International Journal of Science Engineering and Advance Technology

To Achieve An Optimal Tradeoff Between P2p Overlay Maintenance And Video Sharing Efficiency In Osn's

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Abstract:
Video sharing has been a gradually more popular application in OSNs facilitating users to share their personal videos or interesting videos they found with their friends. However OSN's additional progress is strictly caught up by the inherent limits of the conventional client/server architecture of its video sharing system which is not only costly in terms of server storage and bandwidth but also not scalable with the high amount of users and video content in OSNs. The efforts have been dedicated to perk up the client/server architecture for video sharing with the peer-to-peer (P2P) architecture being the most promising. P2P-based video sharing has been used in on demand video streaming.The dimension reveals that mainly of the viewers of a user's videos are the user's close friends, most video views are driven by social relationships and the rest are driven by interests and viewers of the same video tend to live in the same location. Based on our observations we propose Social Tube a system that discover the social relationship interest resemblance and location to improve the presentation of video sharing in OSNs. Specifically an OSN has a social network (SN)-based P2P overlay construction algorithm that come together peers based on their social relationships and interests.

Keywords: Video-on-demand (VoD), On-line social networks, Peer-to-peer networks, Peer-to-peer assisted VoD.

Introduction:
The P2P construction gives high scalability for large user bases. Previous P2P VoD systems moreover randomly cluster peers for video inquiry or shape certain peers into a distributed hash table (DHT) for portion indexing. In order to decrease the video transmission and/or pre fetching delay some works cluster nodes with close physical proximity or similar interests. Though these mechanisms are suboptimal if not completely inapplicable in OSNs. Unlike VoD systems that provide system-wide video searching and sharing where a peer can access any other peer's content. OSNs do not provide video search functionality. In an OSN videos are visited and increase by the users' friends through the Friend-of-Friend (FOF) relationship. Specially Social Tube include four algorithms a social network (SN)-based P2P overlay construction algorithm, a SN-based chunk prefetching algorithm, chunk delivery and scheduling algorithm and a buffer management algorithm. Experimental results from a prototype on Planet Lab and an event-driven simulator show that Social Tube can get better the quality of user experience and system scalability over current P2P VoD techniques.

Related Work:
This effort is the first that revises the separate descriptions of OSN video sharing that differ from other content-based system-wide video sharing and put up a P2P-based video sharing system in an OSN by leveraging those characteristics for higher performance. The previous discussion of this article brings in the basic trace data analysis and design of Social Tube. This article presents more trace data systematic results. It also presents new Social Tube mechanisms including locality-aware video pre fetching mechanism two strategies to augment the chunk delivery abilities and buffer management algorithm. This article further presents more imitation results and the experimental results for the Social Tube prototype on the real world Planet Lab test bed. According to the com Score study users on average spent 9.9% of their total online time on Face book. Also illustrates the total time users spent on Face book over years according to the com Score information. We see that the total time users spent on Face book has been growing quickly. It was description that web users spend more time on Face book than Google sites. On average more than 8 billion minutes are spent on Face book every day.

Existing System:
With each peer contributing its bandwidth to serving others the P2P architecture provides high scalability for large user bases. Previous P2P VoD systems

either aimlessly cluster peers for video query or form certain peers into a distributed hash table (DHT) for mass indexing.

Disadvantages:

Videos can only be distributed through friends in OSNs.

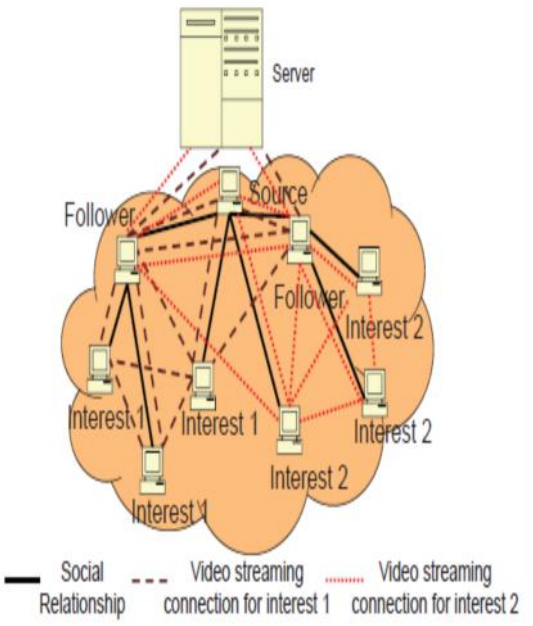
Proposed System:

We propose Social Tube a system that searches the social relationship, interest similarity and location to improve the performance of video sharing in OSNs. An OSN has a social network (SN) based P2P overlay construction algorithm that clusters peers based on their social relationships and interests. Social Tube also includes an SN-based chunk prefetching algorithm to reduce video playback startup delay.

Advantages:

This work is the first that learn the distinct characteristics of OSN video sharing that differ from other content-based system-wide video sharing and builds a P2P-based video sharing system in an OSN by leveraging those characteristics for higher performance.

System Architecture:



Video sharing in Face book differentiates itself from other video sharing websites e.g., YouTube in two aspects i.e. video sharing scope and video watching incentives. First other websites provide system-wide video sharing where a user can watch any video while in Face book videos are usually shared in a 2-hop small circle of friends. Second users in other video sharing websites are determined to watch videos by interests while in Face book the followers of a source node i.e., video owner are driven to watch almost all of the source's videos mainly by social relationship and non-followers watch a certain amount of videos mainly driven by interest. According to these differentiating features we design the P2P overlay structure.

Popularity Of Videos On Facebook:

It demonstrates that the number of videos uploaded to Face book augments sharply along with time. Since Face book launched its video service in 2007 the increasing trend of video uploading has certainly not slowed down making it one of most popular applications on Face book. We can see that about 70% of the videos are less than 100 seconds. Videos longer than 200 seconds account for less than 10% of all videos. It may be since users usually share short user-generated videos of their lives with their friends in OSNs.

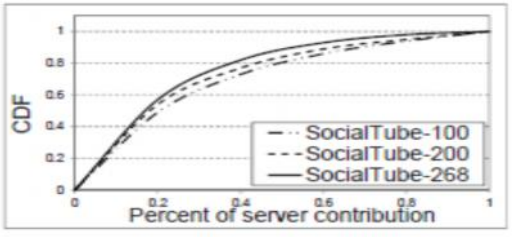
Effect Of Social Distance On Video Viewing Patterns:

A user may own more than one video. To further recognize the collision of social relationships on video viewing patterns we selected the users who have numerous videos from our dataset and examined the viewer group of each video owner. We classified the viewers of a video owner based on the proportion of the owner's videos they watched and considered the distribution of different viewer classes in a viewer group.

Social Network Based P2p Overlay Construction Algorithm:

Social Tube creates a per-node in YouTube P2P overlay for each source node. It consists of peers within 2 hops to the source that watch at least a certain percentage of the source's videos. Other peers can still obtain videos from the server. Such peers of a source node in the social network comprise a P2P cover for the source node. We aim to attain an optimal trade-off between P2P overlay preservation costs and video sharing competence. Some nodes within 2 hops may watch only a few videos in a source. Including these nodes and users beyond 2-hops into the overlay produce greater arrangement maintenance cost than video sharing benefits.

Experimental Results:



It demonstrates the CDF of the percent of server contribution of each node with different client population in Social Tube. It shows that in the system with 268 nodes, 80% of the nodes require no more than 40% of the traffic from the server and in the system with 200 and 100 nodes respectively. 80% of the nodes require no more than 50% and 56% of the traffic from the server respectively. As the system has more nodes and more nodes can contribute to videos after they watch the videos. Then the whole uploading capacity of the P2P transmission increases which decreases the burden on the server.

Enhancement:

Proposed basic interleaving scheme where each peer caches interleaving data from all segments of the video.

It uses a novel content distribution strategy to avoid the high new parent searching cost

Proposed a novel data distribution scheme called NCECD to provide interactive VoD services in a online social network.

NCECD scheme, videos are divided into smaller segments, further divided into blocks.

The NCECD scheme applies network coding technology to generate several encoded blocks by combining the encoding of all blocks in one segment.

These encoded blocks are distributed to peers on the system.

Conclusion:

Because of the privacy controls in OSNs the current peer-assisted Video-on-Demand (VoD) methods are suboptimal if not completely appropriate to the video sharing in OSNs. In this paper we move slowly video watching draw data in one of the largest online social network websites Face book and discovered the users' video viewing patterns. We establish that in a user's viewer group, 25% viewers watched all videos of the user determined by social relationship and the viewing pattern of the remaining nodes is driven by interest. Based on the observed social and interest relationship in video watching activities we propose Social Tube which provides competent P2P-assisted video sharing services. General simulation results show that Social Tube can provide a low video start-up delay and low server traffic demand. We also implemented a example in Planet Lab to appraise the performance of Social Tube. Video sharing is a more and more popular application in OSNs. However the client/server architecture positioned by current video sharing systems in OSNs costs a large amount of resources.

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