Cominga Well-Organized Hiding System And Constancy Conservation In Mixture P2P System

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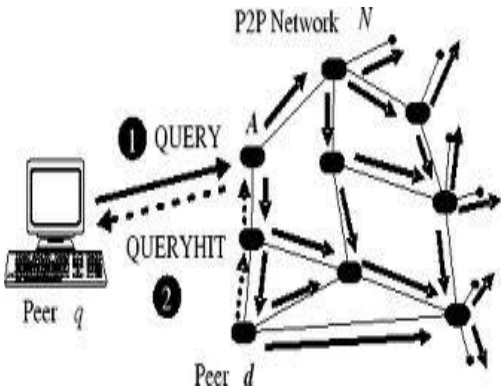
ABSTRACT

Peer-to-peer overlay networks are widely used in distributed systems. P2P is a popular technology used for file sharing. File replication and Consistency maintenance are the techniques used in P2P for high system performance. The objective of this work is to design a hybrid peer-to-peer system for distributed data sharing which combines the advantages of both types of peer-to-peer networks and minimizes their disadvantages. However, in peer-to-peer networks, Information Retrieval (IR) performance is determined by both technology and user behavior, and little attention has been paid in the literature to improving IR performance through incentives to change user behavior.The proposed hybrid peer-to-peer system is composed oftwo parts: the first part is a structured core network the second part is multiple unstructured peer-to-peer networks each of which is attached to a node in the core network.Our cachingscheme can deliver lower query delay, better load balance and higher cache hit ratios.

KEY WORDS*: hybrid, peer-to-peer systems,consistency maintenance.*

I. INTRODUCTION:

Peer-to-peer overlay networks are widely used in distributed systems. Based on whether a regular topology is maintained among peers, peer-to-peer networks can be divided into two categories: structured peer-to-peer networks in which peers are connected by a regular topology, and unstructured peer-to-peer networks in which the topology is arbitrary. Structured peer-to-peer networks usually can provide efficient and accurate services but need to spend a lot of effort in maintaining the regular topology. On the other hand, unstructured peer-to-peer networks are extremely resilient to the frequent peer joining and leaving but this is usually achieved at the expense of efficiency.Our simulation results demonstrate that the hybrid peer-to-peer system can utilize both the efficiency of structured peer-to-peer network and the flexibility of the unstructured peer-to-peer network and achieve a good balance between the two types of networks.In peer-to-peer file sharing systems, file replication and consistency maintenance are widely used techniques for high system performance.



Hybrid peer-to-peer architectures use special nodes to provide directory services for regions of the network ("regional directory services"). Hybrid peer-to-peer architectures are a potentially powerful model for developing large-scale networks of complex digital libraries, but peer-to-peer networks have so far tended to use very simple methods of resource selection and document retrieval. In this paper, we study the application of content-based resource selection and document retrieval to hybrid peer-to-peer networks.

Recently, a number of technologies in peer-to-peer (P2P) networking have been developed. This pure P2P personal and social networking paradigm, however, has its own limitations. For example, P2P networks without any infrastructure support offer no connectivity guaranties. In this paper, we propose a hybrid peer-to-peer system for distributed data sharing which combines the structured and unstructured peer-to-peer networks.

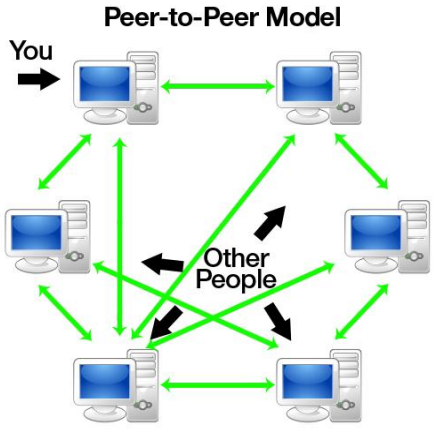
RELATED WORK: Peer-to-peer networking is the utilization of the relatively powerful computers (personal computers) that exist at the edge of the Internet for more than just client-based computing tasks. They do not aim to integrate P2P systems with general Internet services. Furthermore, infrastructure-nodes are not perceived and used by the users as personal devices. Some existing file-sharing P2P systems assume that the shared data are static or read-only, so that no update mechanism is needed. Peer-to-peer networking has the following advantages over client/server networking:

- Content and resources can be shared from both the center and the edge of the network. In client/server networking, content and resources are typically shared from only the center of the network.
- A network of peers is easily scaled and more reliable than a single server. A single server is subject to a single point of failure or can be a bottleneck in times of high network utilization.
- A network of peers can share its processor, consolidating computing resources for distributed computing tasks, rather than relying on a single computer, such as a supercomputer.
- Shared resources of peer computers can be directly accessed. Rather than sharing a file stored on a central server, a peer can share the file directly from its local storage.
- Peer-to-peer networking solves the following problems:
- Allows the processing resources of edge computers to be utilized for distributed computing tasks.
- Allows local resources to be shared directly, without the need for intermediate servers.
- Allows efficient multipoint communication without having to rely on IP multicast infrastructure.

Peer-to-Peer Networking Scenarios

Peer-to-peer networking enables or enhances the following scenarios:

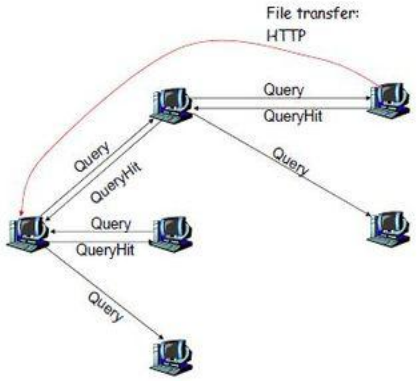
- Real-time communications (RTC)
- Collaboration
- Content distribution
- Distributed processing
- Improved Internet technologies



GNUTELLA: This is a large peer-to-peer network. It was the first decentralized peer-to-peer network of its kind, leading to other, later networks adopting the model. It celebrated a decade of existence on March 14, 2010 and has a user base in the millions for peer-to-peer file sharing. The gnutella network is a fully distributed alternative to such semi-centralized systems as FastTrack and the original Napster. The Gnutella network is a fully decentralized, peer-to-peer application layer network that facilitates file sharing; and is built around an open protocol developed to enable host discovery, distributed search, and file transfer. It consists of the collection of Internet connected hosts on which Gnutella protocol enabled applications are running.The Gnutella protocol makes possible all host-to-host communication through the use of messages.

GUID	Type	TTL	Hops	Payload Size
16 bytes	1 byte	1 byte	1 byte	4 bytes
23 bytes				

Messsage Format



The gnutella search and retrieval protocol

Peer-to-peer file sharing: Peer-to-peer file sharing is the distribution and sharing of digital documents andcomputer files using the technology of peer-to-peer (P2P) networking.P2P file sharing allows users to access media files such as books, music, movies, and games using a specialized P2P software program that searches for other connected computers on a P2P network and locates the desired content. The nodes (peers) of such networks are end-user computer systems that are interconnected via the Internet.Peer-to-peer file sharing technology has evolved through several design stages from the early networks like Napster, which popularized the technology, to the later models like the Bit Torrent protocol.Several factors contributed to the widespread adoption and facilitation of peer-to-peer file sharing. These included increasing Internet bandwidth, the widespread digitization of physical media, and the increasing capabilities of residential personal computers. Users were able to transfer either one or more files from one computer to another across the Internet through various file transfer systems and other file-sharing networks.

II. CONSISTENCY ALGORITHM:

In the distributed data sharing, the consistency of the data needs to be focused because there are two different networks are built on single. Maintaining consistency between frequently updated or even infrequently updated files and their replicas is a fundamental reliability requirement for a P2P system. P2P systems are characterized by dynamism, in which node joinand leave continuously and rapidly. Moreover, replica nodes are dynamically and continuously created and deleted. For consistency maintenance, we introduce an algorithm for hybrid network, which is known as Adaptive File Consistency Algorithm (AFCA).File consistency maintenance in P2P systems is a technique for maintaining consistency between files and their replicas. Most previous consistency maintenance methods depend on either message spreading or structure-based pushing. The fallowing is algorithm for maintaining consistency in distributed peer-to-peer networks.

//Algorithm for file consistency maintenance

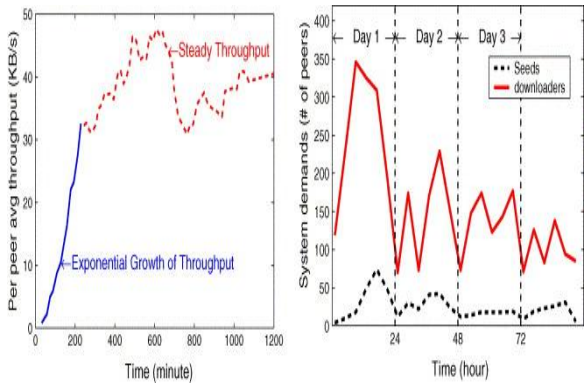
1. If a query is requested for a file then
2. include an update request within query of the file
3. else send the update request
4. if the aecceptance reply is given from the owner of the file
   //check the conditions
5. If the file is a valid one then
   $TTR = TTR_{old} + \alpha$. // α is a constant
6. If the file is a stale one then
7. $TTR = TTR_{old} / \beta$. // β is a constant. we need to update replica of a file.
8. if Time to refresh rate(TTR) is greater then maximum or less then minimum TTR then
9. $TTR = \max(TTR_{min}, \min(TTR_{max}, TTR))$
10. if time to refresh rate is less than or equal to query then $TTR_{poll} = T_{query}$
11. else
12. $TTR_{poll} = TTR$

when $TTR > T_{query}$, that is, the file is queried at a higher rate than change rate, then the file should be updated timely based on TTR. As a result, TTR_{poll} should be calculated based on the following formula [1]

$$TTR_{poll} = \begin{cases} T_{query} & TTR \le T_{query}, \\ TTR & TTR > T_{query}. \end{cases}$$

III. PERFORMANCE EVALUTION OF P2P NETWORKS:

In this paper we have studied and carried out performance evaluation of Peer-to-Peer (P2P) networking in context of satellite image processing. The application scenarios identified are sharing of satellite image data, P2P enabled now casting and forecasting and sharing of distributed computing resources using P2P. Performance evaluation of peer-to-peer search techniques has been based on simple performance metrics, such as message hop counts and total network traffic, mostly disregarding their inherent concurrent nature, where contention may arise. This paper is concerned with the effect of contention in complex P2P network search, focusing on techniques for multidimensional range search.



IV. CONCLUSION AND FUTURE WORK:

In this, we propose new system which combines both the structured peer-to-peer networkand the unstructured peer-to-peer networks to form a two-tier hierarchy to provide efficient and flexible distributed data sharing service.The proposed hybrid architecture enables the creation of awide range of MaIS that can be easily customized. The efficiency can be further increased whenconsidering link heterogeneity and topology awareness. Compared to unstructured peer-to-peer networks, the hybrid system has much lower data lookup

failure ratio.We have now finished our analysis of security in P2P networks. As a conclusion we can re-express the fact that only pure P2P stand a chance against attacks, any kind of shortcuts taken in the implementation can be turned around in order to attack the P2P application in a more dangerous manner.This application should not solely worry about authenticating users (binding public keys to physical identities) but also how much trust can be given to a public key. If such an application existed, it could be used by P2P applications as a very efficient protection against malicious attacks.

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