A New Collaborative Trust Enhanced Security Model For Distributed System

Abstract

Designing a distributed system with the characteristics of reliability and trustworthiness is an important issue. Yet another important issue in the distributed system is the access of remote system which can be achieved on the basis of certain access rights, policies or authorization semantics. The aim of this paper is to establish a collaborative trust enhanced security model for distributed system in which a node either local or remote is trustworthy. This paper also provides a promising solution with trust policies as authorization semantics. While designing a new secure distributed system, it has been observed that mostly the new nodes joining the system are insecure. If these perfidious nodes are provided full authorization, they can perform malicious activities in the system. In the proposed solution, node registry and service level agreements are used to ensure the trust for a new client node. Kerberos, a network authentication protocol is also used to ensure the security aspect when a client requests for certain services. In the proposed solution, we have also considered the issue of performance bottlenecks. A Reactive agent system is proposed to balance the load of service providers with the aim of enhancing the performance of the distributed system.
Reference

- Ming He, Aiqun Hu and Hangping Qiu, "Research on secure key techniques of trustworthy distributed systems", in International Conference on Computer Engineering and Technology, 2009.
- Ming He, Aiqun Hu and Hangping Qiu, "Research on behaviour trust based on trustworthy distributed system", in International Conference on Networks Security, Wireless Communications and Trusted Computing, 2009.
- Tomoya Enokido and Makoto Takizawa, "Role based access control in Distributed Object Systems", in International Conference on Distributed Computing Systems Workshops, 2008.
- Fred B. Schneider, Steven M. Bellovin and Alan S. Inouye, "Building trustworthy systems: Lessons from the PTN and Internet", IEEE Internet Computing, November- December 1999.
- B.Clifford Neuman and Theodore Ts'o, " Kerberos: an authentication service for computer

**Index Terms**

Computer Science  
Distributed Systems

**Key words**

Kerberos  
Service level agreement  
Capability list  
Agent System