Careful Resume

draft-ietf-tsvwg-careful-resume-04

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Careful Resume

• Key mechanisms at start-up
  • Slow-start limits capacity to prevent overshoot, but impacts latency and other flows.
  • Hystart++ prevents overshooting the bottleneck and congestion, preserving shared capacity.
  • CR speeds-up large transfers when path capacity is large compared to the BDP.

• Main Features
  • Reuses past parameters for faster connection restart.
  • Sender sets requirements for capacity utilisation.
  • Ensures safe response when capacity/RTT is different.
Data-limited connections

- **Problem**: Some applications don't need to transmit data rapidly right from the start.
- **Solution**: Hold until data is ready.
Unvalidated/Validating Phase

- **Problem**: To keep track of packets sent in Unvalidated Phase
- The Validating Phase ensures Unvalidated Phase packets are ACK’ed
- Markers determine which packets to validate (Validating Phase)
Capacity Estimation in Safe Retreat

- **Problem**: What cwnd is best after congestion?
- **Solution**: Use pipe size estimation from received SACKs.
- I.D. suggests a method based on the scoreboard.
Tasks in progress...

• Feedback from Kazuho & Neal

• Experience of using CR with TCP
  • Tested CR with TCP in simulations (NS-3) and emulation (Linux/Cubic)
  • Safe Retreat selects the right resumption rate but...
  • Recovery in TCP is prolonged due to high packet loss.

• QUIC implementation/tests ongoing
  • Bare-bone implementation in Quiche.
  • Integration with BDP frame.

... we value your input!