

Convergence of Congestion Control from Retained State  
**aka Careful Resume**

draft-ietf-tsvwg-careful-resume-07

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TSVWG

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# Major rewrite in drafts -05 and -06 (Dec 2023)

- -05 Rewrote description of Phases
  - Simplified the method
- -06 Added Notes on the Careful Resume Phases (Annexe A)
  - Example with No Loss
  - Example with No Loss, Rate-Limited
  - Example with Loss detected in the Reconnaissance
- -06 Added QLOG CDDL spec in Appendix
  - Thanks Ana, Robin, and Lucas

# Current Qlog definition draft in -07

```
RecoveryCarefulResumePhaseUpdated = {  
? old: CarefulResumePhase,  
new: CarefulResumePhase,  
state_data: CarefulResumeStateParameters,  
? restored_data: CarefulResumeRestoredParameters,  
? trigger:  
    ; for the Safe Retreat phase  
    "packet_loss" /  
    ; for the Unvalidated phase  
    "congestion_window_limited" /  
    ; for the Validating or Normal phases  
    "cr_mark_acknowledged" /  
    ; for the Normal phase, when CR not allowed  
    "rtt_not_validated" /  
    ; for the Safe Retreat phase  
    "ECN_CE" /  
    ; for the Normal phase 1 RTT after a congestion event  
    "exit_recovery"  
} .... See draft
```

Concise Data Definition Language (CDDL) [[RFC8610](#)]  
[[I-D.ietf-quic-qlog-quic-events](#)].

# Minor changes in draft in -06 to -07

- Finishing support for QLOG
- Updated to fix a corner case when in Entering Recovery
  - Previously: CWND was always set to FS
  - Currently: CWND is set to PS, transitioning to Normal if  $FS < PS$
- Answered Comments from AC, JD and Q
  - Updated Table and examples in Appendix A
  - Updated CWND management during transition to Unvalidated phase
  - Unable to answer required no. of samples for estimating min RTT

# Next Steps

- We're currently completing unit tests
- There are minor edits pending relating to the Qlog CDDL
- We'll next analyse performance with a "high BDP"
- We'd like feedback
  - We have work in a fork of Quiche (Joerg Deutschmann)
  - We know about PicoQUIC work (Joerg Deutschmann)
  - We are especially interested in other implementation experience
- We expect this to be ready for WGLC at the next meeting!