Asian Journal of Electrical Sciences (AJES)
Vol.3.No.1 2015 pp 33-37.
available at: www.goniv.com
Paper Received :08-03-2015
Paper Accepted:20-03-2015
Paper Reviewed by: 1. R. Venkatakrishnan 2. R. Marimuthu
Editor : Prof. P.Muthukumar

SCALABILITY AND THE BANDWIDTH EFFICIENCY OF VOD SYSTEMS

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ABSTRACT

Video on Demand (VoD)system are challenged by a growing number of users and increasing video streaming rate, so scalability and bandwidth efficiency is important consideration .video on demand focus on more mending service architecture and optimizing overlays but do not carefully consider the user behavior and benefit of prefetching strategies .we propose a network coding equivalent content distribution scheme to efficiently handle interactive video-on-demand (VoD) operations in peer-to-peer systems in networks. In this scheme videos are divided into segments that are then further divided into blocks are Frames .These blocks are encoded into independent blocks that are distributed to different peers, different frames for local storage. Mining associations in each video predicted based on the information collected through gossips.A collaborative prefetching scheme is designed to optimize resource distribution among neighboring peers. In most existing methods, a new client must search for parent peers containing specific segments however, equivalent content distribution scheme used to pick any parent without additional searches. Our proposed schema effectively reduce the load of the server especially under high load.PAB-MP scheme is significantly more scalable than the other popular approaches that exploit multicast and storage.

I INTRODUCTION

Multimedia is a media and content that uses a combination of different content forms. Multimedia includes combination of text, audio, still images, animation, video, and interactivily content forms. Multimedia is usually recorded and played, displayed or accessed by information content processing devices, such as computerized and electronic devices. Streaming media are multimedias that are constantly received by and normally presented to and end-user. The distinction is usually applied to media that are distributed over telecommunication networks, as most other delivery systems are either inherently streaming (e.g., radio, television) are inherently non-streaming (e.g., books, video cacassettes, audio CDs). VoD is an interactive multimedia services which delivers video content to the users.

II. RELATED WORK

In early proposed request batching to facilitate multicast for the VoD delievery in batching, multiple request for the same video arrive means than they will be grouped, and using a multicast stream. Videos are fragmented into segments and each of these segments is proactively broadcast in a dedicated channel over regular intervals. The main disadvantages of batching approcaches is is start-up delay. That is, users have to wait until next multicast cycle of the first segment to start the video playback if they miss a cycle. Patching is another schemes to enable exploitation of multicast. Patching scheme does not contain start-up delays. In patching, a users who initially requests particular video is served by unicast streaming. Our proposed PAB-MP scheme differs from all the mentioned method as it combines the benefits of both content prepopulation and patching. Unicast Patching with prefix catching and multicast with cache schemes a selection of video prefixes is cached in a proxy server located close to the user, such that multicast can be used for the video delivery. Unlike, UPatch and MCache schemes our proposed PAB-MP scheme optimally exploits both storage and multicast. In this we optimally select the IVSs for the prepopulation, our proposed scheme outperforms the MCache scheme.

III.ARCHITECTURE DIAGRAM

Fig.1. Architecture diagram

In fig1.1 shows the architecture diagram there will be a one server and the set of clients are presented then these clients request the same video at a time means the scheduler function of the server will be schedule when the video will be transmitted to the clients. Then the streaming service of the server will be stream the video into the number of segments and the video library contain a set of videos to be send to the clients. In each client contain the receiver, buffer, display and server. The receiver will receive requested video from the server. The buffer will store the temporary actions performed by the client and server. Display function will display the requested video. The server function of the client is used to act as a server for the late peer or another client.

IV.TECHNIQUES AND METHODOLOGY

VoD Server:

VoD server adopts combination of batching and patching. Such a design is flexible for asynchronous clients. The server send a video to clients to host. It shows waiting for peer until client give request.

Batching plus patching:

The fig.2. explain the VoD server uses batching to server asynchronous peers. The server allocates a certain amount of bandwidth for each batching session. The early joining peers directly become the children of the server. The allocated bandwidth is fully occupied after that the late peer are redirected by the server. The server sends a list of randomly selected peers to each joining peer. If any late peer missing the initial part of the video then it picks up a few peer from the random list. Then patching sources are immediately starts to download the missing part of the video.

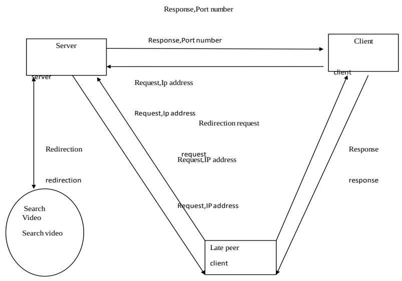


Fig.2. Batching plus Patching

Patching:

In patching technique Peers are clustered according to their arrival times. Later peers can retrieve the missing parts from the server or other peers. VoD divides the peers into generations according to the requests. Peers in VoD always cache the most recent content of video. Peers can retrieve the missing parts from the server or other peers. Instead of deploying a patch server as failures and dynamics are handled locally in VoD, so that the server stress is further reduced.

Hybrid catching:

In fig.3 shows the hybrid catching strategy and it will support asynchronous accesses to the video content. The early peers in a batching session obtain the video content and become the substitute video sources. Late peers can access missing content using patching from early one. VoD provides abundant backup stream sources for patching by adopting the hybrid caching strategy,where all the peers keep both the initial five minutes and the latest five minutes of the video played.Any late peer can instantly find patching sources and make up the missing part immediately after join the, no matter if it starts from the beginning or any other offset of the video. Because the patching sources are selected randomly ,load balance is kept among the peers.

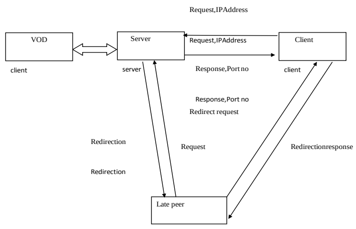


Fig.3. Hybrid caching

Gossip:

In the gossip technique, peers are generate state message including its latest state information. The state message format is IP, incremental playback record , time stamp , IP address , and maintain list of record.

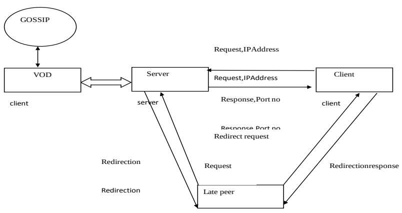


Fig.4. Gossip

V. ALGORITHM

Existing algorithm:

Assisted Batching With Multicast Patching): PAB-MP (Pre population

Step 1: Start the Process

Step 2: Client video Request connection establish to the server.

Step 3: Server response to the client request.

Step 4: Connection Established.

Step 5: *If* new Client → Server need to response

Step 6: *If* Server Response → Client (Utilize the Bandwidth of other nodes or clients)

Step 7: Server →creates the new channel (buffer) for another requests.

Step 8: Occur more number of clients → Transmission only for new channels.

Step 9: Stop the process.

Proposed algorithm:

Cost Aware catching Algorithm and equivalent Content distribution Scheme:

Step1: Start the process

Step2: If New Client request → Server Need to Response (Batching).

Step 3: Cost Aware→ No need to Create New Buffer from Server

Step 4: Cost Reduction Reduce new Buffer Channels

Step 5: Response from server to client →Peers → Frames

Step 6: If Client new request Is equal to first Frame

Step 7: Server accept the Client request ≠ Response

Step 8: Forward the request→ recently connected client.

Step 9: Client ACT as a Server→ Patching Works here.

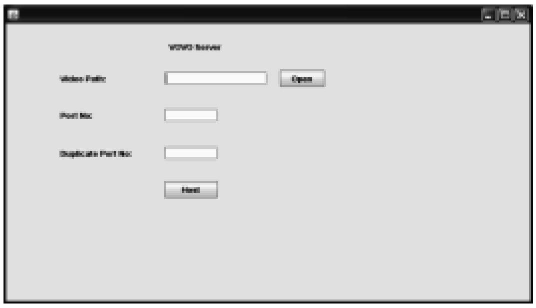
Step 10: Client ← Frames from Server's Buffer (ECDS).

Step 11: New client connect ←Frames come from last client(act as a server).

VI.IMPLEMENTATION

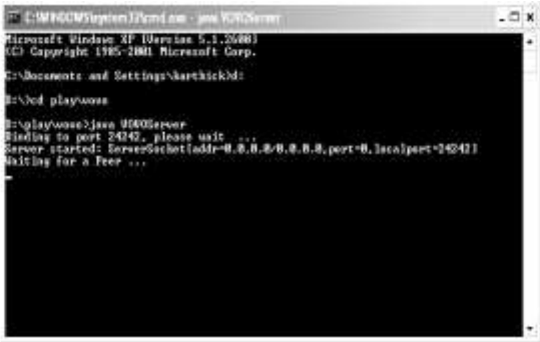
1.1.Run the Server

B.1.2. To Open a Video File by clicking Open button



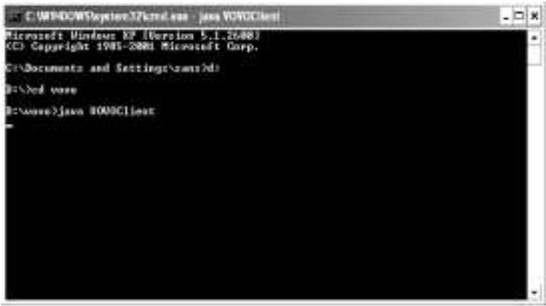
1. Enter a Port Number (five digit even number)
2. Enter Duplicate Port Number (four digit even number)
3. Click Host button to Start Server.

Now the Server Started

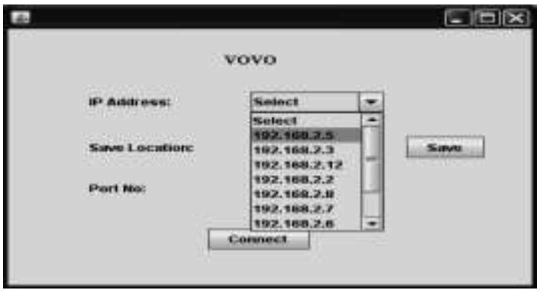


B.2.VOVO PEER

B.2.1.Run the VOVOClient



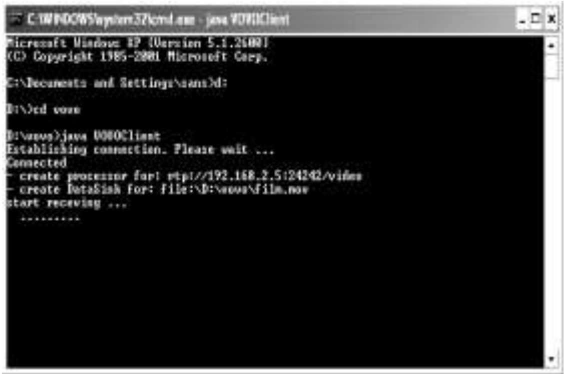
B.2.2.Select server IP Address



B.2.3.Click Save button to save the .mov file

1. Enter Server Port Number
2. Click Connect button for connecting to   the server.

B.2.4.If Server accepted the   connection then it starts receiving…

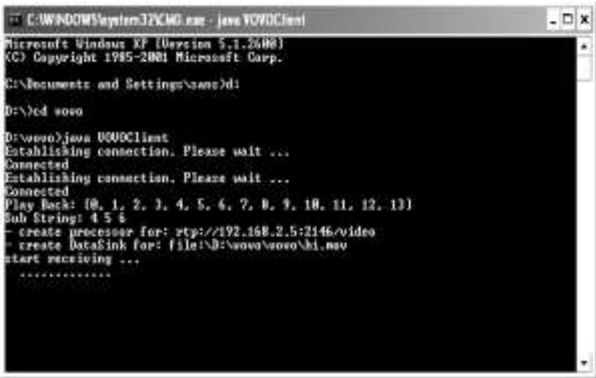


B.2.5.Now the received Video will start playing.

B.2.6.If any late peer occurs, then the server will redirect the late peer to existing peer

B.2.7.The existing peer will start transmitting to late peer.

B.2.7.The late peer start receiving from existing peer with Gossip.



B.2.8.If any of the existing peer disconnected then the server will get notified.

B.2.8.If any of the existing peer disconnected then the server will get notified.

VII.CONCLUSION

The scalability and the bandwidth efficiency of VoD systems have become important consideration due to rapid growth in number of subscribers, library sizes, and video streaming rates. In this paper, we proposed PAB-MP , a delivery scheme which improves the bandwidth efficiency and scalability of VoD system by optimally exploiting the multicast and storage capabilities.IVS in each of the end user's equipment, such that the bandwidth efficiency of the VoD system is improved. The proposed D-PLO algorithm which determines the optimal set IVSs. PAB-MP scheme significantly improves the bandwidth efficiency of the VoD systems in comparison to CM, Upatch, and CM&R schemes. The proposed GIP algorithms replicate and place the prepopulated IVSs across the user nodes, such that load is evenly distributed.

VIII. REFERENCE

1. k.Sripanidkulchai, A. Ganjam, B. Maggs, and H. Zhang, "The Feasibility of Supporting Large-Scale Live Streaming Applications with Dynamic Application End-Points," Proc. ACM SIGCOMM,2004.
2. Y. Huang, T.T.J. Fu, D.M. Chiu, J.C.S. Lui, and C. Huang,**"**Challenges, Design, and Analysis of a Large-Scale P2P VoD System,**"** Proc. ACM SIGCOMM, 2008.
3. A. Dan, D. Sitaram, and P. Shahabuddin, **"**Scheduling Policies for an On-Demand Video Server with Batching,**"** Proc. Second ACM Int'l Conf. Multimedia (Multimedia), 1994.
4. Y. Guo, K. Suh, J. Kurose, and D. Towsley, "P2Cast: Peer-to-Peer Patching Scheme for VoD Service," Proc. 12th Int'l Conf. World Wide Web (WWW).
5. cisco Visual Networking Index: Forecast and Methodology, 2011-2016(2012, "May 30) [online].Available: www.cisco.com
6. M.Huadong and G.S. Kang, :Multicast video-on-demand services," ACM SIGCOMM Comput. Commun. Rev., vol.32, no.1, pp. 31-43, Jan 2002.
7.F.Thouin and M.Coats,"video-on-demand networks:Design approaches and future challenges,"IEEE Netw.,vol.21,no.2,pp.42-48,mar.-apr.2007.
8. K.-L. Wu, P.S. Yu, and J.L. Wolf, "Segment-based proxy caching of multimedia streams," in proc. WWW '01,2001,pp. 36-44.
9. A. Dan, D.Sitaram, and P.Shahabuddin, "Scheduling policies for an on-demand video server with batching". In Proc. ACM Multimedia, 1994, pp.15-23.
10. W.K.S. Tang, E.W.M Wong, S. Chan, and K.T.Ko, "Optimal video placement scheme for batching VOD services," IEEE Trans. Broadcast., vol. 50. no. 1,pp. 16-25, Mar. 2004.