CS3102 P2: Practical Report

Reliable Data Transfer Using UDP

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1 Introduction

This report cover the design and implementation of a connetion-oritented, reliable, unicast, transport protocol,built on top of UDP.
The protocol in question is called RDT - Reliable Data Transport

2 Design

This section will describe the design of the RDT protocol and the considerations that informed this design.

2.1 Packet Structure

RDT packets are constructed with the following structure:

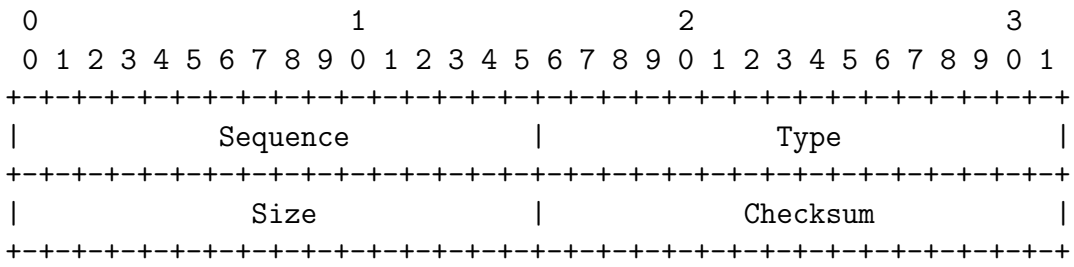

Figure 1: RDT Header

The `type` field contains one following values, denoting the type of the packet:

- 0 - SYN.
- 1 - SYN ACK
- 2 - DATA
- 3 - DATA ACK
- 4 - FIN
- 5 - FIN ACK

This approach was chosen over a flag-based approach, as it makes it easier to check packet type and there were only a small number of types to define given the simple nature of the protocol.

2.2 Finite State Machine

3 Testing

This section will detail how RDT was tested to validate correct operation.

3.1 Methodology

To test the ability of RDT to deliver packets in a reliable and ordered manner, two test programs were created. The latter was run on **pc** and the former on **pc**. Slurpe was place in the middle. A file was transmitted from A to B. Decoded with SHA.

4 Analysis

- Size of header vs size of packet
- Bandwidth utilization