TCP Fast Open
draft-ietf-tcpm-fastopen-00.txt

H. K. Jerry Chu - hkchu@google.com
On behalf of Yuchung Cheng, Sivasankar
Radhakrishnan, Arvind Jain

Agenda

- Draft update – Applicability statement
- Implementation status
- Outstanding issues

Applicability Statement

- Type of Applications (latency sensitive, long RTT, transactional, requests fit in SYN packet…)

- Long lived connection (e.g., P-HTTP)

- UDP as an alternative

- Temporal sharing of TCB (RFC2140)

Current Status

- Draft accepted as a WG document
  - Goal: published as Experimental RFC ~Sep 2012
- Initial implementation on Linux completed and is going through internal code review
- Internal deployment planned
- Submission for upstream review soon

Implementation Details

- ~1500 line of code additions/changes (much reduced from original > 2000 lines)

- Use experimental option number 254 per draft-ietf-tcpm-experimental-options-00 with a 16-bit magic number

- Leave room for middleboxes that may add (e.g., TCP options) to SYN packets

Mobile Client IP Address not Sticky

- Due to cellular carriers' peculiar NAT settings that do not preserve client's external IP address across different TCP sessions
  - Violating RFC5382's Endpoint-Independent Mapping requirement (NAT should at least preserve the external IP address, if not the port#)
- Defeats any IP address based identification/ authentication schemes (including TFO cookies)
  - When will HIP be available?
- Is it safe to make TFO cookie optional?

Data After SYN

- Request size growing
  - Some no long fit in one packet
- Will it ever be feasible to support data-after-SYN?
  - Is data pkt w/o the ACK bit even a legit TCP pkt?