

Trudi: a Trust Diffusion Protocol for Ad Hoc Networks

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Ad Hoc Networks

- Spontaneous networks without infrastructure -
- Nodes able to meet each other -
- Management of existing and incoming relations -
- Organisation in communities -



Hypothesis & Consequences



The graph of superposed interactions grows into a social network.

The ad hoc networks dynamics is captured by these interactions graphs. Thus we have only to simulate exchanges between neighbours on particular graphs :

- complete graphs •
- power law degree distribution graphs with an increasing of the clustering coefficient.

The Protocol Trudi

Double notion of trust

- in nodes themselves (actions)
- in their opinion about the others (transmitted knowledges)

The trust managing is realized on two levels. We add a trust notion (specific indexes) on the double notion of trust.

Node i interacts with Node j

Computes the new trust (and associated indexes) using its own past trust and the external trusts received from the others. They exchange only the negative marks of their trust lists

Efficient protocol preventing bad interactions

Perspectives

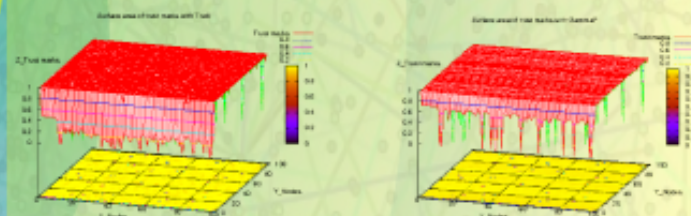
Reduction of the size of transmitted messages

Obtain a protocol efficient and reliable (facilitating good exchanges)

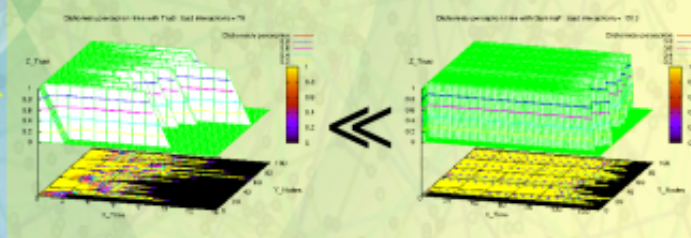
Perform tests in real P2P plateforme such as Emule

Validation by simulations

Compare the robustness of Trudi and of GammaP diffusing positive and negative trust marks without using the double level of trust against different kinds of attacks .



Trojan attack



References

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