SCTP Sendbuffer Advertising

CS4089 Project

Midterm Report

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1 Introduction

Stream Control Transport Protocol (SCTP) is a reliable transport protocol designed to transport Public Switched Telephone Network (PSTN) signaling messages over IP networks, but is capable of broader applications.

2 Problem Statement

To study the effects of advertising sendbuffer occupancy in SCTP. This information allows networks to discern between application-limited, network-limited and flow-control limited flows, creating new avenues of network optimization.

3 Literature Survey

RFC 3286 [2] provides a high level introduction to the capabilities supported by SCTP, while RFC 4960 [3] describes the complete protocol. Agache and Raiciu [1] propose a scheme to advertise sendbuffer occupancy in TCP.

4 Work Done

Wrote a file transfer utility that uses SCTP as the transport protocol to measure the fluctuations in the sendbuffer size.

5 Future Work

To design a working prototype of sendbuffer advertising for SCTP in the Linux kernel and test it in a simulated network. Security implications of the prototype will also be studied.

References

[1] A. Agache and C. Raiciu. *TCP Sendbuffer Advertising*. Internet-Draft draft-agache-tcpm-sndbufadv-00.txt. IETF Secretariat, July 20, 2015.

[2] L. Ong and J. Yoakum. *An Introduction to the Stream Control Transmission Protocol (SCTP)*. RFC 3286. RFC Editor, May 2002, pp. 1–10. URL: `http://www.rfc-editor.org/rfc/rfc3286.txt`.

[3] R. Stewart. *Stream Control Transmission Protocol*. RFC 4960. RFC Editor, Sept. 2007, pp. 1–152. URL: `http://www.rfc-editor.org/rfc/rfc4960.txt`.