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Research Topic

Data Transfers

Research Problem

How can we improve the data transfer speed for general applications such as HTTP and SMTP?

Problem Statement

Given a network of computers, construct a data transfer system that would increase the transfer speed between the computers of applications without having to modify the applications themselves.

Problem Description

Many popular applications today utilize effective data transfer tools such as multi-sourcing and partial source exploitation. Today's most popular peer to peer tool is BitTorrent, which utilizes multi-sourcing with a constant lookup. Shark, a less popular tool, takes advantage of partial source exploitation, but with a linear look up. Dave Andersen's research aims to overcome the need for individual applications to integrate these tools and increase the data transfer speed and efficiency of general use applications such as HTTP and SMTP.

Computer Science Perspective

Using an underlying architecture for internet data transfer, it is possible to manage the data transfer of both new and legacy applications. With this they are able to outperform applications such as BitTorrent for general applications, without having to modify the application at all. Some of the remaining challenges include privacy vs. efficiency and application specificity.

Disciplines Actively Involved

Computer Science is the only actively involved discipline in this research process.

Actively Involved Discipline: A discipline from which there is a member involved in the proto-type construction or testing stages of the research process.

Description of Disciplines Involved

This research deals with algorithms, complexity theory and network theory, all of which are heavily rooted in Mathematical Sciences.

References

General Information about Dave Andersen

<http://www.cs.cmu.edu/~dga/>

DOT:Data-oriented Transfer

<http://www.cs.cmu.edu/~dga/dot/>

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