

RMCAT

Problem Statement

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The Historical Internet

- TCP strongly dominant transport protocol
- Mostly client-to-server traffic
- Real-time applications in niches
 - VoIP - mostly fixed (low) bandwidth, non-adaptive, mostly through SBCs
 - Games
 - Managed networks
 - High capacity networks / low bandwidth traffic
- Peer-to-peer traffic is mostly filesharing (not realtime)

The RTCWEB Challenge

- User-to-user flows
- Multiple implementations
- Video, which means higher volume
- Interactive, which means delay is deadly
- On the Wild Internet, no one manager

Risk of congestion collapse (if RTCWEB fills the pipe itself)

Risk of "unreasonable" bandwidth allocation (if RTCWEB competes poorly with itself or with TCP)

Existing Mechanisms

- Media over TCP (presented as strawman)
 - Head of line blocking
 - Delivers obsolete data reliably
 - Encourages full queues at congestion point
- TFRC, which focuses on being "like TCP"
 - Does not focus on minimizing delay
 - Has not been widely adopted (in public)
- Proprietary mechanisms
 - By definition not interoperable
 - Not much documentation exists

What We Need

- **Fleshed-out Problem Statement**
 - What conditions we need to consider
 - What constitutes acceptable behavior
 - What we will not try to solve
- **Fully specified mechanisms**
 - What goes on the wire **MUST** be standard
 - Algorithms allow experimentation, but at least one must be publicly documented
- **Evaluation against success metrics**
 - Showing real improvement in realistic scenarios
 - Measurements on simulations and/or Real Life