World Academy of Science, Engineering and Technology
International Journal of Information and Communication Engineering
Vol:12, No:06, 2018

A Cloud-Based Federated Identity Management in Europe

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Abstract : Currently, there is a so called 'identity crisis' in cybersecurity caused by the substantial security, privacy and usability shortcomings encountered in existing systems for identity management. Federated Identity Management (FIM) could be solution for this crisis, as it is a method that facilitates management of identity processes and policies among collaborating entities without enforcing a global consistency, that is difficult to achieve when there are ID legacy systems. To cope with this problem, the Connecting Europe Facility (CEF) initiative proposed in 2014 a federated solution in anticipation of the adoption of the Regulation (EU) N°910/2014, the so-called eIDAS Regulation. At present, a network of eIDAS Nodes is being deployed at European level to allow that every citizen recognized by a member state is to be recognized within the trust network at European level, enabling the consumption of services in other member states that, until now were not allowed, or whose concession was tedious. This is a very ambitious approach, since it tends to enable cross-border authentication of Member States citizens without the need to unify the authentication method (eID Scheme) of the member state in question. However, this federation is currently managed by member states and it is initially applied only to citizens and public organizations. The goal of this paper is to present the results of a European Project, named eID@Cloud, that focuses on the integration of eID in 5 cloud platforms belonging to authentication service providers of different EU Member States to act as Service Providers (SP) for private entities. We propose an initiative based on a private eID Scheme both for natural and legal persons. The methodology followed in the eID@Cloud project is that each Identity Provider (IdP) is subscribed to an eIDAS Node Connector, requesting for authentication, that is subscribed to an eIDAS Node Proxy Service, issuing authentication assertions. To cope with high loads, load balancing is supported in the eIDAS Node. The eID@Cloud project is still going on, but we already have some important outcomes. First, we have deployed the federation identity nodes and tested it from the security and performance point of view. The pilot prototype has shown the feasibility of deploying this kind of systems, ensuring good performance due to the replication of the eIDAS nodes and the load balance mechanism. Second, our solution avoids the propagation of identity data out of the native domain of the user or entity being identified, which avoids problems well known in cybersecurity due to network interception, man in the middle attack, etc. Last, but not least, this system allows to connect any country or collectivity easily, providing incremental development of the network and avoiding difficult political negotiations to agree on a single authentication format (which would be a major stopper).

Keywords : cybersecurity, identity federation, trust, user authentication
Conference Title : ICCRCPS 2018 : International Conference on Cybersecurity and Resilience of Cyber Physical Systems
Conference Location : Vienna, Austria
Conference Dates : June 14-15, 2018