Video OSN using Distributing Algorithm

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Abstract- **Online Social Networks (OSNs) have become one of the most popular sites for sharing contents on the web recently. These online social networks are one of the most popular sites on the web. It provides an efficient way for sharing and finding contents like videos, photos etc on the net. But its development is highly affected by the client and server architecture used in the current online social network systems, which are really very expensive in case of the storage and also in terms of the servers bandwidth. It is also not very compatible with the increasing number of users and content shared on an online social network. The main aim of the work is to reduce the server load and manage the buffer in an efficient manner. The server load is reduced by implementing a distributed algorithm for the efficient P2P video sharing, a peak algorithm for splitting the video into chunks in an effective manner, for quick delivery of contents to the users, a chunk delivery and scheduling algorithm. The video sharing technique used can provide users a better video viewing experience and the system scalability over the present video sharing techniques and is also used for a better video viewing performance.**

***Keywords*: Video Sharing, Video Chunks, Buffer Management, Peer-to-Peer.**

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Introduction

Online Social Networks (OSNs) have become one of the most popular sites for sharing contents on the web recently. These online social networks are one of the most popular sites on the web. It provides an efficient way for sharing and finding contents like videos, photos etc on the net. But its development is highly affected by the client and server architecture used in the current online social network systems, which are really very expensive in case of the storage and also in terms of the servers bandwidth The server load is reduced by implementing a distributed algorithm for the efficient P2P video sharing, a peak algorithm for splitting the video into chunks in an effective manner, for quick delivery of contents to the users, a chunk delivery and scheduling algorithm. The video sharing technique used can provide users a better video viewing experience and the system scalability over the present video sharing techniques and is also used for a better video viewing performance. Social Networks are among one of the most popular websites on the web. It provides a very convenient and powerful mode for sharing contents like photos, videos and audio on the web. It is also very useful for establishing social connections, organizing and finding contents on the web. Online social networks provide a mode to establish a social connection with real world friends and let the user to post and share contents like videos, contents and files to their profile wall. But the current peer to peer client server architecture used in the online social networks are really very inefficient in terms of server bandwidth and is also very costly. It cannot handle the increasing numbers of users and the content shared on an online social network. To overcome these drawbacks, a friends Tube is proposed. Its main objective is to improve the overall video viewing performance for the users. The proposed system will improve the quality of user experience and user scalability.

Literature Survey

"Popularity Aware Limited Caching for Reliable On Demand P2P Video Streaming", T. Suresh

In this paper, In nowadays network group, the Peer-To-Peer (P2P) network is exploring as a good environment for resource sharing over the Internet. Compared with traditional file sharing workloads, continuous streaming

of multimedia content provokes a significant amount of today's internet traffic. Streaming media has various real-time constraints such as insufficient memory, high bandwidth utilization for large-scale media objects, and lack of cooperation between proxies and their clients. Under these circumstances, it is a challenging task to achieve efficient content delivery under the increased availability of continuous-media streaming. In this paper, PALC (Popularity Aware Limited caching) is proposed to achieve efficient, reliable and scalable P2P-VoD system. It is an attractive approach to minimize the network traffic incurred in video streaming through cooperative caching. In this approach, P2P network is constructed in the form of a two-tier architecture, where the upper tier is composed of proxy overlay with high connectivity super peers. It serves as a structured DHT node to maintenance the detached hash table for prominent information retrieval. On the contrary, in lower tier, less connectivity peers are loosely coupled to the corresponding super peers in the form of unstructured network. We proposed an efficient hybrid proxy caching system in order to reduce the network/ server load while improving the end user perceived video quality. It also proposes an efficient Popularity Aware Limited Caching (PALC) algorithm that cooperatively utilizes the memory space of the proxy servers and clients to achieve efficient and cost effective P2P video streaming. The effectiveness of the proposed approach is evaluated under various network and end system configurations. The experimental results demonstrate that the proposed approach incurs minimum Internet traffic and low cost of transmission as compared to the proxy-based caching approach with limited storage space.

"Auction-based P2P VoD Streaming: Incentives and Optimal Scheduling", Chuan Wu, Zongpeng Li, Xuanjia Qiu, Francis C. M. Lau

Real-world large-scale Peer-to-Peer (P2P) Video-on-Demand (VoD) streaming applications face more design challenges as compared to P2P live streaming, due to higher peer dynamics and less buffer overlap. The situation is further complicated when we consider the selfish nature of peers, who in general wish to download more and upload less, unless otherwise motivated. Taking a new perspective of distributed dynamic auctions, we design efficient P2P VoD streaming algorithms with simultaneous consideration of peer incentives and streaming optimality. In our solution, media block exchanges among peers are carried out through local auctions, in which budget-constrained peers bid for desired blocks from their neighbors, which in turn deliver blocks to the winning bidders and collect revenue. With strategic design of a discriminative second price auction with seller reservation, a supplying peer has full incentive to maximally contribute its bandwidth to increase its budget; requesting peers are also motivated to bid in such a way that optimal media block scheduling is achieved effectively in a fully decentralized fashion. Applying techniques from convex optimization and mechanism design, we prove (a) the incentive compatibility at the selling and buying peers, and (b) the optimality of the induced media block scheduling in terms of social welfare maximization. Large-scale empirical studies are conducted to investigate the behavior of the proposed auction mechanisms in dynamic P2P VoD systems based on real-world settings.

"Peer-to-Peer Collaborative Video-on-Demand Streaming over Mobile Content Centric Networking", Ryma Boussaha, Yacine Challal, Abdelmadjid Bouabdallah, Djelloul Ighit, Lyes Tairi

Nowadays, multimedia is omnipresent in the Internet and generates the major total traffic in fixed and mobile networks. While video streaming services become more crucial for mobile users, their traffic may often exceed the bandwidth capacity of cellular networks. Content Centric Networking (CCN) can be an attractive solution which adapts the network architecture to the current network usage pattern. In this paper, we propose a CCN peer-to-peer video-on-demand streaming protocol based on scalable video coding. We implement a collaborative strategy which improves the video segments availability in the network and reduces latency relying on CCN functionalities such as caching and routing by name. We also propose a control strategy allowing to scale to highly dynamic networks. Through the tests carried out to evaluate the performance of our solution, we show its effectiveness. Indeed, it reduces significantly the initial playback delay and enhances the streaming quality compared to a traditional service with no collaboration policy.

"Investigation of a Large-scale P2P VoD Overlay Network by Measurements", Bing Li, Maode Ma, Zhigang Jin Dongxue Zhao

The proliferation of large-scale Peer-to-Peer (P2P) Video on Demand (VoD) overlays has created the demands to characterize and to understand the emergent properties of P2P VoD applications. In this paper, we

investigate the P2P VoD overlay network, spanned by PPLive application, using active measurements. We have developed a piece of measurement software, named VoDCrawler, to implement the experiment. Different from other existing work, our study focuses on the topology and the churn of the overlay networks. From the study, we have revealed the major features of the P2P VoD overlay networks and have compared them with those in P2P file sharing and live streaming systems. The discoveries we have obtained could help further investigation of the operation of the P2P VoD systems and favor the commercial developments of the P2P VoD applications

Aim and Objectives

- To fulfills the security of the files in the real time.
- To reduces the server traffic and also the video startup delay.
- To develop a proposed system become a very efficient in terms of video sharing on the online social networks.

Motivation

- Now social network we are going to solve the cloud space problem because of video sharing among users. Once a video file is uploaded in a social network in the sense with in few minutes it will be shared by many users. Because of this replication of same video file occupies lot of space
- In our OSN we are going to provide a solution for this. Once a file uploaded in the sense that file will remain as origin file if it is shared by several users means all such files will be only clone files.

System Architecture

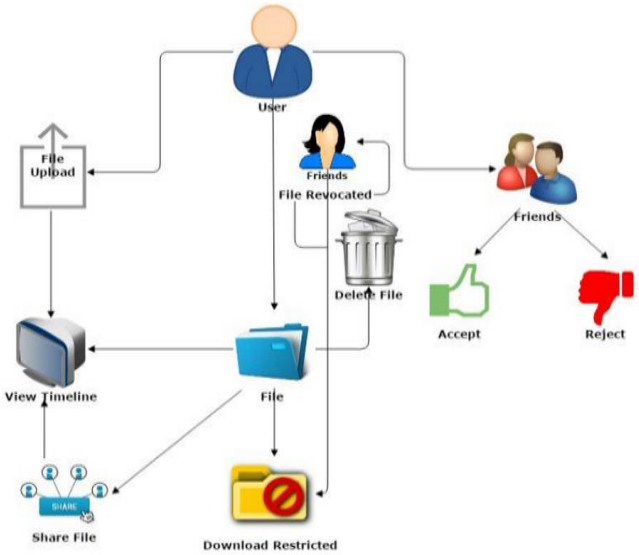

Figure 1: System Architecture Diagram

Application

- Social network
- Public sector
- Security area

Functional and Non-functional Requirements

Functional Requirements: may involve calculations, technical details, data manipulation and processing and other specific functionality that define what a system is supposed to accomplish. Behavioral requirements describe all the cases where the system uses the functional requirements; these are captured in use cases.

Non-functional Requirements: (NFRs) define system attributes such as security, reliability, performance, maintainability, scalability, and usability. They serve as constraints or restrictions on the design of the system across the different backlogs.

Functional Requirements

- Registration
- User log-in
- Creation of database: Users' mandatory information

Design Constraints

1. Database
2. Operating system
3. Web-Based non-functional requirements

Security

1. User identification
2. Log-in id
3. Modification

Performance Requirement

1. Response Time
2. Capacity
3. User Interface
4. Maintainability
5. Availability

System Requirements

- **Hardware Requirements**

1. RAM: 512 MB
2. Hard Disk: 80 GB

- **Software Requirements**

1. Operating System: Windows 7 or higher
2. Eclipse IDE 2018 / pycharm
3. Software Technology: Java / Python

Conclusion

The Conclusion of this project is that Better Client/server framework for video sharing, along with peer-to-peer (P2P) architecture, which is very promising and can also be used for video on demand services. Efficiently managed the buffer space by using a buffer management algorithm.

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