DPLPMTUD for SCTP on FreeBSD

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What Implementation is this?

- One codebase for FreeBSD kernel and user space SCTP (usrsctp)
- In most WebRTC implementations
- Supports
  - SCTP IPv4 / IPv6
  - SCTP/UDP (not yet tested)
  - SCTP/DTLS (not yet tested)
Where we started

- Initial DPLPMTUD implementation for usrsctp / FreeBSD by Irene Rüngeler
- Done for usrsctp 1.5 years ago
- Based on first version of draft
What did we do

- Merged with current version and got it working in FreeBSD kernel
- Updated to -09 draft version
  - Tracking updates to draft
- Fixed some bugs
Considerations for Implementors

- Semantics of MTU changes
  - in PMTUD it can only shrink
- Impact of DPLPMTUD probes on Congestion Control
  - Probes are rate limited, not congestion controlled
- Impact on RTT measurements
  - Possible bug, interactions with when to measure
Things still to do

- Fix some variable names to be fully draft compliant
- Test with IPv6
- Fix usrsctp on all platforms supported
- automated MTU tests required

- Get code at:
  - usrsctp: https://github.com/juliusf/usrsctp
  - freebsd: https://github.com/juliusf/freebsd/tree/jwf/sctpmtud