Abstract

Security issues in a distributed system are always crucial and existing distributed computing security technologies do not adequately address for its scalability, performance and heterogeneity. In this paper, an agent-based authentication model is designed and uses a mobile agent which is an object that migrates through many nodes of a heterogeneous network of computers, under its own control in order to perform designated tasks using local resources of the nodes. A mobile agent is called authentication mobile agent that can migrate from machine to machine in the agent-enabled network and responsible for providing the authentication service in the distributed system. The authentication mobile agent uses digital signature algorithm for the authentication of the mobile code, and password encrypted with a secret key for the user authentication. The agent maintains a small database file that also migrated with it. It may again move towards the other machines on demand. This approach provides many benefits to the development of distributed applications.

References

- Wayne Jansen, Tom Karygiannis "Mobile Agent Security", NIST Special
Mobile Agent-Based Authentication: A Model for User Authentication in a Distributed System

Publication
- David Chess, Colin Harrison, and Aaron Kershenbaum, "Mobile Agents: Are They Good Idea?" IBM Research Report
- Syed Adnan, John Datuin and Pavana Yalamanchili "A Survey of Mobile Agent Systems"
- David Kotz and Robert S. Gray "Mobile Agents and the Future of the Internet, Department of Computer Science / Thayer School of Engineering Dartmouth College, 1999"
- Danny B. Lang and Mitsuru Oshima. Seven Good Reasons for Mobile Agents. Communication of ACM, March 1999

Index Terms
Computer Science Security

Keywords
Distributed Systems Scalability User Authentication Digital signature Mobile Agents Mobile Code Migration

Digital Signature Algorithm (DSA)