Faster Restart for TCP Friendly Rate Control (TFRC)

draft-ietf-dccp-tfrc-faster-restart-03.txt

E. Kohler, S. Floyd, and A. Sathiaseelan

July 2007,

DCCP Working Group

Faster Restart for TFRC:

- After an idle period of at least at RTO:
  - The allowed sending rate is not reduced below *twice* the initial sending rate;
  - Quadruple sending rate each RTT up to old rate (decayed over time);
  - Ping once each four RTTs during an idle period.

Changes from draft-ietf-dccp-tfrc-faster-restart-02.txt:

- Separated TFRC mechanism from DCCP-specific language.
- Revised draft to refer to RFC3448bis instead of RFC3448:
  - Response to idle or data-limited periods is in RFC3448bis.
- CCID-3:
  - Deleted the Receive Rate Length
  - Specified that the receive rate is computed only over one RTT, rather than for longer, after an idle period.

Change to draft-ietf-dccp-tfrc-faster-restart-03.txt:

- In Section 3.2, change:

  Update X_active_recv and X_fast_max;

  Interpolate X_fast_max;

- To:

  Interpolate X_fast_max;

  Update X_active_recv and X_fast_max;

(as it was before)

Open issues:

- Should we keep the ping during idle periods?
- Simulations or experiments are needed to explore the possible costs of Faster Restart in times of high congestion.

Extra slides:

The Receive Rate Length Option:

- It was used for:
  - Feedback after an idle period;
    - Original problem corrected in RFC3448bis.
  - Allowing the sender to adjust the allowed sending rate for idle periods shorter than an RTT;
    - Not a good idea.
  - Correcting receive rate when the sending rate is less than one packet per RTT;
    - Original problem corrected in RFC3448bis.

Changes in RFC3448bis that affect Faster Restart:

- Keep X_recv for the last two RTTs;
- If the sender has been data-limited over the entire feedback period, don't use X_recv to reduce the allowed sending rate.
- The sender is considered data-limited if it has not used its allowed unused send credits (up to an RTT).