International Journal of Soft Computing and Engineering (IJSCE)
ISSN: 2231-2307, Volume-2 Issue-1, March 2012

Efficient and Dynamic Behaviour of Continuous Query in Unstructure Overlay Network

V.Sindhu, U.L.Sindhu, P.S.Balamurugan

Abstract: ***The main objective of the peer to peer content distribution systems are to register for a long term presence in a network and to publish its own data to that network. These requirements can be done by having some set of indexing and routing techniques. For this solution, a sequence of approaches has been already proposed by the existing researchers. But these approaches are not flexible for these systems and too complex. In the unstructured p2p system it uses to retrieve the data if it matches. Also, certain limitations are obtained. In order to solve this problem, we propose an approach of continuous query in unstructured overlay network with consistency maintenance. In peer-to-peer, consistency maintenance is widely used techniques for high system performance. This approach is to support the continuous queries in unstructured overlay networks. It achieves high efficiency and consistency maintenance at a significantly low cost. Simulation results demonstrate the effectiveness of our proposed approach in comparison with other existing approaches.***

Index terms: consistency maintenance, continuous query, peer to peer

I. INTRODUCTION

Peer-to-Peer has a tremendous growth in file sharing system. The current decentralized P2P can build in both structured and unstructured. The former organize peers in a structure that strictly conforms to the desired topology and that restricts which connections peers may establish as well as the resource placement. The unstructured variant offers few or no restrictions, allowing the peers to connect in a random topology[7].

Locating an item in unstructured overlays with moderate resource consumption is an interesting challenge.The unstructured P2P networks designed simple, and very flexible. Searching in these networks is essentially performed by circulating query messages. In that circulation it extracts the related data if it has any matching content. Once a query has been processed at a node, it is removed from the local buffers. The query lives within p2p only until its circulation to the various nodes are processed in this overlay. Once a query completes their circulation, the system essentially forgets it. Also, peers can advertise their content to other interested peers .Our existing researchers used Publish-Subscribe method in the unstructured overlay network.

This publish-subscribe system enables the users to register subscriptions expressing their interests and to announce the occurrence of certain events by publishing them.This system matches incoming announcements to the existing subscriptions and notifies the users that have registered the matching subscriptions. The significant point to note is that publish-subscribe systems attempt to provide guaranteed notification service [6]. But it may not be possible always due to system failures. It is one of the serious limitations. But in this overlay beacon nodes is used, it has a lot of common neighbours so it extract the data from neighbour nodes hence the searching time is less. Pure random walk method is used to register the query in various regions.

We enhanced the proposed approach with consistency maintenance in unstructured overlay network. Consistency maintenance is to maintain the consistency between queries. Here the node might be

Generated or failed or deleted. Instead of passively accepting updates, each node determines update polling by dynamically adapting to time-varying file query and update rates, which avoids unnecessary file updates.To be aware of this we employ a polling method, in which the replica node itself polls the peer for update continuously.So here efficiency is use to improve the process. It achieves high efficiency at significantly lower cost.

II. DESIGN OF CONTINUOUS QUERY MODEL

In this paper, we focus on continuous query in unstructured model. This continuous query in unstructured overlay doesn't need of indexing scheme. The fundamental idea of this system is to register the continuous query on a set of peers that are located in various topological regions of the overlay network and satisfy the peer needs. The basic idea is to maintain a continuous query at multiple locations in the network. Here, it uses to send the announcement between the different peer and this process is highly decentralized, the great challenge is to register the query in various regions of network. While registering the query it represented in three notations as source node, predicate, validity time, whereas the source node identifies the peer issuing the query, predicate is to extract the relevant data to satisfy the query, validity time is to represent the time until the source node is interested in receiving notification.

Revised Manuscript Received on March 2012.

V.Sindhu, Pursuing M.E. Computer Science in Karpagam University, Coimbatore .India (Email: v.sindhu.velu@gmail.com)

U.L.Sindhu, Pursuing M.E. Computer Science in Karpagam University, Coimbatore .India (Email:sindhulth@gmail.com)

P.S.Balamurugan, Pursuing his Doctoral degree at Anna University, Coimbatore. He is working as Assistant Professor at Karpagam College of Engineering Coimbatore, India. Email:(balabeme@gmail.com)

Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication

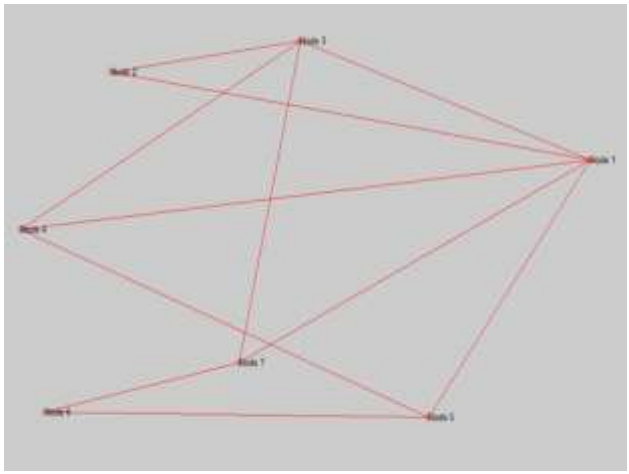

Fig 1.Simple design of Continuous query

The figure1 represent simple design of continuous query. Seven nodes are present in this overlay. The source node use to request the query. This announcement sends to all possible nodes present in the overlay. And, it searches the matching content and gives the response for those requests.

III. CHOOSING BEACON NODES

The query registered in the peer is said to be beacon node. In the unstructured overlay network the query typically has multiple beacon nodes. Beacon nodes of query must be distributed in overlay network. The beacon nodes of a query should not to be present very close to one another. If lot of registration present nearer to one another, it use to send a single announcement that would reach multiple beacon nodes because cluster of nodes are connected each other. Beacon nodes discover new data through incoming peer announcements. Beacon nodes would have a significant impact on the notification success rates of a continuous query. Therefore, a main idea is to select a set of peers to host the continuous query (i.e. become one of its beacon nodes) so that the notification effectiveness is maximized. In our simulation twenty nodes are present in the process which take place within overlay. In this approach, We can select beacon nodes and twenty nodes are present in the overlay, the query register in the source node and announcement from node1 will be received between those twenty nodes and it also evaluate which beacon nodes has received those announcement meanwhile which don't get the announcement. Iteration use to occur with different possibilities.

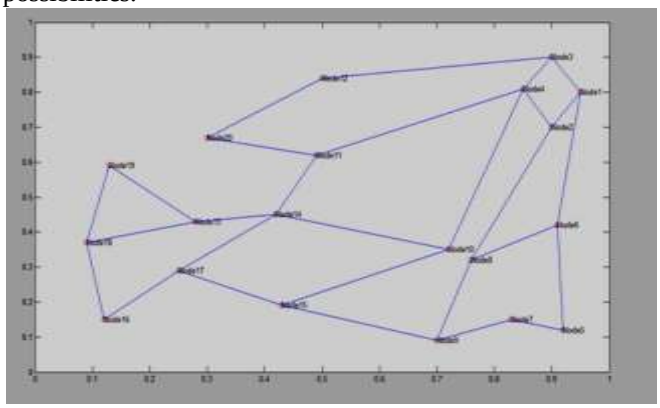

Fig 2.Continuous query in unstructured overlay system for beacon node process

IV. EXISTING METHODOLOGY

A. Technique used:

In this section, we present a high-level technique of the Continuous query system architecture. Here, Cluster resilient Random walk favours neighbours that are more likely to send messages deeper into the network thereby enabling the continuous queries to reach different topological regions of the overlay network. Multiple walkers techniques is introduced it use to travel in multiple path it use to split the message and forward to multiple neighbours. When a new message was received by a peer node Whose Time–To-Live is not expired it select randomly one neighbour through random approach and forwards the message to peer because one or common neighbours are present in it. Cluster resilient random walk approach is best technique in all condition. Figure 3 represents the cluster resilient random walk approach. In the simulated result given below are different outputs of random walk registering query in various areas regions between those twenty nodes.

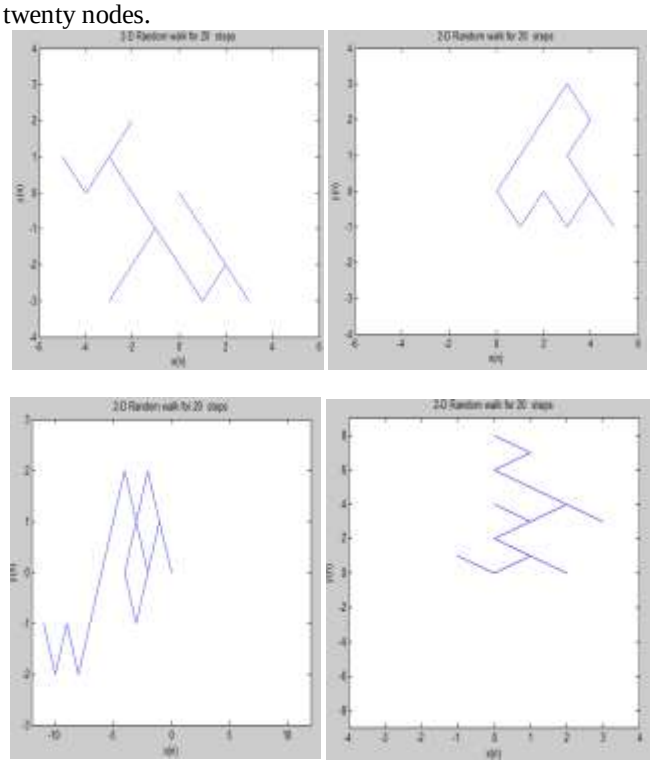

Fig3.Cluster Reslient Random walk

In the dynamic probability scheme it makes the user to register the query independently. If the query has not been registered in the past several hops it has a high priority to register in its next hop, which ensures that registrations are well distributed along the path of a query message. Finally, a load redistribution strategy to achieve fair distribution of notification loads among the participating peers.

V. PROPOSING METHODOLOGY

A. Consistency maintenance:

We proposed a technique called consistency maintenance.It is to improve the better performance. Maintaining consistency between frequently updated and

also infrequently updated query it is a fundamental reliability requirement for a P2P system [2][10]. In P2P node join and leave continuously and rapidly. In this method it uses to give a guarantee query update. It undergoes an algorithm called Additive increase multiplicative decrease. This algorithm adjustment policy is optimal or even necessary for convergence to fair resource sharing. It has been effectively used in many systems to adapt to

Changing system conditions that is, frequently modified queries are polled more frequently than relatively static queries. The node frequently polls the user based on two condition.1) what frequency, node polls the sever for update 2) to reduce the polling method to save cost and to maintain accuracy in consistency maintenance. Here, often time to refresh must takes place. The TTR value is changed frequently based on the results of the polling.

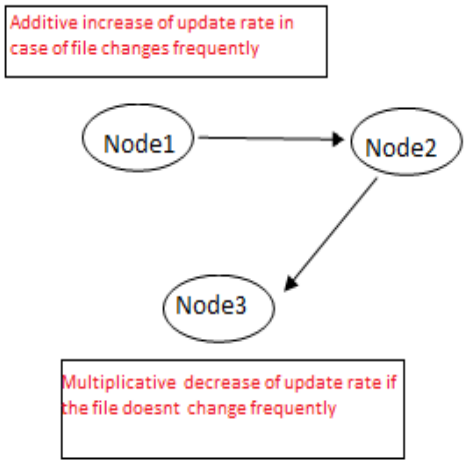

Fig 4.Algorithm implementation

Hence, it avoids erroneous in the resulting peer. This method ensures up-to-date query response at a reducing cost.

B. Performance evaluation:

Finally in this performance metric we will be evaluating the performance of the proposed approach in consistency maintenance with existing approaches. The parameter metrics used here for evaluating the performance of the proposed approach are announcement in various regions, The result expected will be scenario based and the prediction is accurate.

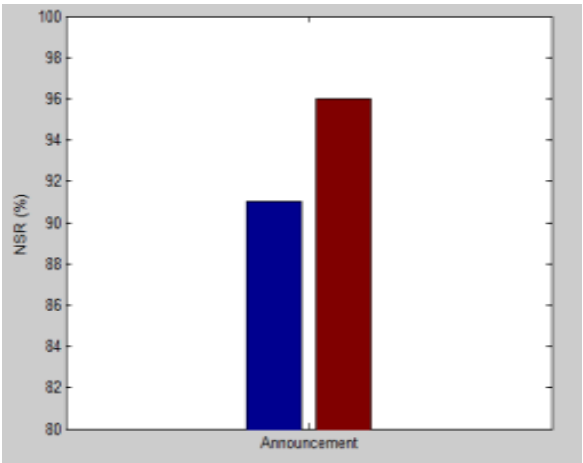

Fig5.performane evaluation

In the figure 5 the graph is drawn between NSR (Notification Success Rate) and the announcement, from the graph we can notice our proposing concept shows high performance in update query response.

VI. CONCLUSION

In the unstructured overlay network processing of a continuous query is a challenging. We had undergone the features of consistency maintenance, random walk, P2P approach. Consistency maintenance is important to the sharing of dynamic contents in peer-to-peer networks .In the unstructured overlay networks, it improve the process efficiency of content sharing over P2P networks under consistency maintenance. It significantly reduces the query cost and achieves high efficiency to maintain the update response to the peers.

The proposed has been evaluated through simulation results.

REFERENCES

1. J. Chen, L. Ramaswamy, and A. Meka, “Message Diffusion in Unstructured Overlay Networks,” Proc. Sixth IEEE Int’l Symp . Network Computing and Applications (NCA),2007.
2. Gnutella Home Page, http://www.gnutella.com, 2008.
3. G. Xie , Z. Li, and Z. Li, “Efficient and Scalable Consistency Maintenance for Heterogeneous Peer-to-Peer Systems,” IEEE Trans. Parallel and Distributed Systems, vol. 19, no. 12, pp. 1695-1708, Dec. 2008.
4. A. Muthitacharoen, B. Chen, and D.M. Eres, “A Low-Bandwidth Network File System,” Proc. ACM Symp. Operating Systems Principles (SOSP), pp. 174-18, 2001.
5. rsync, http://en.wikipedia.org/wiki/Rsync, 2009
6. R. Baldoni, C. Marchetti, A. Virgillito, and R. Vitenberg, “Content-Based Publish-Subscribe over Structured Overlay Networks, ”Proc. 25th IEEE Int’l Conf. Distributed Computing Systems (ICDCS),2005.
7. E. Cohen and S. Shenker, “Replication Strategies in Unstructured Peer-to-Peer Networks,” Proc. ACM SIGCOMM ’02, Aug. 2002.
8. Y. Chawathe, S. Ratnasamy , L. Breslau, N. Lanham, and S. Shenker, “Making Gnutella-Like P2P Systems Scalable,” Proc.ACM SIGCOMM ’03, 2003.
9. I. Stoica, R. Morris, D. Karger, M.F. Kaashoek, and H. Balakrishnan, “Chord: A Scalable Peer-to-Peer Lookup Service for Internet Applications,” Proc. ACM SIGCOMM ’01, Aug. 2001.
10. X. Chen, S. Ren, H. Wang, and X. Zhang, “SCOPE: Scalable Consistency Maintenance in Structured P2P Systems,” Proc.IEEEINFOCOM,2005

AUTHORS PROFILE

V.Sindhu received BE Degree in Computer Science And Engineering from Anna University, Chennai. She is Pursuing her ME in Karpagam University Coimbatore, India . Email: v.sindhu .velu@gmail.com

U.L.Sindhu received B.Tech Degree in Information Technology From Anna University, Chennai. She is pursuing her ME in Karpagam University Coimbatore ,India Email:sindhulth@gmail.com

Prof. P.S.Balamurugan received BE Degree in 2003 from Bharathiyar University Coimbatore and ME in 2005 From Anna University Currently he is Pursuing his Doctoral degree at Anna University Coimbatore. He is working As Assistant Professor at Karpagam College of Engineering Coimbatore ,India. Email:balabeme@gmail.com