Congestion Control for Web Real-Time Communication

ABSTRACT

Applications requiring real-time communication (RTC) between Internet peers are ever increasing. RTC requires not only congestion control but also minimization of queuing delays to provide interactivity. It is known that the well established transmission control protocol congestion control is not suitable for RTC due to its retransmissions and in-order delivery mechanisms, which induce significant latency.

EXISTING SYSTEM

Video constitutes the largest part of the Internet traffic according to recent measurement studies the delivery of real-time video content over TCP – which indeed entails much higher data rates – has never been addressed in the literature nor proven to be successful in real applications. Consequently, despite several standardization efforts – the most notable being DCCP, real-time video applications employ UDP sockets managed by ad-hoc congestion control algorithms implemented at the application layer. The obvious drawback of resorting to this practice is that different applications cannot interoperate which hinders mass adoption of RTC applications. A joint W3C and IETF initiative called WebRTC has been established to address this issue. In particular, the WebRTC initiative aims at standardizing an interoperable and efficient framework for real-time communication using Web browsers over the Real Time Protocol (RTP). Launched only a few years ago, today the Web RTC initiative allows more than two billion of users to communicate in real-time through Web browsers.1 Another related IETF working group, the *RTP Media Congestion Avoidance Techniques*2(RMCAT), has been established for standardizing interoperable congestion control algorithms for RTC.

DIS ADVANTAGES

- Applications cannot interoperate which hinders mass adoption of RTC applications.
- It increases queuing delay.

PROPOSED SYSTEM

In Proposed System, Congestion control algorithm for RTC, which is based on the main idea of estimating using a Kalman Filter the end-to-end one-way delay variation which is experienced by packets traveling from a sender to a destination. This estimate is compared with a dynamic threshold and drives the dynamics of a controller located at the receiver, which aims at maintaining queuing delays low, while a loss-based controller located at the sender acts when losses are detected. The proposed congestion control algorithm has been adopted by Google Chrome. Extensive experimental evaluations have shown that the algorithm contains queuing delays while providing intra and inter protocol fairness along with full link utilization.

ADVANTAGES

- Kalman filter to estimate the one-way delay variation at the application layer.
- Control law to dynamically adapt the threshold.

SYSTEM REQUIREMENTS

H/W System Configuration:-

Processor	-	Pentium –III
RAM	-	256 MB (min)
Hard Disk	-	20 GB
Key Board	-	Standard Windows Keyboard
Mouse	-	Two or Three Button Mouse
Monitor	-	SVGA

S/W System Configuration:-

Operating System	:	Windows95/98/2000/XP
Application Server	:	Tomcat5.0/6.X

Front End	:	HTML, Jsp
Scripts	:	JavaScript.
Server side Script	:	Java Server Pages.
Database	:	MySQL 5.0
Database Connectivity	:	JDBC