Fast-Slow Retransmission Timeout and Congestion Control Algorithm for CoAP

draft-ietf-core-fasor-02

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IETF core wg
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FASOR (Fast-Slow RTO)

- FASOR is an alternative Retransmission Timeout (RTO) and congestion control algorithm for CoAP
- Optional to implement in CoAP
- Replaces the default RTO and CC algos specified in RFC 7252
- Two ways to calculate RTO
  - **FastRTO** (normal RTO ~ RFC 6298 TCP RTT/RTO computation)
  - **SlowRTO** (measured as the time elapsed from the original transmission, including all retransmissions)
FASOR (Fast-Slow RTO)

• 3-state RTO logic each with its own back off series:
  - **FAST**: FastRTO, FastRTO*2¹, FastRTO*2², ...
  - **FAST_SLOW**: FastRTO, max(SlowRTO, FastRTO*2), FastRTO*2¹, FastRTO*2²,..
  - **SLOW**: SlowRTO, FastRTO, FastRTO*2¹, FastRTO*2², ...

![Diagram of FASOR RTO states](image-url)
I-D History

• -00 submitted in March, 2020 (after WG adoption)
  • Addressed feedback from Christer regarding the Retransmission Count option
• -01 submitted in Oct 2020
  • Clarified the use of the Retransmission Count Option value
  • Some editorial changes
  • Authors considered pretty close to be ready for WGLC, asked for more reviews, including TSV area
  • Got thorough review by Carles and TSVart early review by Yoshi
  • Document went dormant for a long period
• -02 submitted in March 2023
  • Addresses the points raised in the reviews
  • Will add more explanation and justification for the FASOR back off series logic (asked by Yoshi)
Next Steps

• More reviews and feedback would be appreciated
• Will submit -03 and then maybe ready for WGLC?