integrated Cloud Computing


Index Terms

Computer Science Distributed Systems

Keywords

Cloud computing security, software defined networking, attribute based access control