CS335a - Δίκτυα Υπολογιστών

Project Phase B Report

Ονοματεπώνυμο	email address	AM
Κουτσούκος Ιωάννης	kutsukos@csd.uoc.gr	2909
Ταπανλής Αντώνης	csd3455@csd.uoc.gr	3455

Project Implementation

In order to run the project compile and execute *test/bandwidth_test.c*

To complete TCP's 3-way handshake, client and server both run *microtcp_socket* and *microtcp_bind* functions and then *microtcp_connect* and *microtcp_accept* functions respectively.

Then client uses *microtcp_send* function, to parse and send the data. This function returns the number of bytes that was send, so we can check if data sending was successful.

When client successfully finishes, data parsing and sending, executes *microtcp_shutdown* to inform the server that wants to terminate the connection.

microtcp_shutdown is function that is used by both sites and can understand whether client or server have called it.

Server, after the 3-way handshake, executes *microtcp_recv* and waits for data, to collect, save and inform the client about the data that were received.

When the server gets a message to terminate the connection, executes *microtcp_shutdown* and closes the socket that was created on 3-way handshake.

microtcp_recv and *microtcp_send* are responsible for the functions and mechanisms of ACKs, Fast Retransmissions, Error Checking, Congestion Control, and Flow Control. Error Checking is also done on *microtcp_connect* and *microtcp_accept*.

MicroTCP / TCP performance

MicroTCP performance

Data received: 68.937500 MB
Transfer time: 14.880251 seconds
Throughput achieved: 4.632818 MB / s

TCP performance

Data received: 68.937500 MB
Transfer time: 6.157318 seconds
Throughput achieved: 11.196028 MB / s

Performance

Performance = 4.632818 / 11.196028 = 0.4138