Greenlee 560 Summary 10

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April 20, 2017

1 Introduction

2 Problems

What problems does this paper try to solve? Why are such problems important?

Mobile data is limited by high costs and data caps. In some developing countries, the cost is prohibitive, making up around 25% of users' total income. Additionally, mobile devices are beginning to dominate both developed and emerging markets, making this an ever-growing problem in both respects.

3 Assumptions

What are assumptions made by this paper? Are they verifiable? Are there logical holes in such assumptions?

The paper writers note that the data reduction component is easy, and the challenge is robustness and performance. Operating with geodiverse users, transient failures, and unpredictable middleboxes create more issues. The paper description of the solutions seems to verify this claim, but no real work was done to compare each task and verify.

4 Solutions

What are the major solutions of this paper? Do you think the solutions in this paper will work for the problem? Do you think the paper evaluates the solutions in a convincing manner? List two limitations of the solutions proposed in this paper, and outline your method to fix them.

Flywheel is an HTTP proxy service, which reduces the size of proxied web pages by 50% for the median user by compressing responses in-flight between the origin servers and client browsers. The paper evaluates cases where Flywheel will and will not work thoroughly, and I believe the solution will work, both based on my initial reactions, and based on the widespread user data that Google has collected using the technology on mobile devices.

4.1 Limitations

Although large web page load times are often reduced because of Flywheel's compression, there is a latency cost to proxying web content through third parties, which is not always outweighed by the compression. Decreasing the latency by expanding the network of proxy centers is just an added cost, so analysis should be done to figure out exactly where the best benefit is.

Corporate intranet and private websites are unavailable to Flywheel, and websites which actively fight DoS attacks sometimes interpret the volume of traffic from the Flywheel IP as such. Flywheel disables itself in these instances to prevent downtime. If it is not feasible to change the design of Flywheel, it would be productive to make explicit the differences between their service and DoS attacks, so that companies can make changes to detect which is which.