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### Title

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# Increasing Object Visibility In Decentralized Unstructured Peer-To-Peer Networks Using Content Based Routing

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## Abstract

Decentralized unstructured peer-to-peer networks rely on inefficient flooding based mechanisms to locate objects. In order to limit the effects of flooding, all requests are only allowed to remain in the network for a limited number of hops. Due to this queries originating at any node in the network can only cover a small portion of the peer-to-peer overlay network. This creates situations in which objects are "not visible" to all the nodes inside of the network.

This paper introduces mechanisms that have a two-folded effect, **1)** reduces the effect of flooding by identifying the common interests between the peers and organizing the peer-to-peer overlay based on these common interests ensuring that the set of peers a query is propagated through are likely to share objects in the same category of interest as the request, and **2)** guarantees finding the location of any object that has been shared in the system, by building and utilizing distributed catalogues of interests.

We applied our ideas on the gnutella network and developed and deployed a modified gnutella client using our new mechanisms.

Please contact the authors for the full version of the paper.