

# Transport Control Protocol

## Outline

- TCP objectives revisited

- TCP basics

- New algorithms for RTO calculation

# TCP Overview

- TCP is the most widely used Internet protocol
  - Web, Peer-to-peer, FTP, telnet, ...
- A two way, reliable, byte stream oriented end-to-end protocol
  - Includes flow and congestion control
- Closely tied to the Internet Protocol (IP)
- A focus of intense study for many years
  - Our goal is to understand the RENO version of TCP
    - RENO is most widely used TCP today
    - RFC 2001 (now expired)
    - RENO mainly specifies mechanisms for dealing with congestion

# TCP Features

- Connection-oriented
- Byte-stream
  - app writes bytes
  - TCP sends *segments*
  - app reads bytes
- Reliable data transfer
- Full duplex
- Flow control: keep sender from overrunning receiver
- Congestion control: keep sender from overrunning network

