Neighbor Similarity Trust against Sybil Attack in P2P E-Commerce

Abstract

Peer to peer (P2P) e-commerce applications exist at the edge of the Internet with vulnerabilities to passive and active attacks. These attacks have pushed away potential business firms and individuals whose aim is to get the best benefit in e-commerce with minimal losses. The attacks occur during interactions between the trading peers as a transaction takes place. In this paper, we propose how to address Sybil attack, an active attack, in which peers can have bogus and multiple identities to fake their own. Most existing work, which concentrates on social networks and trusted certification, has not been able to prevent Sybil attack peers from doing transactions. Our work exploits the neighbor similarity trust relationship to address Sybil attack. In our approach, duplicated Sybil attack peers can be identified as the neighbor peers become acquainted and hence more trusted to each other. Security and performance analysis shows that Sybil attack can be minimized by our proposed neighbor similarity trust.
ARCHITECTURE

1. Neighbor similarity computational model.

Detection of Sybil attack.
EXISTING SYSTEM

In existing work on Sybil attack makes use of social networks to eliminate Sybil attack, and the findings are based on preventing Sybil identities.

DRAWBACK OF EXISTING SYSTEM

✓ It is not able to prevent Sybil attack peers from doing transactions.
✓ The attacks occur during interactions between the trading peers as a transaction

PROPOSED SYSTEM

Peer to peer (P2P) e-commerce used in proposed system. To address Sybil attack, an active attack, in which peers can have bogus and multiple identities to fake their owns. In our approach, duplicated Sybil attack peers can be identified as the neighbor peers become acquainted and hence more trusted to each other.

ADVANTAGE OF PROPOSED SYSTEM

✓ Openness, anonymity, decentralized nature, self-organization, scalability, and fault tolerance.
✓ Security and performance analysis shows that Sybil attack can be minimized by our proposed neighbor similarity trust.
SYSTEM SPECIFICATION

Hardware Requirements

- System : Pentium IV 2.4 GHz
- Hard Disk : 40 GB
- Floppy Drive : 1.44 Mb
- Monitor : 15 VGA Colour
- Mouse : Logitech
- Ram : 512 Mb

Software Requirements

- Operating system : Windows Family
- Tools : eclipse/Netbeans
- Technology Used : Java
- Backend Used : SQL Server