Multipath TCP for FreeBSD

WG Update

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Working

- Implementation

  – TX side subflow-to-socket buffer mapping

  – RX side merged reassembly queue with socket buffer

  – RX side deferred reassembly on read()

  – Correct SHA1 + IDSN calculation (draft amended to clarify byte ordering issues)

  – MP_JOIN + associated machinery (with statically configured IPs)

Working

- Interop

  – FreeBSD ↔ FreeBSD single & multi subflow

  – FreeBSD ↔ Linux (github sources) single & multi subflow

Work In Progress

- Implementation
  - Path manager
  - Modularised scheduler
  - Integration with modular congestion control
  - DS-level checksum support

- Testing
  - Performance: throughput, CPU overhead, lock contention

- Documentation
  - Architecture + test results technical report

Points of Discussion

- Extra header bit to signal full DS map or alternative checksumming method

    - Possible alternative method: per-packet checksumming by copying TCP hdr csum into new MPTCP option

- DS SND.NXT rename/clarification for >1MSS DS maps? (draft v12, pg60)