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?