# Review on Cooperative Proxy Caching for Peer-to-Peer Traffic

[1]B.Sampath

**Abstract-** This paper is improving the performers of P2P traffic. Mainly this paper is Decrease the burden of P2P traffic on Internet Service Providers. Cooperate proxy is design to connect to cache peer and connect to all other peers. This paper can increase bit rate of cooperative caching. Cooperate proxy supporting multi connection with Cache and other Peers and it will enable Cache and peers to send/receive multiple file request and connection request.

## INTRODUCTION

In recent years, the growth of the Web traffic carried by protocols in the HTTP family has encouraged development of caching. Research in this field resulted in caching policies well suited for the characteristics of Web traffic. However the relatively small size of Web objects and the decreasing cost of disk and memory make today's Web caches able to store most cacheable content and to rarely need perform cache replacement operations. The hit rates, and thus performance impact, of Web caches is limited to values below 40% by Web traffic patterns and by the limited cache ability of Web objects. One current trend observed for Web traffic, the increases popularity of dynamically created, non-cacheable content decreases the potential benefits of caching.

Cooperative caching the sharing and coordination of cache state among multiple communicating caches has been shown to improve the performance of file and virtual- memory systems in a high-speed, local-area network environment. Cooperative caching works in this environment because network transfer time is much smaller than the disk access time required servicing a miss.

Internet proxy caching has become a common place approach for improving the performance of Web browsers. Typically, the proxy sits in front of an entire company or organization. By caching requests for a group of users, a proxy can quickly return documents previously accessed bother clients. Ultimately, though, the hit rate of the proxy is a function of the size of the population it manages a size often dictated by political, organizational, or geographic considerations. An obvious question, then, is whether multiple proxies should cooperate with each other in order to increase total client population, improve hit ratios, and reduce document-access latency. Whether such cooperative proxy caching is a useful architecture for improving performance depends on a number of factors.

A set of cooperative caches can gain a speed advantage over Web servers if objects are available from multiple sites and there is a statistically effective method for predicting the faster sites for a given client. The presence of such a speed advantage does not guarantee cooperation will improve response times: proxy cooperation will only be viable if the speed advantage and hit ratio are large enough to offset the cooperation overhead. The goal of this paper is to assess the viability of cooperative proxy caching by developing analytical models of cache cooperation and evaluating the resulting equations using experimentally determined parameter values. The metric for evaluation is speedup in user response time. Equation parameters are the cooperation hit ratio, average cache-server response time ratio, and the over- head and efficiency of object discovery. Aside from generating numerical speedup estimates, the analytical equation provides insights into the relationship and trade-offs between these factors.

## 2. BACK GROUND AND RELATED WORK

### 2.1 Brief introduction to caching proxies

A caching proxy usually intercepts the TCP connection of a web request and split it into two separate TCP connection, one to the client and other to the sever. The logic behind this design is to always perform cache checking first before attempting to make connection to server. The latter connection will be established only if cache miss happens.

Although each of these research efforts included a performance evaluation of the protocols proposed and a discussion of algorithm scalability, only presents empirical evaluations of cooperation for small populations, and none present empirical or analytical evaluations of the effectiveness of their schemes for the large client populations found in a wide-area setting.

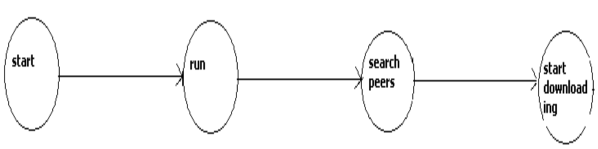
## 3 RELATED WORK

Web tracing and caching are highly active research areas. Recent studies of Web traffic include analyses of Web access traces from the perspective of browsers earlier tracing studies were limited in request rate, number of requests, and diversity of population. The most recent tracing studies have been larger and more diverse.

In addition to static analysis, some studies have also used trace-driven cache simulation to characterize the locality and sharing properties of very large traces and to study the effects of cookies, aborted connections, and persistent connections on the performance of proxy caching. P2P measurement studies have thus far been limited, usually focused on topological characteristics of P2P networks based on flow level analysis, or investigating properties such as bottleneck bandwidths, the possibility of caching, or the availability of content. In general, the analysis and modeling community tends to neglect P2P traffic and/or assume that it generally behaves like other traffic.

P2P traffic is a significant fraction of total workload. According to Sprint's IP Monitoring Project, for August 2002, for the majority of the monitored links in New York and San Jose, P2P traffic is approximately 20% of the total volume. Over the same time interval, the other TCP traffic category in Sprint's network increased. This category includes TCP traffic that cannot be classified using known port numbers, which may imply that P2P traffic is shifting from known to arbitrary ports. This increase in unclassified traffic is consistent with comments in, where the authors observe an increase in unclassified TCP and web traffic when certain port numbers (Fast track ports) are rate-limited, implying use of nonstandard port numbers by P2P applications.

### 4. Peer to peer traffic:




Primary applications of network coding include file distribution and multimedia streaming in peer-to-peer (P2P) overlay networks, data persistence in sensor networks, and information delivery in wireless networks. Incorporation of network coding into these applications brings many benefits such as throughput improvement, energy efficiency, and delay minimization.

Experience on caching Web objects research translate directly to P2P file-sharing traffic, in particular Fast Track traffic? The salient features of this traffic, mainly large file sizes, file size variability, and ability to split a single file download into tens of download sessions over extended durations, suggest that a cache for this traffic may behave differently than a pure 'Web' cache. Yet to date there has been only limited work on cache ability of this traffic.

There has also been extensive work on cooperative Web caching as a technique to reduce access latency and bandwidth consumption. Cooperative Web caching proposals include hierarchical schemes like Harvest and Squid, hash-based schemes, directory-based schemes and multicast-based schemes.

## 4 CONCLUSIONS:

This paper analyses the potential cooperate
Caches for P2P traffic. Decrease the load on peer to peer traffic. Increases the bit rate bit rate of cooperative caching. Cooperative caching the sharing and coordination of cache state among multiple communicating caches has been shown to improve the performance of file and virtual- memory systems in a high-speed,

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