Path MTU discovery

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Outline

- Introduction
  - Current status
- Implementations
  - John
- Future
  - New insights
  - Discussion about ICMP
  - Plans
- Tutorial Algorithm Review

Packetization Layer path MTU discovery

- MTU discovery in TCP or other transport protocol
- Start with a safe MTU
- Probe with progressively larger packets to test MTUs
  - Provisionally raise MTU if successful
  - Do not reduce TCP window on lost probe
  - (Optional) Process RFC1191 ICMP
- Verify provisional MTU
  - Require no losses to commit new MTU
  - Additional losses imply “inclusive probe”
  - Greatly improve robustness

Key Properties

- Robust
  - Tolerates ICMP delivery problems
  - Verification phase addresses spurious delivery
- Progressive interoperation with classical pMTUd
  - Start large and process all ICMP
  - Start small and ignore all ICMP
- Parallel to congestion control
  - End to end algorithm: use loss as the feedback to adjust window or packet size
  - Well understood limitations

Current status

- Pushed for an implementation
  - John talks next
  - Some good lessons learned
- Cleaned up some document nits.
  - Still more to go (sorry!)
  - Have not merged recent lessons learned

Implementation

- John Heffner