

Homework 5
Assigned: April 6, 2009
Due: April 13, 2009

- 1) In homework 4, you evaluate a greedy sender using UDP traffic. In this problem, we changed the tcl script to use TCP traffic. Please copy hw5 files using “`cp -r /v/filer4b/v27q001/cs378-spring/ns-allinone-2.29/ns-2.29/hw5 ns-2.29/hw5`”. Report throughput you observe when using `CWMin_ = 2, 3, 7, 15` while all the other parameters are set to be the same as those of a normal sender. Compare the throughput with those under UDP traffic from HW4. Is there any difference in the throughput? Why or why not? (50 points)

- 2) Consider the following 3-hop wireless route from A to D:
A --- B --- C ---- D
If snoop is implemented at node C only, which of the following losses due to errors may be recovered by snoop: error losses on link AB, link BC, and link CD? How the loss is recovered? (20 points)

- 3) Can the problems of TCP under wireless networks be solved by replacing TCP with UDP? Where could this be useful? Why is such replacement often undesirable? (15 points)

- 4) Under connections with low bandwidth, how to further optimize TCP to reduce protocol overhead? What problems may occur? How to overcome the problems? (15 points)