

Happy Eyeballs for Transport Selection

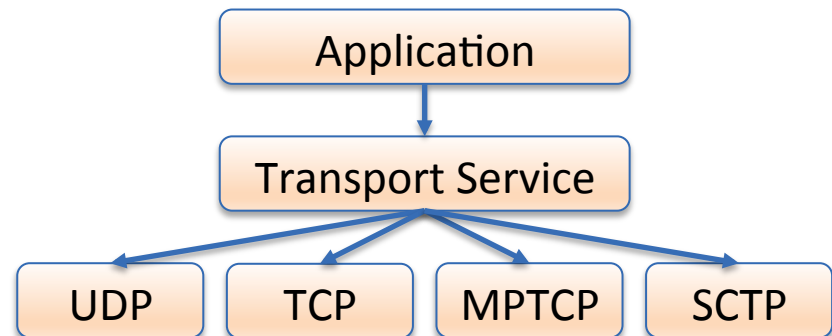
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Motivation

- 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



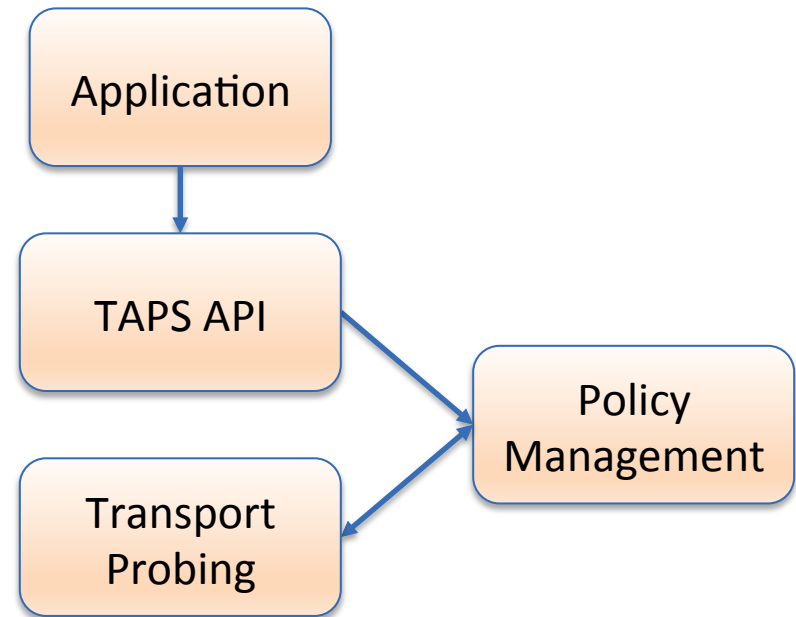
Background

- Builds on previous work
 - D. Wing and A. Yourtchenko, “Happy Eyeballs: Success with Dual-Stack Hosts”, RFC 6555, April 2012.
 - F. Baker, “Testing Eyeball Happiness”, RFC 6556, April 2012.
- 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



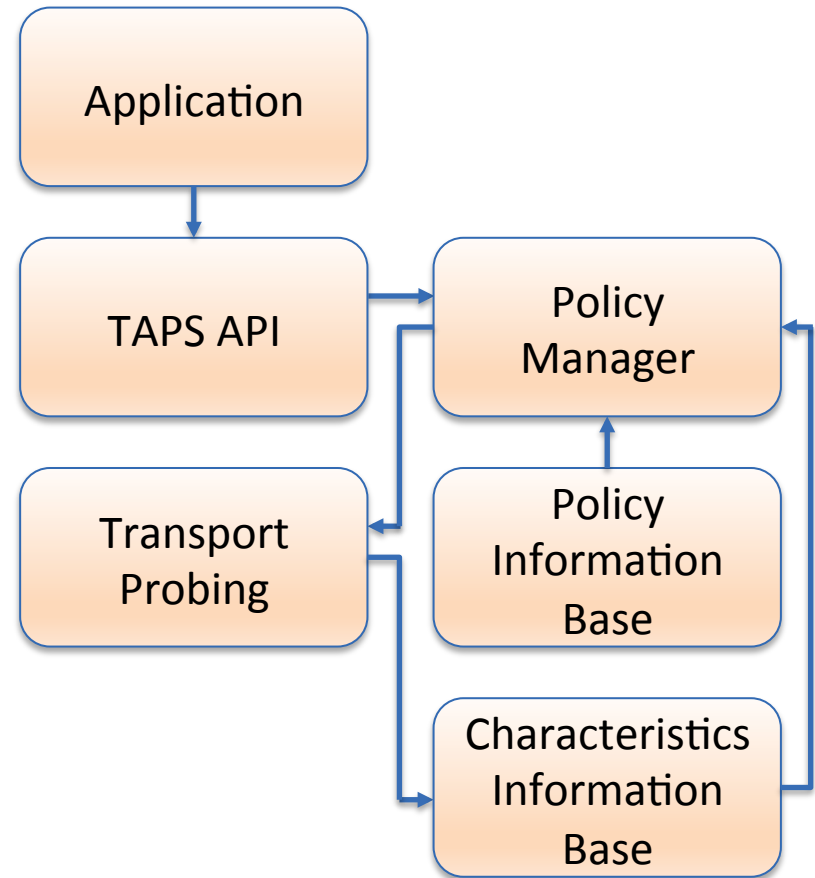
Design and Implementation Considerations

- 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