

# SCTP Sendbuffer Advertising

CS4089 Project  
Midterm Evaluation

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# Introduction

- ▶ Stream Control Transmission Protocol (SCTP):
  - ▶ is designed to transport Public Switched Telephone Network (PSTN) signaling messages over IP networks, but is capable of broader applications.
  - ▶ the next generation transport protocol which aims to remove several limitations of TCP.
- ▶ Sendbuffer Advertising:
  - ▶ each segment will carry the amount of backlogged data present in the sender's buffer.

# 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.

# Literature Survey

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

# Work Done

- ▶ Completed a part of the planned literature survey.
- ▶ Wrote a file transfer utility that uses SCTP as the transport protocol to measure the fluctuations in the sendbuffer size.

# 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 I

- [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>.