

Careful Resume

draft-ietf-tsvwg-careful-resume-04

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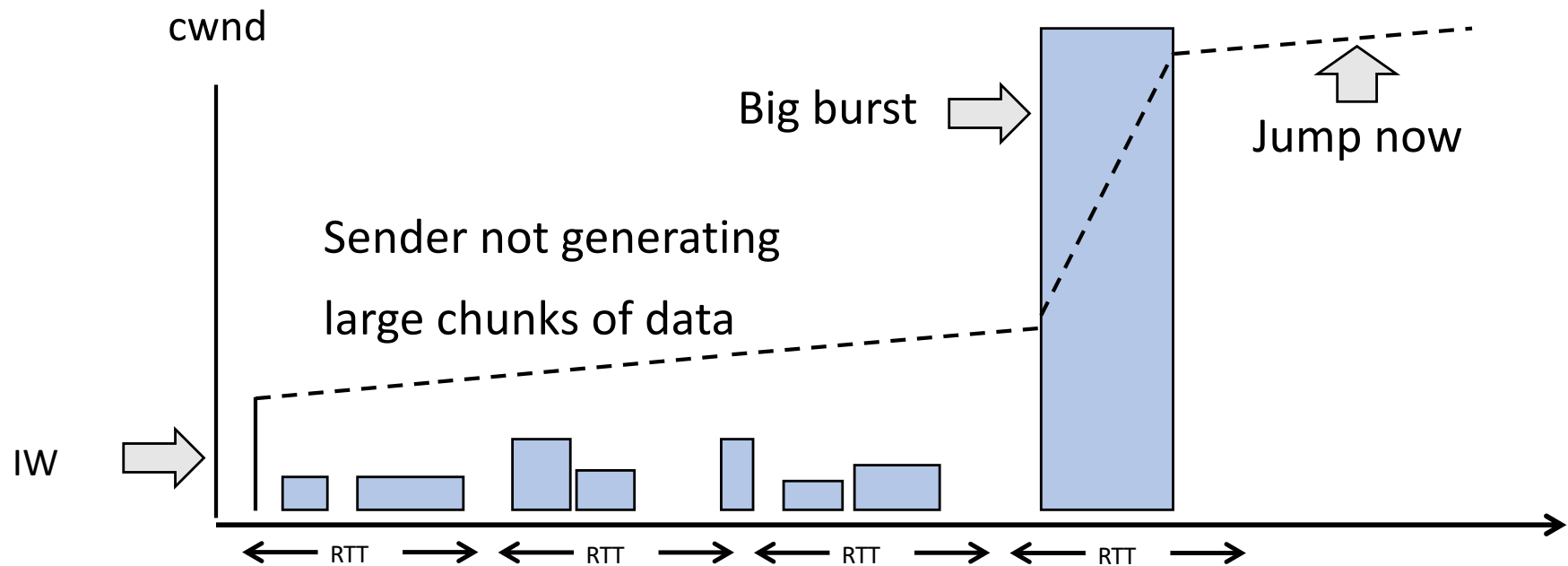
Careful Resume

- 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

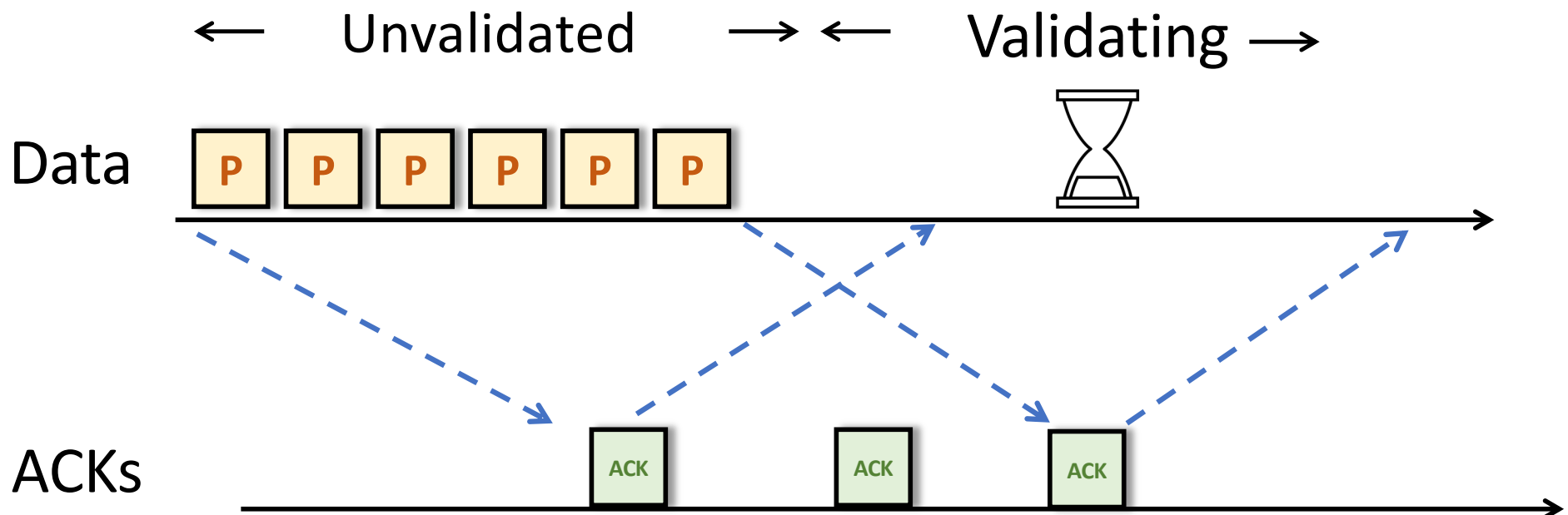
New in -04

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



Unvalidated/Validating Phase

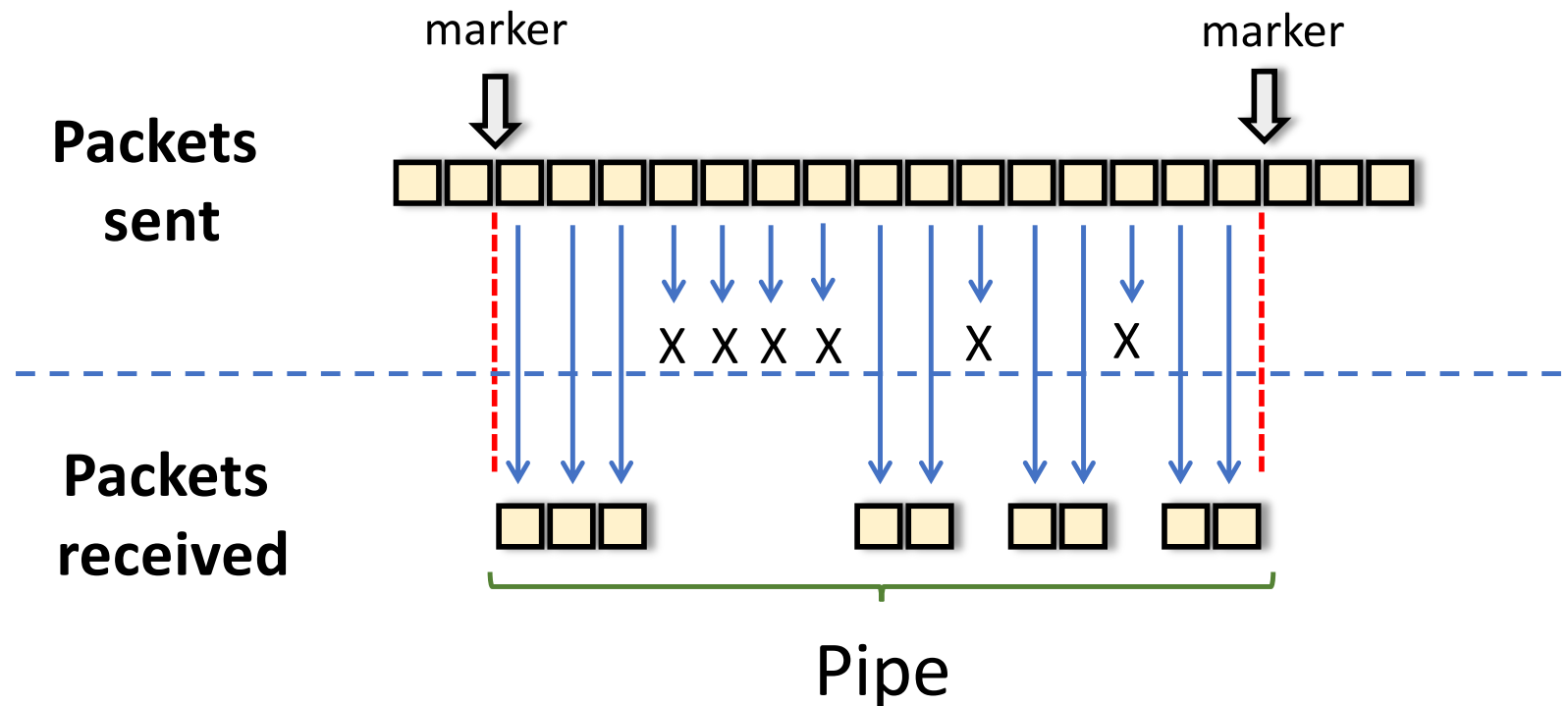
- **Problem:** To keep track of packets sent in Unvalidated Phase
- The Validating Phase ensures Unvalidated Phase packets are ACK'ed
- Markers determine which packets to validate (Validating Phase)



Capacity Estimation in Safe Retreat

New in -04

- **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!