RTP and the Datagram Congestion Control Protocol (DCCP)

Colin Perkins
draft-ietf-dccp-rtp-01.txt
What is DCCP?

• A new IETF transport protocol
  – A peer to TCP, UDP, and SCTP
  – RFCs 4340-4342 (proposed standard)

• Think UDP plus...
  – Connection oriented
  – Pluggable congestion control
    • TCP-like and TFRC now
    • Others, perhaps more media friendly, can be defined in future
  – Partial checksums (UDP-lite style)
  – Service codes

• Expected to be useful for real-time multimedia applications
  – Draft defines RTP framing over DCCP + associated signalling
Framing RTP over DCCP

- Connection-oriented datagram protocol
  - Open a single connection for (multiplexed) RTP and RTCP
    - 1 DCCP-Data packet = 1 RTP packet
    - 1 DCCP-Data packet = 1 Compound RTCP packet
  - Close connection once RTCP BYE sent

- RTP and RTCP must obey congestion control
  - Requires rate adaptive codecs
  - Significant complexity with translators to non-congestion controlled environments

- Otherwise a relatively straight-forward mapping
  - Some RTP profiles not useful (e.g. RTP profile for TFRC)
  - Some minor conflicts between RTP and DCCP features:
    - SRTP conflicts with partial reliability
    - Some RTCP XR packets overlap with DCCP Ack Vector options
Signalling RTP over DCCP

- Register new protocols for use on `m=` line
- Register `a= dccp-service-code:` attribute to signal service codes
  - Indicate type of media flowing
- Use `a=rtcp:` to signal multiplexed RTP and RTCP flows
Status

- For details see draft-ietf-dccp-rtp-01.txt

- Believe only minor details remain to be resolved
  - Expect -02 shortly after the meeting
  - Working group last call (hopefully) in the next few weeks

- Review from AVT community solicited to ensure makes sense from RTP viewpoint
  - Please comment to the dccp@ietf.org mailing list