Abstract

Nowadays, DHT-based P2P technology is used as a basis in many widespread applications because of its scalability, robustness, and load balance. Many applications, including file sharing, communication and live video streaming are in a large distributed network environment. For an efficient and effective search in large data repositories, complex query processing becomes a major issue for DHT. Towards the goal of supporting complex queries in DHT-based P2P systems, this paper focuses on the usage of k-dimensional tree to build a tree-based index. The proposed index is built without modifying the structure of the overlay network. In this paper, the load balancing among peers is also considered according to the usage of kd-tree. Therefore the performance of kd-tree is studied and show that how it can affect the proposed index over P2P network. In this paper, PlanetSim simulator is used to implement the proposed index and evaluate the performance of the index by using various metrics.

- "Skype": http://www.skype.com
- "Zattoo-Live TV and More": http://zattoo.com
- E. Tanin, A. Harwood, and H. Samet, "A Distributed Quadtree Index for Peer-to-Peer Setting", in Proceedings of the 21st International Conference on Data Engineering, April 5-8, 2005, Tokyo, Japan.
- Y. Shu, B. C. Ooi, K. L. Tan, and A. Zhou, "Supporting Multi-dimensional
- DBLP. http://dblp.uni-trier.de/xml.

**Index Terms**

Computer Science

Information Systems
Keywords

Indexing over DHT  DHT-based indexing system  Query processing over DHT
Indexing in structured P2P systems