Datagram Packetization Layer Path MTU Discovery

draft-ietf-tsvwg-datagram-plpmtud-03

Gorry Fairhurst, **Tom Jones**,
Michael Tüxen, Irene Rüngeler

tom@erg.abdn.ac.uk

IETF 102 - Montreal

Changes since draft-ietf-tsvwg-datagram-plpmtud-01

- Update based on review comments
- Requirements list updated.
- Added more explicit discussion of a simpler black-hole detection mode.
- Added more discussion of implementation within an application.
- Added text on flapping paths.

Changes since
draft-ietf-tsvwg-datagram-plpmtud-01

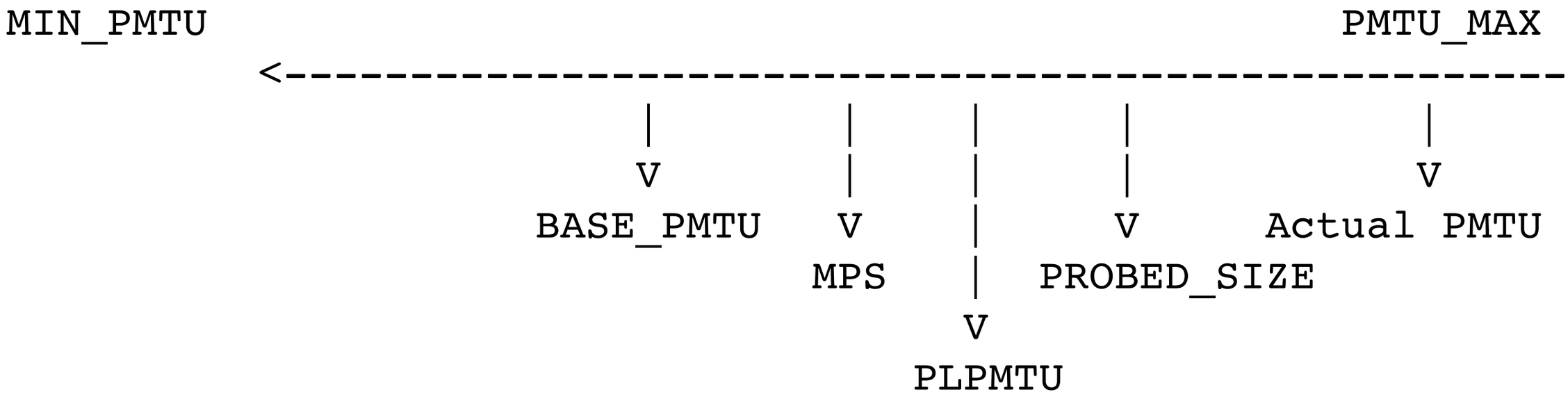
- Updated figures
- Added more discussion on blackhole detection
- Added figure describing just blackhole detection
- Added figure relating MPS sizes
- Updated full state machine artwork for clarity
- Changed all text to refer to /packet probes/validation/ (rather than /verification/).

Terminology Changes

- Effective PMTU -> PLPMTU

- ICMP Verification -> ICMP Validation

Relationships between probe and packet sizes



Review comments

- Igor Lubashev
  - Questions about PTB handling and state machine
- Magnus Westerlund
  - Questions about PTB handling robustness
- Timo Völker
  - UDP based implementation
  - Issues with terminology, variables, state machine

Handling PTB

- PTB in PROBE_DONE
    - Reduce (move to BASE, enter SEARCH for PTB size)
- PTB in PROBE_BASE
    - Move to error state (v4 only)
- PTB in PROBE_SEARCH
    - Three outcomes, depending on the PTB MTU
        - < BASE - ignore (may need ERROR for v4)
        - < PLPMTU - set PLPMTU to base, start search with PTB MTU
        - < PROBED_SIZE - send probe at PTB MTU (PLPMTU was OK)

QUIC

- Partial (non-ICMP) Implementation at IETF 102 Hackathon
- DPLPMTUD is possible with QUIC
- Load balancers will need more state for forward PTB
    - Probes need to carry both SRC ConnecitionID and DST ConnectionID

Next Steps

- Redesign spec around core components:

1. Growth

2. Reduction

    - Blackhole detection

    - PTB Handling

September 2018

Future Components

3. Error states

4. Resilience

November 2018