Video

server

\[ r = x(t) \]
\[ r < x(t) \Rightarrow \text{buffer overflow} \]
\[ r > x(t) \Rightarrow \text{buffer starvation} \]
**UDP**

*good*
- Fast
- Just sends

*bad*:
- Loss - app deals w/ it
- Cause congestion
demux.
HTTP - TCP - in order, reliable
Dynamic Adaptive Streaming over HTTP (DASH)

Server

Hi-Res Low-Res
A B A' B'
C D C' D'
M

manifest
- URLs for video chunks

D c' B' A → M
Content Distribution Networks

- big server
  - single point of failure
  - doesn't scale

- distribution net
  - put servers on others' networks. (Akamai)
  - servers on own network
  - put locations near access networks