COL334 Assignment 2: Reliable Data Transfer

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1 To Receive Data Reliably from the UDP Server

The goal of this part was to receive the data from the UDP server reliably. We implemented this reliability by ensuring that the request for a particular offset is recieved from the server, before requesting for another offset is received.

1.1 Requesting for Size of file

A request to receive the size of the data file is sent first to know the exact bytes of data to be received. If the packet got dropped, request is sent repeatedly until the it is received successfully. This is all done in the function "recv_size".

1.2 Initialising the list of requests

A sequence of requests is initialised based on offset and packet size.

1.3 Requesting and Receiving from server

After initialisation, we start sending requesting data requests to server and receiving them. We wait for the server to send the last requested offset before moving to another offset. This way it is ensured that we receive the data before moving ahead. The received packets are stored in a dictionary along with its offset.

1.4 Submitting the assembled file

The data in dictionary is concatenated and then passed to MD5 hash. The generated hash (after encoding to bytes) is sent to the server for submission.

1.5 Plotting the data

Graph is plotted between the time a packet request is sent, it is received versus offset of the packet (in case of local host).

In the graphs, the blue dots represents the time at which a particular offset request was sent, the orange dot represent the time at which the reply of the offset from server was received.

In the second graph, which is the zoomed in version of the first one, we can see most of the orange and blue dots are close to each other (which represent request and receive pair). We can

also see one anomaly where a blue dot and an orange dot has large space between, which represents that we sent multiple requests to receive that packet.

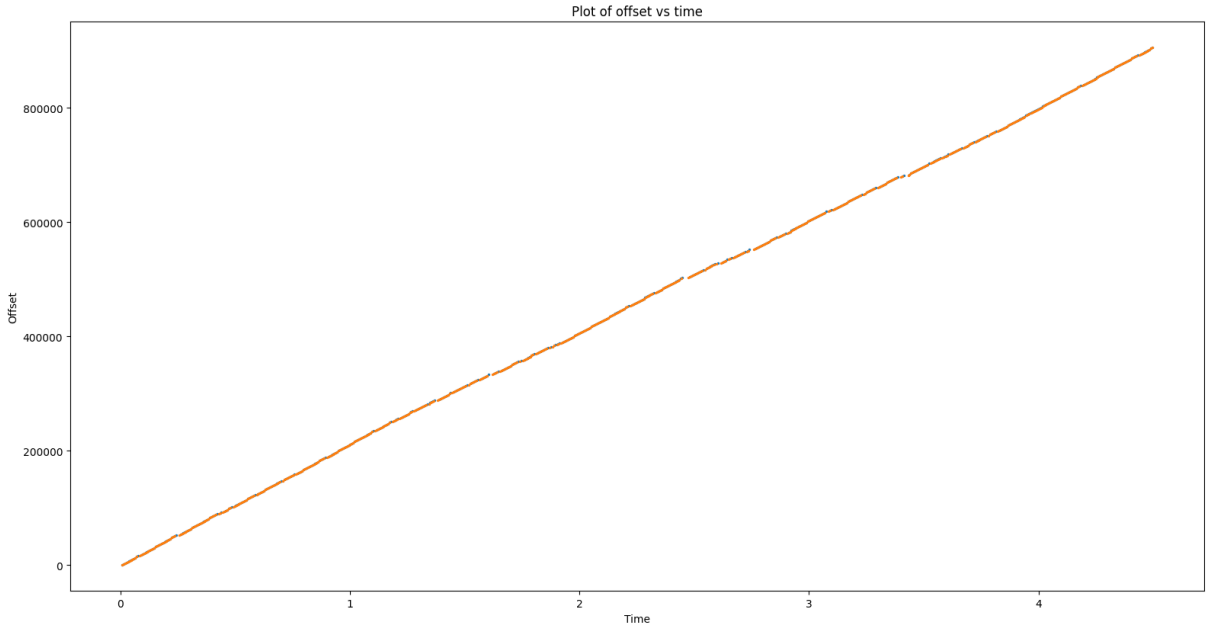

Figure 1: Offset vs request/receive time

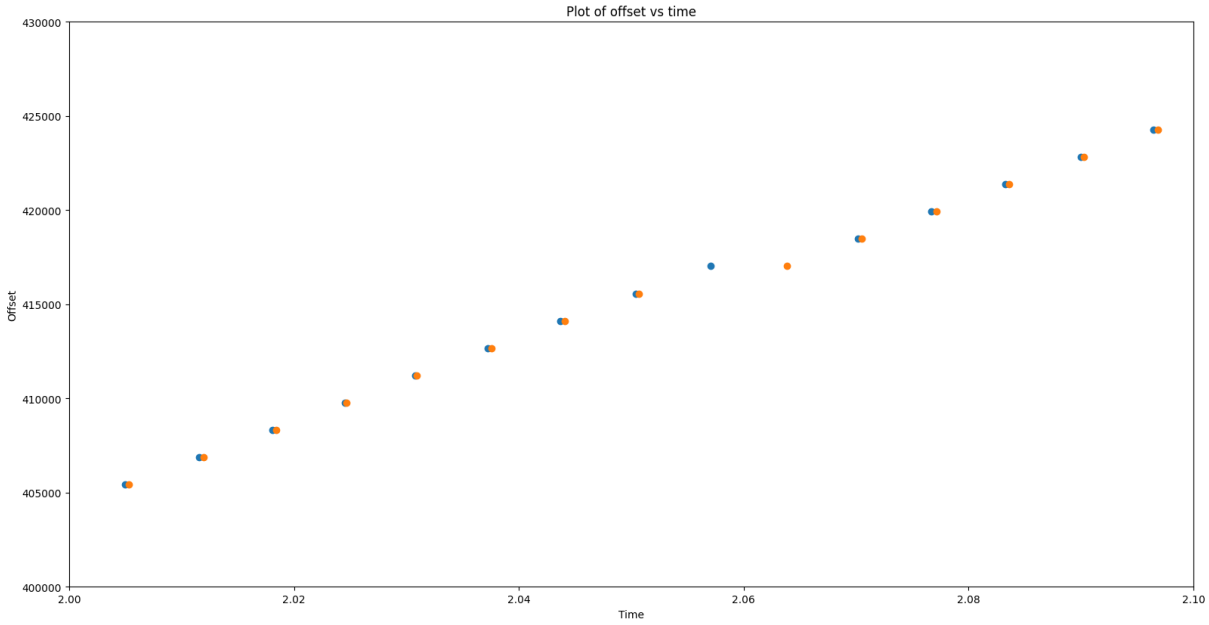

Figure 2: Zoomed in view of the first graph