SmoothFlood: decreasing redundant messages and increasing search quality of service in peer-to-peer networks

ABSTRACT

Flooding search is a basic searching scheme for unstructured peer-to-peer networks. This technique produces exponentially redundant messages in each hop. Subsequent growths of redundant messages will limit system scalability and will cause unnecessary traffic in network areas. To improve this searching scheme and reduce redundant messages, this paper proposed a novel algorithm (SmoothFlood) which divides flooding scheme into two stages. In first stage algorithm follows standard flooding by the limited number of hops, but in the next stage it will choose nosy nodes in each region. These nodes maintain the data index of all clientsø nodes. This proposed algorithm extends the search quality by reducing redundant messages in each hop. Simulation results show it will decrease more than 65 percentages of redundant messages and will save up to 70 percentages of searching traffic.

Keyword: Peer-to-peer; Searching technique; Redundant messages