

Exercise 7

1 UDP - Efficiency (2 Points)

- a) A client sends a 128 Byte request to a server located 100km away over a 1-GB/s optical fiber (assume light speed 200.000km/s) and gets an immediate 128 Byte answer. What is the efficiency of the line during the request-reply call?
- b) Consider the same situation with a 1-MB/s line. What is the efficiency? What is the overall conclusion?

2 TCP - RTT (2 Points)

If the TCP RTT is currently 30 msec and the following acknowledgements come in after 26, 32, and 24 msec, respectively, what is the RTT estimate using the Jacobsen algorithm (use $\alpha = 0.9$)?

3 DNS (2 Points)

- a) Can a machine with a single DNS name have multiple IP addresses? How could this occur?
- b) Can a computer have two DNS names that fall in different top-level domains? If so, give a plausible example. If not, explain why not.