Reading Summary: Challenges, Design and Analysis of a Large-scale P2P-VoD System

Jakob Roberts - v00484900 - CSC 466

Mar 6, 2017

1 The Problem(s)

Please describe the problem(s) in your own words. Is the problem important at the time of paper publication, and how about now? Why?

The problem is that current video on demand streaming technology has a high server bandwidth requirement and switching to a service that uses a p2p architecture would alleviate a lot of the overhead and server load. The problem isn't as relevant anymore as the technology is currently in use by (for example) an application called Popcorn Time that uses a p2p network of torrents to stream movies and such.

2 Main Idea(s)

Please describe the main idea(s) in your own words. How is the idea different from the existing work at the time of paper publication? How does the idea impact the follow-on work till now?

At the time the paper was written, content distribution was beginning to happen via p2p, but it had not yet matured into the technology it is today. The concept of not just using p2p for file transfer, but also for file streaming would open up a lot of new possible services. In the paper, they are primarily focusing on the concept of video on demand, and not other possible applications to the p2p streaming technology.

3 Major Strengths

Please list at least three most important things in this paper. Why do you think they were important at the time of paper publication? How about now?

The metrics for piece selection were well considered as depending on the application, one would want to choose between the "sequential", "rarest first", or the "anchor-based" methods that provide different kinds of benefit. Their transmission strategy generally adheres to the p2p request strategies where the peer can make requests to other peers for certain pieces of the file at any given time. Measuring the users behaviour when it came to video streaming was important to decide on performance requirements of the service, as sometimes users would skip ahead by 30% or so, it is good that they decided to include this information in the paper. I was pleased to see that they spoke about buffering and considering buffering based on p2p availability.

4 Major Weaknesses

Please list at least three things you think may need further improvement in this paper. Has the improvement appeared in the follow-on work already?

Unfortunately there seems to be little I can critique on other than possibly doing more of a comparative approach to other services. Table 4 is difficult to read and would make more sense if the reference upload and download columns used the same ranges as to better see the difference in user consumption.

5 Possible Improvement

Do you have some ideas of your own on this problem? Can you do something better or differently? How can you show that?

I think a good idea would have been to do a side-by side comparison of the impact of using p2p VoD streaming versus the classic method of streaming from a single server. Are there any visible performance gains/losses?