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STATEMENT OF THE PROBLEM

OBJECTIVES

HYPOTHESES

RESEARCH METHODOLOGY

RESULTS & DISCUSSION

FINDINGS

RECOMMENDATIONS/SUGGESTIONS

CONCLUSIONS

SCOPE FOR FURTHER RESEARCH

ACKNOWLEDGMENTS

REFERENCES

APPENDIX/ANNEXURE

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JOURNAL AND OTHER ARTICLES

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A DECENTRALIZED INDEXING AND PROBING SPATIAL DATA IN P2P SYSTEM

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ABSTRACT

Peer-to-peer (P2P) networking technologies have gained popularity as a mechanism for users to share files without the need for centralized servers.In existing, research focused on P2P systems that host 1D data. At present, the need for P2P applications with multidimensional data has emerged, motivating research on P2P systems that manage such information. Our focus is on structured P2P systems that share spatial information. We present SPATIALP2P, a totally decentralized indexing and searching framework that is suitable for spatial data. SPATIALP2P supports P2P applications in which spatial information of various sizes can be dynamically inserted or deleted, and peers can join or leave.Our goal is to create from scratch a technique that is inherently distributed and also maintains the multidimensionality of data. Our focus is on structured P2P systems that share spatial information. The proposed technique preserves well locality and directionality of space and also it maintains the security while showing the information. We discuss cryptography techniques can be used to address the security issues.

KEYWORDS

Spatial Data, Security, Cryptography techniques, Peer-to-Peer,structured overlays, distributed hash tables.

INTRODUCTION

Peer-to-peer systems, beginning with Napster, Gnutella, and several other related systems,became immensely popular in the past few years, primarily because they offered a way for people to get music without paying for it. However, under the hood, these systems represent a paradigm shift from the usual web client/server model, where there are no “servers;” every system acts as a peer, and by virtue of the huge number of peers,objects can be widely replicated, providing the opportunity for high availability and scalability, despite the lack of centralized infrastructure.

Until recently, research has focused mostly on P2P systems that handle 1D data such as strings and numbers. However, the need for P2P applications that manage multidimensional data has emerged. These systems pose additional requirements that stem from the particularities of such data. In centralized multidimensional applications, information is stored according to its multidimensional extent using an indexing structure.

Making these systems “secure” is a significant challenge. In general, any system not designed to withstand an adversary is going to be broken easily by one, and P2P systems are no exception. If p2p systems are to be widely deployed on the Internet (at least, for applications beyond sharing “pirate” music files), they must be robust against a conspiracy of some nodes, acting in concert, to attack the remainder of the nodes.Attackers might have a number of other goals, including traffic analysis against systems that try to provide anonymous communication, and censorship against systems that try to provide high availability.

So, with all of that in mind, here are four key points to consider when using P2P networks to try use them as securely as possible:

I. DON'T USE P2P ON A CORPORATE NETWORK

At least, don't ever install a P2P client or use P2P network file sharing on a corporate network without explicit permission- preferably in writing. Having other P2P users downloading files from your computer can clog the company's network bandwidth. That is the best-case scenario. You may also inadvertently share company files of a sensitive or confidential nature. All of the other concerns listed below are also a factor.

II. BEWARE THE CLIENT SOFTWARE

There are two reasons to be cautious of the P2P network software that you must install in order to participate on the file-sharing network. First, the software is often under fairly continuous development and may be buggy. Installing the software might cause system crashes or problems with your computer in general. Another factor is that the client software is typically hosted from every participating user's machine and could potentially be replaced with a malicious version that may install a virus or Trojan on your computer. The P2P providers do have security safeguards in place which would make such a malicious replacement exceptionally difficult though.

III. DON'T SHARE EVERYTHING

When you install P2P client software and join a P2P network like BitTorrent, there is generally a default folder for sharing designated during the installation. The designated folder should contain only files that you want others on the P2P network to be able to view and download. Many users unknowingly designate the root "C:" drive as their shared files folder which enables everyone on the P2P network to see and access virtually every file and folder on the entire hard drive, including critical operating system files.

IV. SCAN EVERYTHING

You should treat all downloaded files with the utmost suspicion. As mentioned earlier, you have virtually no way of ensuring that what you downloaded is what you think it is or that it doesn't also contain some sort of Trojan or virus. It is important that you run protective security software such as the Prevx Home IPS and/or antivirus software. You should also scan your computer periodically with a tool such as Ad-Aware to ensure you haven't unwittingly installed spyware on your system. You should perform a virus scan using updated antivirus software on any file you download before you execute or open it. It may still be possible that it could contain malicious code that your antivirus vendor is unaware of or does not detect, but scanning it before opening it will help you prevent most attacks.

RELATED WORK

EXISTING SYSTEM

Existing works first, order multidimensional data using a space-filling curve and, then, define a distance according to this ordering. The main challenge of these approaches is to preserve the important properties of multidimensional space (i.e., locality and directionality). Unfortunately, space-filling curves do not always preserve locality and directionality. For instance, two multidimensional regions that are close in the original space are not necessarily close in the z-ordering curve. The searching strategy of the P2P network inherits these locality problems of the 1D ordering.

LIMITATIONS OF EXISTING SYSTEM

- Low space and time complexity.
- To handle only 1D data such as strings and numbers.
- Information in a centralized manner.
- There is no proper load balancing and do not maintains the security.

PROPOSED SYSTEM

We propose SPATIALP2P, a totally decentralized framework for spatial (i.e., 2D) data that conforms to the autonomy principle of P2P networks. SPATIALP2P provides storing, indexing, and searching services for spatial data in a P2P network. SPATIALP2P exploits existing experience in the field of DHTs and can be built on top of any 1D DHT. Thus, SPATIALP2P distributes the spatial information to peers and guarantees the retrieval of any spatial area that exists in the system with low space and time complexity. Additionally, SPATIALP2P efficiently handles changes in the spatial information and in the network structure caused by joining or leaving peers without the need of load balancing or restructuring.

The Proposed System uses three techniques they are properly distributed:

- Using an indexing structure.
- We can avoid the traffic of data by using index searching.
- We can use the RSA algorithm (cryptography technique) for the security purpose.

ADVANTAGES

- It achieve data and search load balancing.
- No traffic bottleneck in the network.
- Provides security while providing information.

Typically, indexing structures preserve the locality and the directionality of multidimensional information. Intuitively, locality implies that neighboring multidimensional information is stored in neighboring nodes, while directionality implies that the index structure preserves orientation. The notions of locality and directionality are very important. If an index structure preserves these properties then searching in the index corresponds to searching in the multidimensional space which can highly improve query evaluation cost.

ALGORITHMS:

BACKGROUND WORK

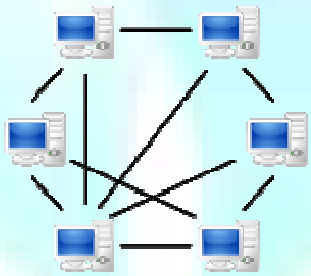
PEER-TO-PEER (P2P)

Computing or networking is a distributed application architecture that partitions tasks or work loads between peers. Peers are equally privileged, equipotent participants in the application. They are said to form a peer-to-peer network of nodes.

P2P CHARACTERISTICS

- **Self organizing:** no global directory of peers or resource
- **Symmetric communication:** no client/server role
- **Decentralized control:** no centralized sever

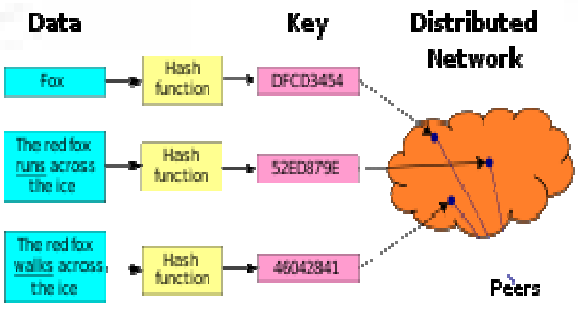
FIG. 1: A PEER-TO-PEER SYSTEM OF NODES IN DECENTRALIZED INFRASTRUCTURE.



DISTRIBUTED HASH TABLE (DHT)

Is a class of a decentralized distributed system that provides a lookup service similar to a hash table; (key, value) pairs are stored in a DHT, and any participating node can efficiently retrieve the value associated with a given key. Responsibility for maintaining the mapping from keys to values is distributed among the nodes, in such a way that a change in the set of participants causes a minimal amount of disruption. This allows a DHT to scale to extremely large numbers of nodes and to handle continual node arrivals, departures, and failures. DHT-based networks have been widely utilized for accomplishing efficient resource discovery for grid computing systems, as it aids in resource management and scheduling of applications. Resource discovery activity involves searching for the appropriate resource types that match the user's application requirements. Recent advances in the domain of decentralized resource discovery have been based on extending the existing DHTs with the capability of multi-dimensional data organization and query routing.

FIG. 2: DISTRIBUTED HASH TABLES



SPATIAL DATA

Also known as geospatial data or geographic information it is the data or information that identifies the geographic location of features and boundaries on Earth, such as natural or constructed features, oceans, and more. Spatial data is usually stored as coordinates and topology, and is data that can be mapped. Spatial data is often accessed, manipulated or analyzed through Geographic Information Systems (GIS).

SECURITY

- Application level security using user id and private key.
- Secured Socket Layer.
- All Messages are kept encrypted in a file.
- Failure of controller's does not affect the groups operations.

CONCLUSION

Research in P2P systems has recently expanded in the domain of multidimensional data. This paper has surveyed some security issues that occur in peer-to-peer overlay networks, both at the network layer and at the application layer. We have shown how techniques ranging from cryptography through redundant routing to economic methods can be applied to increase the security, fairness, and trust for applications on the p2p network.

However, the reusage of existing techniques in the approaches in both categories leads to the maintenance of some fundamental features that oppose to the nature of either the distributedness or the multidimensionality. Our intention is to overcome these shortcomings by creating a technique that manages disperse multidimensional data in an inherently distributed way without altering the dimensionality.

We have presented the SPATIALP2P framework for handling spatial data in a P2P network. SPATIALP2P provides efficient storing, indexing, and searching services by preserving locality and directionality. As a result, SPATIALP2P performs exceptionally well for point and range query operations. SPATIALP2P supports dynamic insertion and deletion of spatial information of various sizes and dynamic joining and leaving of peers.

FUTURE ENHANCEMENTS

This project addresses some technical challenges, i.e., Locality Preserving Function, query and update routing protocols, and cluster-preserving load balancing. A high level of object clustering is achieved by using the LPF on top of the existing DHTs without requiring much change to the DHTs. Efficient query and update routing protocols maximize the benefit of object clustering by significantly reducing the number of DHT lookups. The load balancing schemes well distribute loads among peer nodes while preserving the clustering property.

In the future, want to solve the challenges and intend to adjust and test the SPATIALP2P framework for data of higher dimensions.

ACKNOWLEDGMENTS

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REFERENCES

[1] Sit, E., Morris, R.: Security considerations for peer-to-peer distributed hash tables. In: Proceedings for the 1st International Workshop on Peer-to-Peer Systems (IPTPS '02), Cambridge,Massachusetts (2002)

[2] Y. Shu, B. Ooi, K.-L. Tan, and A. Zhou, "Supporting multi-dimensional range queries in peer- to-peer systems," in Proc. of P2P, 2005.

[3] P. Ganesan, B. Yang, and H. Garcia-Molina, "One torus to rule them all: Multi-dimensional queries in p2p systems," in Proc. of WebDB, 2004.

[4] C. Tang, Z. Xu, and S. Dwarkadas, "Peer-to-peer information retrieval using self-organizing semantic overlay networks," in Proc. of SIGCOMM, 2003.

[5] P. Maymounkov and D. Mazieres, "Kademlia: A peer-to-peer information system based on the xor metric," in Proc. of IPTPS, 2002.

[6] A. Mondal, Yilifu, and M. Kitsuregawa, "P2PR-tree: An R-tree-based spatial index for peer-to-peer environments," in Proc. of DBISP2P, 2004.

[7] C. Schmidt and M. Parashar, "Flexible information discovery in decentralized distributed systems," in Proc. of HPDC, 2003.

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