Abstract

Mobile agents are an excellent technology for implementing Web services. Within a set of federated Web services, mobile agents can reduce bandwidth requirements and mitigate the effects of high-latency network connections. This paper presents a model for implementing Web services with mobile agents where agents are free to move between cooperating Web servers to implement the service functionality. Also for increasing security of web services, we illustrate a novel distributed protocol for multi agent environments. In this approach, the encrypted private key and the message are broken into different parts carrying by different agents, which make it difficult for malicious entities to mine the private key for message encryption, while the private key for the encrypted key is allocated on the predetermined destination nodes. On the other hand, all of the previously proposed encryption algorithms can be applied in the proposed approach that deteriorates the key discovery process. To improve the overall security, the paper makes use of Advanced Encryption Standard (AES) as the encryption base for message encryption. Our mobile agent Web services present typical WSDL interfaces, so mobile agent functionality can be consumed from legacy clients, and federated services can be gradually migrated to a mobile agent implementation.


**Index Terms**

Computer Science

Security
Keywords
Multi agent  Cryptographic Protocol  Mobile Agents  Security  Web services
implementation web services by mobile agent