SEARCHING IN PEER TO PEER NETWORKS

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Abstract : In this paper we will apply the basic searching techniques in 2T-DHT networks.2T-DHT are two tier networks containing two kinds of peers,that is normal peers and superpeers.These searching techniques have already beeen implemented in 1T-DHT which is a single tier network.The seraching techniques are used to locate any file or data item present in any network.Data location can be easliy searched as we assign a key to each node present in any network,and storing the key data item pair at the node tp which the key maps.

1. INTRODUCTION:

Peer to Peer systems have emerged as a popular way to share huge volumes of data.For example, the Morpheus[1] multimedia file sharing system reported over 470,000 users sharing a total of .36 petabytes of data.In addition to the ability to pool together and harness large amounts of resources,the strengths of existing peer to peer systems(e.g. [1],[2],[3],[4]).The usability of these systems depends on effective technique to find and retrieve data.These are distributed systems in which nodes of equal roles and capabilities exchange information and services directly with each other.Peer to peer has emerged as a popular way to share huge variety of data.Gnutella is the largest open peer to peer system in operation.We have to look forward for the most effective and efficient techniques for search and retrieval of data

1T-DHT is a single tier network in which nodes lie in the same plane.The searching techniques are already implemented in these networks.

2T-DHT is a two tier network containing normal peers and superpeers.Superpeers are present in a upper tier ring which are attached to lower tier peers known as normal peers.

The peers are grouped according to their IDs such that IDs of normal peer that lie under a superpeer must lie between its superpeers ID and superpeer predecessor ID.Peers in both overlays maintain information about their neighbours and routing.This routing information is known as finger tables.

We have to look for the most effective and efficient technique for search and retrieval of data. Peer to Peer systems usability depends on the retrieval of data.2T-DHT are the networks which the nodes do not lie on the same plane like 1T-DHT.Efficient techniques are already implemented in 1T-DHT.We are looking forward to apply these techniques on 2T-DHT in a time effective and a cost effective manner.

We are going to implement the searching techniques in 2T-DHT with the help of finger table. Finger table is maintained for each node present the network. These finger table helps to locate the node that stores a particular data item. A key is assigned to each node which maps the key onto a node. Data location can be easily implemented by associating a key with each

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data item and storing the key/data item pair at the node to which the key maps.

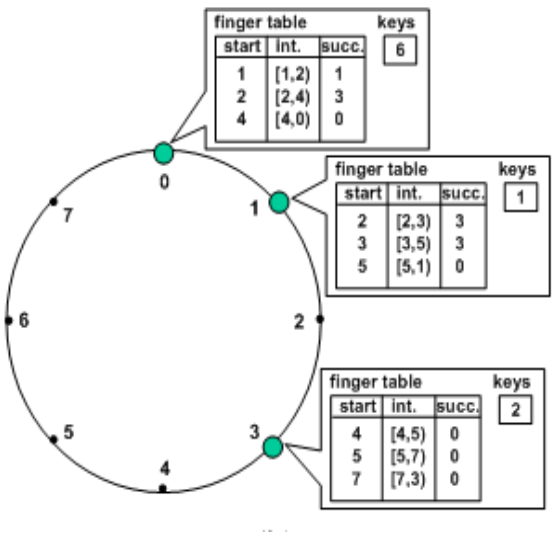
2. RELATED WORK:

2.1. PEER TO PEER NETWORKS:

Peer to peer share huge volumes of data.The usability of these systems depends on effective techniques to find and retrieve data.Gnutella is the largest open P2P system in operation.Peer to peer systems are distributed systems in which nodes of equal roles and capabilities exchange information and services directly with each other.For storage or archieval systems focussing on availability,research techniques such as[5,6,7,8].Sharing such large volumes of data is made possible by distributing the main costs-disk space for storing the files and bandwidth for transferring them- across the peers in the network.

2.2. 1T-DHT:

1T-DHT are the networks in which the nodes lie on the same plane.The following searching techniques are already implemented in these network.



2.2.1. Directed BFS:

In this we intelligently select neighbours, a node maintain simple statistics on its neighbours,such as number of results received through that neighbor for past queries,or the latency of the connection with that neighbor,From these statistics we develop a number of heuristics to help us to select the best neighbor to send the query.

2.2.2. Iterative Deepening:

It is a well known technique used in other contexts such as search over state space in artificial intelligence[9].Here a policy is defined which is a set of all the depths,First the request is send to node presend at depth a,if the query has been statisfied no futher processing is done otherwise the request will be send to node present in depth b.

2.2.3. Local Indices:

In this searching technique query source will send the query message out to its neighbours at depth 1.All these nodes will process the query and send it to all the neighbours at depth 2.Nodes at depth 2 will not process the query but will forward the query message to depth 3.This will continue till the node with the required data is found.

3. PROPOSED APPROACH:

2T-DHT are the systems in which all the nodes are not present in the same plane. There are two kinds of peers present, superpeers and normal peers. The superpeers are attached to the lower tier peers named as normal peers.These peers are grouped according to their IDs such that the IDs of normal peers that lie under a superpeer must lie between its superpeer ID and superpeer-predecessor ID.

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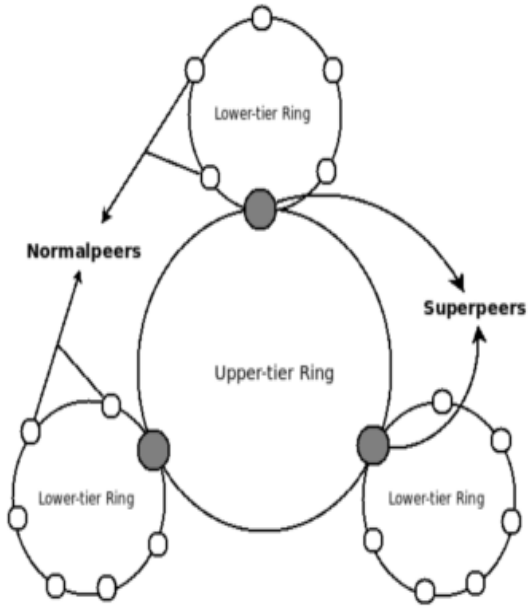
- ID- This field keeps the peer identifier.
- Predecessor- This field keeps the ID of its predecessor.
- Successor- This field keeps the ID of its successor.
- Superpeer- This field keeps the ID of the superpeer to which it is attached.
- SuperpeerPredecessor- This field keeps the ID of the upper tier predecessor of its superpeer.



- If no. of super-peers = m then

no. of lower rings =< m;

no. of normal peers =< (2^m -1); //in each lower ring

- If no. of normal-peers > (2^m -1) then

m=m+1;

update(no. of lower rings);

update(no. of normal-peers);

4. ANALYSIS OF PROPOSED METHOD:

The analysis of proposed method help us to find the update in the number of normal peers and super peers in each upper tier and lower tier ring.When the number of normal peers changes it affects both the upper tier and lower tier ring so the number of superpeer can also change.

5. CONCLUSION:

The searchin techniques are now applied in 2T-DHT with the help of finger table which is use to store the information about each node.Finger table is mantained for each node present in the network.And with the help of the finger table we will find a particular node in a network which is used to find the data item or file needed by any user.

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6. REFERENCES:

[1]. Morpheus website http://www.morpheus-os.com

[2]. Napster website http://www.napster.com

[3]. Gnutella website http://www/gnutella.com

[4]. Freenet website http://freenet.socurceforge.net

[5].I.Stoica,R.Morns,D.Karges,M. F. Kaashwek and h.Balakrishnana Chord:A scalable peer to peer lookup service for internet application,August 2001

[6]. A.Rawstrol and P.Druschel Storage management and catching in past, a large scale persistent peer to peer storage utility,October 2001

[7]. B.Zhaao,J.Kubeatowicz and A.Joseph Japestry:An infrastructure for fault tolerant wide area networklocation and routing,April 2001.

[8]. S.Ratnasamy,P.Francis ,M.Handly,R.Karp and S.Shenker A saclable current addressable network,August 2001.

[9]. S.Russel and P.Norwig: A mordes Approach,Practice HAll,1995

ISBN: 9788175157538