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Collective Compress Support for Confidential Improvement on P2P Communications

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ABSTRACT

The system is effectively used in out sourcing service (BPO), Network in LAN connection. Data consists of text, documents, image are transmitted through network, which increases the packet transmission that led to increases the traffic. The traffic is nothing but increasing the packet information that information should be analysis and displays it graphically. It is a network based project and it reduces the network traffic which transfer the speed.1)Peer-to-peer network describes a typical complex network upon which users connect together according to their sharing preference, indicated by the resources they shared. In this article, we apply analytic methods from complex networks theory to investigate the sharing preference of users as well as the correlations between different resource categories in a real peer-to-peer file sharing system, which is helpful for getting more insight into rapid development of peer-to-peer network applications. More recently, network coding based schemes have been proposed to improve the efficiency of transmission schemes. However, such schemes rely on prompt and accurate feedback to maximize its efficiency. Under the assumption that the receivers have already received subsets of the packets and the knowledge of the received and lost packets at each user is available at the source, an instantly decodable network coding scheme aiming at minimizing the mean completion delay was proposed. Network coding was also shown to be helpful for sending layered multimedia data to a set of receivers at different rate, as well as for spreading correlated data in dynamic networks. Peers do not try to collect trust information from all peers. Each peer develops its own local view of trust about the peers interacted in the past. In this way, good Peers form dynamic trust groups in their proximity and can isolate malicious peers. In SORT, peers are assumed to be strangers to each other at the beginning. A peer becomes an acquaintance of another peer after providing a service, e.g., uploading a file. If a peer has no acquaintance, it chooses to trust strangers. SORT defines three trust metrics. Reputation metric is calculated based on recommendations. It is important when deciding about strangers and new acquaintances. Reputation loses its importance as experience with an acquaintance increases. Service trust and recommendation trust are primary metrics to measure trustworthiness in the service and recommendation contexts, respectively. The service trust metric is used when selecting service providers. The recommendation trust metric is important when requesting recommendations.

Keywords : BPO, Peer-to-peer network, P2P mode

I. INTRODUCTION

PEER-TO-PEER (P2P) technology is heavily used for content distribution applications. The early model for content distribution is a centralized one, in which the service provider simply sets up a server and every user downloads files from it. In this type of network architecture (server-client), many user save to complete for limited resources in terms of bottleneck bandwidth or processing power of a single server. As a result, each user may receive very poor performance.

When a peer completes downloading some files from the network, it can become a server to service other peers in the network. It is obvious that as time goes on, the service capacity of the entire network will increase due to the increase in the number of servicing peers. With this increasing service capacity, theoretical studies have shown that the average down load time for each user in the network is much shorter than that of a centralized network architecture in other words, users of a P2P network should enjoy much faster downloads.

II. EXISTING SYSTEM

Content distribution is a centralized one, where the content is distributed from the centralized server to all clients requesting the document. Clients send request to the centralized server for downloading the file. Server accepts the request and sends the file as response to the request. In most client-server setups; the server is a dedicated computer whose entire purpose is to distribute files. The content helpers and content requester may form P2P links to share content files for offloading cellular traffic. Traditional scenarios assume static transmission links between the source and destination nodes. However, such an assumption is not always practical. However, in some scenarios, implementation of a centralized controller may be expensive or infeasible.

III. SYSTEM MODEL AND ARCHITECTURE

We consider a wireless cellular system where mobile devices, referred to as nodes, roam freely in and out of a geographically limited area. We assume that the nodes themselves can be used to store (cache) data and they can, upon request, transmit data to one another. A set of nodes that are within a specified distance from each other forms a storage community, or a local network. The local nodes can communicate with each other in P2P mode, without the help of the base station. Also, the base station can be used to transmit data to the nodes but there is no need to relay data from a node to another node via the base station.

Nodes arrive in the system according to a Poisson process with exponentially distributed inter-arrival times. The expected time for which a single node sojourns in the system is denoted by T, the expected node lifetime. The expected number of nodes in the system is denoted by N. By Little's law [13], the arrival rate of the nodes is NT. The expected inter-arrival time of two consecutive nodes is TN which is also the expected time between two consecutive node departures. These times are exponentially distributed. The flow into system equals the average flow out of the system, and the number of nodes fluctuates around N.

The main motivation for assuming an infinite storage capacity is that the storage problem of multiple files decouples. Accordingly, it is sufficient to consider the storage and distribution problem of a single file, with a specified request rate. We denote the request rate of one file by one local node by !. The inter-arrival time of two consecutive file requests follows the exponential distribution with mean. We normalize the size of the file to 1 (bit). Similarly, we say that the cost (in transmit energy) of transmitting one file from a local node to another local node is also 1 (joule). All the simplifying assumptions mentioned here allow for tractable, tangible results. There is one data file. At random time instants, local nodes request the file and download it. The file can either be retrieved from the base station or from the local nodes through P2P communications. It is, on average, R times as expensive to download a bit from the base station as compared to downloading a bit from another local node, with R > 1. The downloading node can download the file from the local nodes only if the file is cached. In this paper, we compare two caching methods:

1) Simple caching: If the requested file is already cached on another local node, the caching node transmits the file to the requesting node in P2P mode. If the file is not cached on any of the local nodes, the

base station transmits the file to the requesting node. Thence, the requesting node caches the file and, later on, transmits it to other users upon request. Only one local node at a time is caching the data file and, thus, there is no redundancy.2) Redundant caching: A subset of the local nodes is used to transmit parts of the file to the downloading node and the original file is reconstructed at the downloading node. 3)Two or more nodes cache the file or a fraction of the file. One of the caching nodes is redundant. The simplest way of redundant caching is allocating two exact replicas of the whole file on two different nodes. We call this method 2-replication.

IV. Methodology Diagram

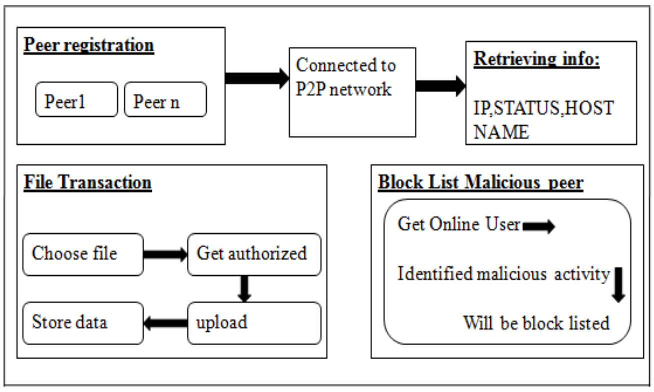
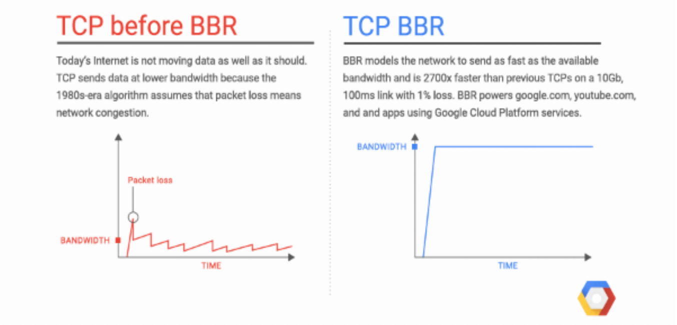


Figure (a). Architecture diagram for P2P

Peer-to-peer architecture (P2P architecture) is a commonly used computer networking architecture in which each workstation, or node, has the same capabilities and responsibilities. It is often compared and contrasted to the classic client/server architecture, in which some computers are dedicated to serving others.P2P may also be used to refer to a single software program designed so that each instance of the program may act as both client and server, with the same responsibilities and status.P2P networks have many applications, but the most common is for content distribution. This includes software publication and distribution, content delivery networks, streaming media and peer casting for multicasting streams, which facilitates on-demand content delivery. Other applications involve science, networking, search and communication networks. Even the U.S. Department of Defense has started researching applications for P2P networks for modern network warfare strategies.P2P architecture is often referred to as a peer-to-peer network.



Today's Internet is not moving data as well as it should. TCP sends data at lower bandwidth because the 1980s-era algorithm assumes that packet loss means network congestion.

BBR models the network to send as fast as the available bandwidth and is 2700x faster than previous TCPs on a 10Gb, 100ms link with 1% loss. BBR powers google.com, youtube.com, and and apps using Google Cloud Platform services.

Figure (a). Speed comparison diagram for P2P

To ensure that you can reap all of the benefits offered by gigabit speeds, we've put a lot of work into designing devices to help deliver that gigabit experience inside your home. If you experience interference, consider connecting to your network's 5 GHz signal to improve performance. Signals from neighboring devices can interfere with your Wi-Fi signal. Typically this only occurs on the 2.4 GHz signal because other types of devices, for example, microwaves and baby monitors also use the 2.4 GHz signal. Internet service performance can also be affected by packet loss. Packet loss occurs when one or more packets of data traveling across the network do not reach their intended destination hardware, poor device performance, or the presence of software bugs.

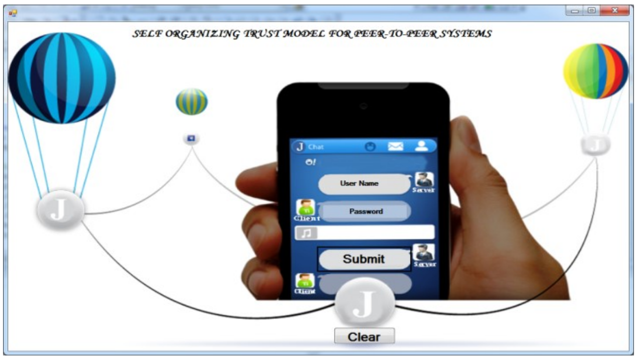
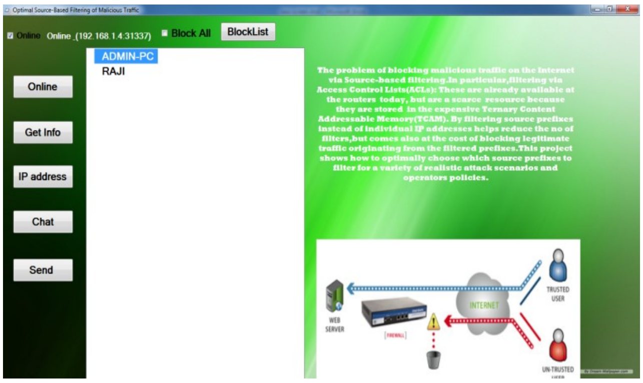


Figure (c). Login Page Diagram for P2P N/W

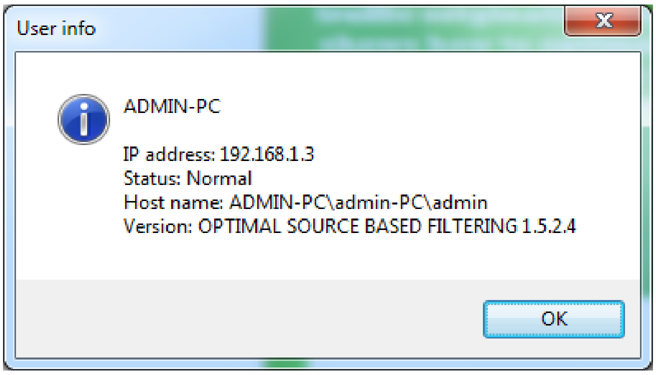
File is divided into k chunks of equal size and k simultaneous connections are used . Client downloads a file from k peers at a time. Each peer sends a files to the client. File is divided into many chunks and user downloads chunks sequentially one at time. The client randomly chooses the source peer at each time slot and download the chunks from each peer in the given time slots.



The problem of blocking malicious traffic on the Internet via Source-based filtering.In particular,filtering via Access Control Lists(ACLs): These are already available at the routers today, but are a scarce resource because they are stored in the expensive Ternary Content Addressable Memory(TCAM). By filtering source prefixes instead of individual IP addresses helps reduce the no of filters,but comes also at the cost of blocking legitimate traffic originating from the filtered prefixes.This project shows how to optimally choose which source prefixes to filter for a variety of realistic attack scenarios and operators policies.

Figure (d). Implementation software for P2P N/W

In this modules we can create number of peer system peer1, peer2,…peer k. Peer system which it acts as a Client and server also. At any time It perform as a clients and server system.



ADMIN-PC

IP address: 192.168.1.3
Status: Normal
Host name: ADMIN-PC\admin-PC\admin
Version: OPTIMAL SOURCE BASED FILTERING 1.5.2.4

Figure (e) Implementation for User Information

A user often has a user account and is identified to the system by a username (or user name). Other terms for username include login name, screen name (or screen name), nickname (or nick) and handle, which is derived from the identical Citizen's Band radio term. Some software products provide services to other systems.

V. ADVANTAGE OF PROPOSED SYSTEM

1) For better authentication while we transfer a file we can able to block single user as well as group of users also.

2) High Storage files such as video's and high resolution pictures also transfer instantly.

3) We can implement these file sharing in more than one user transmission also.

4) Transmission speed is high.

5) To improve the efficiency of the P2P communication.

VI. CONCLUSION

A trust model for P2P networks is presented, in which a peer can develop a trust network in its proximity. A peer can isolate malicious peers around itself as it develops trust relationships with good peers. Two context of trust, service and recommendation contexts, are defined to measure capabilities of peers in providing services and giving recommendations.

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VIII. REFERENCES

[1]. J. Paakko nen, C. Hollanti and O. Tirkkonen, "Device-to-device data storage for mobile cellular systems," in Proc. IEEE Globe communication Workshops, pp. 671-676, Dec. 2013.

[2]. E. Bastug, M. Bennis and M. Debbah,"Living on the edge: The role of proactive caching in 5g wireless networks," IEEE Communication. Mag., vol.52, no. 8, pp. 82-89, Aug. 2014.

[3]. L. Wang, H. Wu, and Z. Han, " Wireless distributed storage in socially enabled d2d communications," IEEE Access, vol. PP, no. 99, pp. 1-1 2016.

[4]. A. D. Wyner, "The wire-tap channel," Bell System Technical Journal, vol. 54, no. 8, pp. 1355-1387, Oct. 1975.

[5]. L. Wang, H. Wu, L. Liu, M. Song, and Y. Cheng, "Secrecy-oriented partner selection based on social trust in device-to-device communications," in Proc. IEEE ICC, London, UK, June 8-12, 2015.

[6]. X. Chen, B. Proulx, X. Gong, and J. Zhang, "Exploiting social ties for cooperative D2D communications: a mobile social networking case," IEEE/ACM Transactions on Networking, vol. 23, no. 5, pp. 1471-1484, Jun. 2014.

[7]. S. Bashar, Z. Ding, and C. Xiao, "On secrecy rate analysis of MIMO wiretap channels driven by finite-alphabet input," IEEE Transactions on Communications, vol. 60, no. 12, pp. 3816-3825, Dec. 2012.

[8]. L. Wang, S. Bashar, Y. Wei, and R. Li, "Secrecy enhancement analysis against unknown eaves dropper in spatial modulation, " IEEE Communications Letters, vol. 19, no. 8, pp. 1351-1354, Nov. 2015.

[9]. J. Yue, C. Ma, H. Yu, and W. Zhou, "Secrecy-based access control for device-to-device communication under-laying cellular networks," IEEE Communications Letters, vol. 17, no. 11, pp. 2068-2071, Nov. 2013.

[10]. R. K. Sharma and D. B. Rawat, "Advances on security threats and countermeasures for cognitive radio networks: a survey," IEEE Communications Surveys & Tutorials, vol. 17, no. 2, pp. 1023-1043, May 2015.

[11]. Z. Chu, K. Cumanan, Z. Ding, M. Johnston, and S. L. Goff, "Secrecy rate optimizations for a MIMO secrecy channel with a cooperative jammer," IEEE Transactions on Vehicular Technology, vol. 64, no. 5, pp. 1833-1847, May. 2015.

[12]. R. Zhang, L. Song, Z. Han, and B. Jiao, "Physical layer security for two-way un-trusted relaying with friendly jammers," IEEE Transactions on Vehicular Technology, vol. 61, no. 8, pp. 3693-3704, Oct. 2012.

[13]. A. Mukherjee, S. A. A. Fakoorian, J. Huang, and A. L. Swindlehurst, "Principles of physical layer security in multiuser wireless networks: a survey," IEEE Communications Surveys & Tutorials, vol. 16, no. 3, pp.1550-1573, Aug. 2014.

[14]. W. Trappe, "The challenges facing physical layer security," IEEE Communications Magazine, vol. 53, no. 6, pp. 16-20, Jun. 2015.

[15]. L. Wang, H. Tang, and M. C ierny, "Device-to-Device link policy based on social interaction information," IEEE Transactions on Vehicular Technology, vol. 64, no. 9, pp4180- 4186, Sep. 2015.

[16]. Y. Zhang, E. Pan, L. Song, W. Saad, Z. Dawy, and Z. Han, "Social network enhance device-to-device communication under laying cellular networks," in Proc. IEEE/CIC International Conference on Communications in China, Xi an, China, pp. 182-186, Aug. 2013.

[17]. J. Kim, A. Ikhlef, and R. Schober, "Combined relay selection and cooperative beam forming for physical layer security," Journal of Communications and Networks, vol. 14, no. 4, pp. 364-373, Aug. 2012.

[18]. L. Wang, H. Wu, W. Wang, and K. C. Chen,"Socially enabled wireless networks: resource allocation via bipartite graph matching," IEEE Communications Magazine, vol. 53, no. 10, pp. 128-135, Oct. 2015.

[19]. L. Wang and H. Wu, "Jamming partner selection for maximizing the worst D2D secrecy rate based on social trust," Transactions on Emerging Telecommunications Technologies, 2015, pp.1-11, DOI: 10.1002/ett.2992.

[20]. D. Bertsimas and J. Tsitsiklis, "Simulated Annealing," Statistical Science, vol. 8, no. 1, pp. 10-15, 1993.

[21]. V. Granville, M. Krivanek, and J.-P. Rasson, "Simulated annealing: a proof of convergence," IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 16, no. 6, pp. 652-656, Jun. 1994.