Constructing an Agent-based Single Sign-On Scheme for Cloud Computing Services

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ABSTRACT

Nowadays, there are hundreds of cloud services, and users just need to register with one account and password and then they can use browsers to access services in each platform at any time. Although the cloud system can bring a lot of advantages, users still worry about how they can ensure the information security and confidentiality. The international alliance OASIS sets up the standard of the security assertion markup language, which combines the function about single sign-on that uses the way of redirecting to the authentication server to achieve authentication, but its operation not only increases the load of servers and consume huge bandwidth, but also is vulnerable to the replay and man-in-the-middle attacks. In such a way, it will not be able to protect confidential information and personal privacy. The main purpose in this thesis is to integrate the secure agent platform and cloud services to build a single sign-on system in the trust mode. Through the way of carrying users' information by mobile agents to let the times of communication between a user and the host be reduced, the proposed scheme can avoid a variety of malicious attacks. In summary, the proposal scheme can enhance the security of single sign-on in cloud service environments and protect users' privacy, reduce the network traffic in distributed environments, and thus make all services and efficiency better.

Keywords : Cloud computing   Mobile agent   Single sign-on   Information security

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