Happy Eyeballs for Transport Selection

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Motivation

• A TAPS system *decouples* transport services from the underlying transport protocols

• Happy Eyeballs *exploits* this decoupling
  – Enabling the selection of the “most appropriate” transport protocol from among available and feasible transport protocols for a given transport service
Background

• Builds on previous work

• Extends previous work
  – Selection of complete transports, not single protocols
  – Dynamic selection on the basis of pre-set policies and estimated network characteristics
The Happy Eyeballs Framework

1) Policy Management creates a list of candidate transport solutions

2) Transport Probing initiates connection attempts for transport solutions on the list

3) Transport Probing waits for winning connection
Design and Implementation

Considerations

• Candidate list generation
  – All available transport solutions
  – On the basis of pre-set policies
  – On the basis of both pre-set policies and estimated network characteristics
  – ...

• Caching
  – Should cache the outcome of previous connection attempts (cf. RFC 6555)
  – Optionally cache path properties, e.g., RTT, path MTU

• Concurrent connection attempts
  – Event-based
  – Threads
A Sample Implementation — NEAT

- Candidate list generation
  - Policy Manager
  - Policy Information Base
  - Characteristics Information Base

- Caching
  - Outcome of connection attempts

- Concurrency
  - Event-based
  - Libuv (http://libuv.org)
Content

• Problem statement (motivation)

• The Happy Eyeballs Framework

• Design and implementation considerations

• A Happy Eyeballs Scenario in NEAT
Q&A