

# Access Delay Justification

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# RPR classes

- Class A
  - BW: guaranteed
  - Delay: bounded
  - Jitter: bounded
- Class B
  - BW: guaranteed
  - Delay: bounded
  - Jitter: bounded
- Class C
  - BW: guaranteed
  - Delay: un-bounded?
  - Jitter: un-bounded?

# Reality

- Class C service:
  - Over subscribed
  - Upstream advantage:
    - Defaults: `allowed_rate = unreserved_rate`
  - What is the higher protocol
    - applications?
    - TCP; window based flow control
    - Time out values?
  - Can it be blocked for ever?

# Access Delay

- Why?
  - Single transit buffer design
  - A trigger for congestion
  - Lower bound:
    - not to trigger too quickly causes low utilization
  - Upper bound:
    - Still have to deliver the MAC layer peer to peer transport with acceptable behavior for the higher layer protocols