MPTCP – Multipath TCP

WG Meeting
Orlando, IETF-86, March 2013

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• Note taker
• Jabber [IMPORTANT]
• Please include “-mptcp-” in your draft names
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Note Well

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Agenda

• WG and Implementation status update (10 mins)
• Potential implementation survey discussion (10 mins)
• Technical Presentations (40 mins)
  – Multipath TCP Algorithm [Anwar Walid, 14min]
  – Congestion Control of MPTCP:
  – Performance Issues and a Possible Solution [Ramin Khalili, 18min]
  – Multipath Time Synchronization [Tal Mizrahi, 5min]
  – Double MPTCP proxy [Sam Xiongchunshan, 3min]

Please ask for presentation slots early, so we get enough meeting time!
WG Item Status

• TCP Extensions for Multipath Operation with Multiple Addresses (draft-ietf-mptcp-multiaddressed-09)
  – RFC6824

• MPTCP Application Interface Considerations (draft-ietf-mptcp-api-07)
  – Status: AUTH48
Milestones

- Dec 2012: Consensus on what high-level changes are needed to the current MPTCP Experimental document in order to progress it on the standards track
- Apr 2013: Implementation advice (Informational) to IESG
- Aug 2013: Use-cases and operational experiences (Informational) to IESG
- Dec 2013: MPTCP-enabled middleboxes (Informational) to IESG
- Dec 2013: MPTCP standards track protocol to IESG
Implementation Status

• FreeBSD 10
• Linux v.3.5.7
Multipath TCP For FreeBSD

• Kernel patch for revision 238537 of FreeBSD-10

• Features
  • Compatible with Standard TCP
  • Multipath operations (establish, terminate, adding subflows to mptcp sessions)
  • MPTCP signalling (MP_CAPABLE, MP_ADD_ADDR, MP_JOIN and DSS are supported)

• Limitation
  • IPv4 only
  • CC is not supported yet

• See the following URL for more info!
  • http://caia.swin.edu.au/urp/newtcp/mptcp/tools.html
Linux implementation status

Linux Kernel MPTCP

Implementation Status

Christoph Paasch, Gregory Detal, Fabien Duchêne
IP Networking Lab (UCLouvain)

http://www.multipath-tcp.org
Survey (1)

- Get useful info about current implementations
  - Questions on deployment would make it too long? (Just ask for any brief general comments?)

- Help us with our charter
  - Document implementation advice
  - Advance protocol on standards track

- Mechanics
  - Create I-D of proposed survey
  - Allow anon replies (unannounced implementations?)
    - Via Chair(s) + ?
Survey (2)

- Support of MPTCP options
  - MP_CAPABLE; MP_JOIN; DSS (32 or 64 bits? Dss checksum?); ADD_ADDR; REMOVE_ADDR; MP_PRIO; MP_FAIL; MP_FASTCLOSE

- Coupled congestion control?
- Fallback to regular TCP?
- Security?
- IPv4 and v6?
- Implementation info
  - OS, plans, independent…
  - Max number of subflows supported?
  - On end hosts or mptcp-enabled middlebox

- Interop tests?
- Creation of subflows
  - via multiple IP addresses? Add addresses that appear after connection? Client or server?
- Experiences about Heuristics
  - Port usage; delayed subflow start; failure handling; sender buffer; receiver buffer