

Privacy Protection for P2P Publish-Subscribe Networks*

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Abstract. P2P systems are mainly used as distributed file systems; until recently no P2P version of newsgroups protocol existed. A DHT-based Publish-Subscribe (Pub-Sub) system by Aekaterinidis and Triantafillou is the first such a solution: a user interested in a particular topic subscribes it so that later he receives messages on new events on this topic once they occur.

Pub-Sub systems as proposed cause severe privacy problems - a user who posts a new message on some subject has to fetch the list of all nodes who subscribed to this content. This in turn means that an adversary has a straightforward and legal tool to get information who is interested in a particular topic.

In this paper we show how to enhance the system in order to protect user privacy. This includes anonymizing the users as well as hiding information on system dynamics and delivery of messages through anonymous paths. We also show how to protect such a system from spam activity.

* partially supported by KBN project 0 T00A 003 23, and by the EU within the 6th Framework Programme under contract 001907 (DELIS).