SCTP Sendbuffer Advertising

CS4089 Project

Midterm Evaluation

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Outline

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 send-buffer 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 send-buffer 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. 110. url: http://www.rfceditor.org/rfc/rfc3286.txt.

[3] R. Stewart. *Stream Control Transmission Protocol*. RFC 4960. RFCEditor, Sept. 2007, pp. 1152. url: http : //www.rfc-editor.org/rfc/rfc4960.txt.