MALICE
Metadata Attribute signaLing with ICE

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Bandwidth is Limited

- Give media stream better treatment in the network.
- Improve ICE path selection
- Enable application to react to changing network conditions

Why Existing Solutions Fall Short

- RSVP
  - Have a hard time crossing the Internet (IP router alert option)
  - NAT traversal difficult
  - Poor OS support, requires root
- DSCP
  - Poor OS support to set/read DSCP bits
  - DSCP bits often changed when crossing administrative domains
  - Values might already have specific meanings in some networks

Why Existing Solutions Fall Short (cont)

- ECN
  - Poor OS support to set/read bits in the header
  - TCP only. No "real" UDP or RTP support in the wild
  - Only congestion feedback

- RTCP feedback
  - Treats network as black box
  - Only reacts when packet is dropped or other problems occur
  - Session needs to be established

Solution Proposal

- Feedback between ICE and network
  - Extension to the ICE state machine and new STUN attributes
  - Routers modify STUN messages (Connectivity cheeks or keepalives) to provide feedback
- Drive this effort from an application/SDP perspective.

Technical Overview
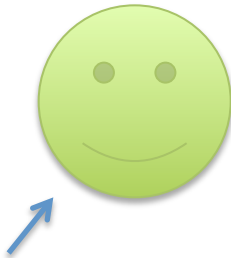
Questions from the Authors

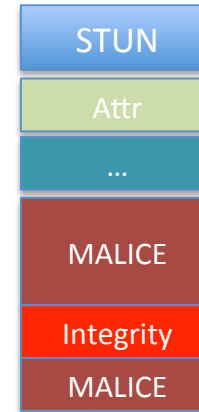- Focus on what?
  - Generic Transport for Metadata?
    (Separate drafts to describe actual attributes and how to handle them)
  - Extend ICE to allow for better network understanding?
- Acceptable STUN packet size for connectivity checks?