

Name: _____

This week's readings

- [1] Alan Demers, Srinivasan Keshav, and Scott Shenker. Analysis and simulation of a fair queuing algorithm. In *Proceedings of the ACM SIGCOMM Symposium on Communications Architectures and Protocols*, pages 1–12. Austin, TX, September 1989. URL <http://portal.acm.org/citation.cfm?id=75248>.
- [2] Sally Floyd and Van Jacobson. Random early detection gateways for congestion avoidance. *IEEE/ACM Transactions on Networking*, 1(4):397–413, August 1993. URL <http://www.aciri.org/floyd/papers/early.twocolumn.pdf>.
- [3] Ratul Mahajan, Steven M. Bellovin, Sally Floyd, John Ioannidis, Vern Paxson, and Scott Shenker. Controlling high-bandwidth aggregates in the network (extended version). <http://www.aciri.org/pushback/>, July 2001.

1. What is the goal of RED?

2. What is the goal of TCP Vegas?

3. Which of RED and Vegas “obeys” the end-to-end argument? Why?

4. If you were to run RED and Vegas at the same time, what might happen?

5. Why did the designers of RED care about the number of add and shift operations in an implementation?

6. For Wednesday, review pushback (paper #3). A review should consist of:
 - (a) A (at most two-paragraph) summary of the paper
 - (b) Three major strengths: what might get this paper accepted?
 - (c) Three major weaknesses: what might get this paper rejected?
 - (d) Contributions: why is this paper valuable? why might it be cited by others?
 - (e) Unresolved questions: missing methodology, missing evaluation, unclear presentation. We may review some of these questions in class.

A page is sufficient, two pages probably too long. Email it to me with a subject of “711 review 2” BEFORE NOON so that I have a chance to skim before lecture.

Vocabulary (some of this may be covered in class)

- arms race (in research)
- bandwidth delay product
- DoS (expand and define)
- ECN (expand and define)
- flooding
- flow
- incremental deployment
- per-flow state
- pushback
- RED (expand and define)
- TCP friendliness
- WFQ (expand and define)
- work-conserving