

Datagram Packetization Layer Path MTU Discovery

draft-ietf-tsvwg-datagram-plpmtud-05

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Last time

- Redesign spec around core components:
 1. Growth
 2. Reduction
 - Blackhole detection
 - PTB Handling
 3. Error states
 4. Resilience

Changes since draft-ietf-tsvwg-datagram-plpmtud-03

- Described phases and named these consistently.
- Corrected transition from confirmation directly to the search phase (Base has been checked).
- Redrawn state diagrams (e.g., Fig 4).
- Renamed BASE_MTU to BASE_PMTU (because it is a base for the PMTU).
- Clarified PROBE_ERROR state.
- Clarified suspending DPLPMTUD.

Changes since draft-ietf-tsvwg-datagram-plpmtud-03

- Verified normative text in requirements section.
- Clarified Terms
 - /packet probe/probe packet/
 - /validation/verification/
 - added term /Probe Confirmation/
 - clarified Black Hole detection
- Added security considerations

DPLPMTUD

Mechanisms

- Probing
- Blackhole detection
- PTB Handling
- Error

DPLPMTUD

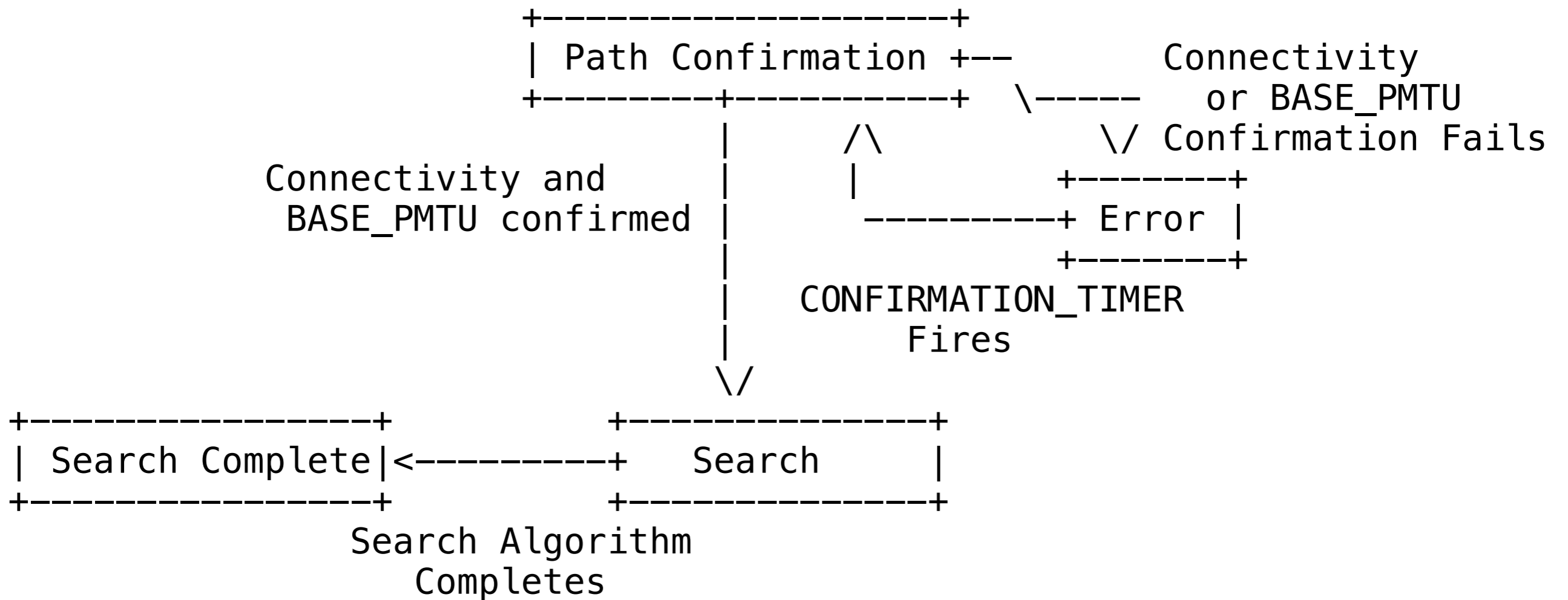
Mechanisms

- Probing
- Blackhole detection
- PTB Handling
- Error

Phases

- Path Confirmation
- Search
- Search Complete
- Error

DPLPMTUD Phases



Robustness to paths unable to sustain the BASE_PMTU

- Not all paths are nice!
- PROBE_ERROR state for when PLPMTU seems less than BASE_PMTU
 - DPLPMTUD continues to probe
 - Data could be endpoint fragmented
 - Also needed for transient changes in network path

Resilience to inconsistent path information

- A PL sender could be able to detect inconsistent results:
 - PTB Size less than Successful Probe Size
 - Variable Successful Probe Size
- Could be manifested as excessive fluctuation of MPS.
- Need to avoid unnecessary black-holing of packets.

Implementation

- New UDP Implementation in a tool based on latest drafts
 - Lab testing of the tool
 - Real world testing
- Feedback from Christian Huitema (QUIC)
 - We will propose text for quic-transport
- Others?

Next Steps

- We think the core is stable and usable
 - We need to gather experience
 - Please try this :-)...
- Need to analyse impact of loss, reordering, etc
- We also plan to work on the “enhance” parts”:
 - Resilience and robustness to corner cases
 - Could consider other signals also (e.g., see 6MAN)

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