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Platform-as-a-Service Sticky Policies for Privacy Classification in the Cloud

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Abstract : In this paper, we present a Platform-as-a-Service (PaaS) model for controlling the privacy enforcement mechanisms applied on user data when stored and processed in Cloud data centers. The proposed architecture consists of establishing user configurable ‘sticky’ policies on the Graphical User Interface (GUI) data-bound components during the application development phase to specify the details of privacy enforcement on the contents of these components. Various privacy classification classes on the data components are formally defined to give the user full control on the degree and scope of privacy enforcement including the type of execution containers to process the data in the Cloud. This not only enhances the privacy-awareness of the developed Cloud services, but also results in major savings in performance and energy efficiency due to the fact that the privacy mechanisms are solely applied on sensitive data units and not on all the user content. The proposed design is implemented in a real PaaS cloud computing environment on the Microsoft Azure platform.

Keywords : privacy enforcement, platform-as-a-service privacy awareness, cloud computing privacy
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