**GeTrust A guarantee-based trust model in Chord-based P2P networks**

**ABSTRACT:**

More and more users are attracted by P2P networks characterized by decentralization, autonomy and anonymity. However, users’ unconstrained behavior makes it necessary to use a trust model when establishing trust relationships between peers. Most existing trust models are based on recommendations, which, however, suffer from the shortcomings of slow convergence and high complexity of trust computations, as well as huge overhead

of network traffic. Inspired by the establishment of trust relationships in human society, a guarantee-based trust model, GeTrust, is proposed for Chord-based P2P networks. A service peer needs to choose its guarantee peer(s) for the service it is going to provide, and they are both required to pledge reputation mortgages for the service. The request peer makes evaluations on all the candidates of service peer by referring their service reputations and their guarantee peers’ reputations, and selects the one with highest evaluation to be its service provider. In order to enhance GeTrust’s availability and prevent malicious behavior, incentive mechanism and anonymous reputation management strategy is proposed. GeTrust is effective and efficient in terms of improving successful transaction rate, resisting complex attacks, reducing network overhead and lowering computational complexity.

**EXISTING SYSTEM:**

Several kinds of trust models have been proposed, in which the recommendation-based trust models are the most commonly used ones,which calculate the target peer’s reputation by using the globally collected recommendations. Recommendation-based approach could have a goodgrasp of the target peer’s behavioral attributes.

**Disadvantages**

* Existing recommendation-based trust models suffer from the shortcomings of slow convergence and high complexity of trust computations, as well as huge overhead of net-work traffic.
* Overlook the difference between the peer’s recommendation credibility and the peer’s global trust, or lack the effective punishment to resist collusion attacks, leading to an inaccurate evaluation on the peer.

**EigenTrust**

It is a prior recommendation-based global trust model. In Eigen Trust, every peer i owns a unique global trust, and any peer which has received service from peer i holds its local trust. This model aggregates all the peers’ local trust to calculate peer i’s unique global trust.

**Disadvantages**

 EigenTrust suffers from the problems of bad scalability, slow convergence

and high computational complexity.

 It assumes the existence of some pre-trusted peers which is infeasible in P2P

networks.

**Douwen**

It assumes that the peers with higher global trust should also be capable of providing more credible recommendations. This model manages a peer’s trust with DHT-based Terrace, which makes the system get more anonymity and robustness.

**Disadvantages**

This model neglects the difference between a peer’s trust and its recommendation credibility, and also the trust computation using Jacobi iterative algorithm after a transaction has higher complexity.

In the aspect of anti-attacks, the model only discusses the collusion between

two peers and lacks the punishment for dishonest recommenders.

**FCTrust**

It introduces a concept of feedback credibility which is determined by transaction frequency and feedback similarity. The model calculates target peer’s global trust with all the recommenders’ feedback credibility and global trust, and thus it could recognize dishonest recommendations and malicious collectives more effectively.

**Disadvantages**

This model fails to evaluate recommendations in large scale networks, as there are few common transaction nodes in such networks.

It equally assigns the weight to all the transactions instead of giving more importance to the recent ones in calculating a local trust, resulting in an inaccurate evaluation on the target peer.

**SecuredTrust**

This provides a dynamic trust computation model for effectively evaluating the trust of peers even in the presence of highly oscillating malicious behavior. To prevent the malicious peer from strategically oscillating between raising and milking its reputation, this model uses historical trust to keep track of a peer’s past behavior.

**Disadvantages**

Cost of high computational complexity.

**SocialTrust**

This designs a social P2P network, in which each peer tries to find a small number of friends through a public social tracker based on their common interests and maintains long term social links with them. It also proposes a distributed trust mechanism. The trust between two friends reflects their cooperation level and a peer with higher trust can download data from its friends more efficiently. The trust can also be propagated among friends to support indirect reciprocity.

**Disadvantages**

The public social tracker which plays an important role could be a potential problem since it lacks the redundancy and that the tracker could be malicious is not considered.

**PROPOSED SYSTEM**

In human society, a service provider who wants to be trusted by the counterparty could apply for guarantee. Since the service provider and its guarantee(s) both run the risk of damaging their reputations, they need to cooperate smoothly to provide authentic services. Inspired by the establishment of trust relationships in human society, a guarantee-based trust model, GeTrust is proposed.

A guarantee-based trust model, GeTrust, is proposed with the aid of guarantee peer(s), the request peer does not need to evaluate the service peers by using the globally collected recommendations.

GeTrust makes use of the reputation mortgages and incentives for both the service peer and its guarantee peer(s), which could encourage them to smoothly cooperate to provide authentic services and guarantees.

GeTrust gives the peers with high reputations more chances to enjoy authentic services and reliable guarantees

**Advantages**

Reduces computational and message complexity

Improve the honest peers’ experience and enhance the network availability.

**SYSTEM SPECIFICATION**

**Hardware Requirements:**

* System : Pentium IV 3.5 GHz.
* Hard Disk : 40 GB.
* Monitor : 14’ Colour Monitor.
* Mouse : Optical Mouse.
* Ram : 1 GB.

**Software Requirements:**

* Operating system : Windows XP or Windows 7, Windows 8.
* Coding Language : Java – AWT,Swings,Networking
* Data Base : My Sql / MS Access.
* Documentation : MS Office
* IDE : Eclipse Galileo