

Avoiding Interactions of Quick-Start TCP and Flow Control

draft-scharf-tsvwg-quick-start-flow-control-01

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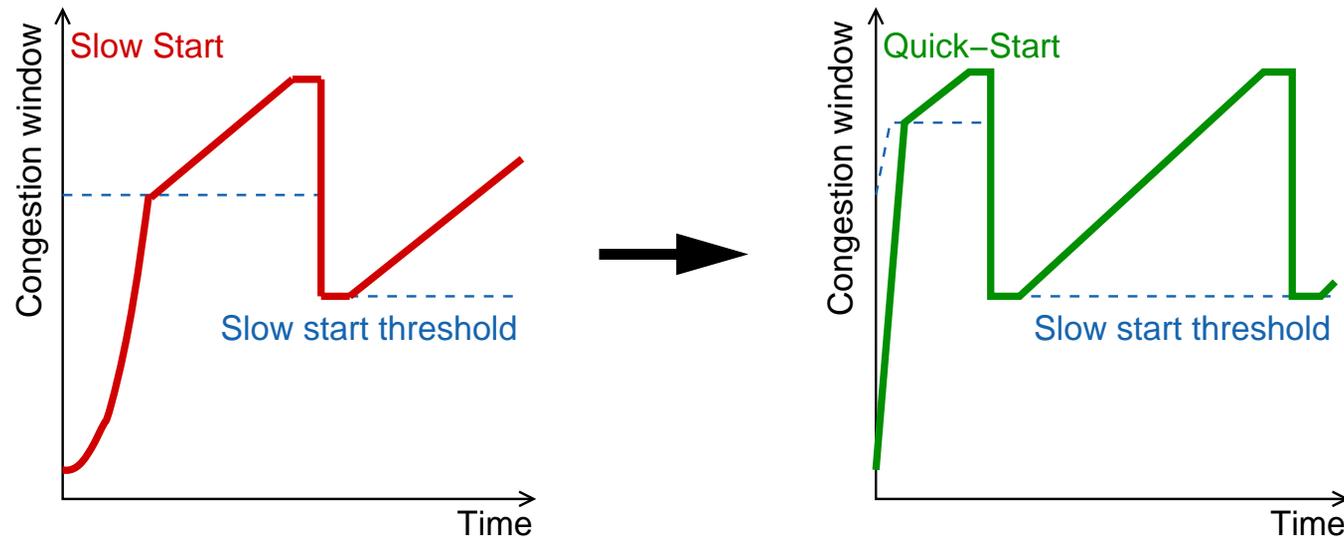
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Overview

Quick-Start TCP Extension (RFC 4782)



Interactions with TCP Flow Control

1. Requires optimized receive buffer allocation
2. RFC 1323 window scaling
 - Receive windows > 64 KB cannot be announced in SYN segments
 - An additional (empty) acknowledgement may be needed when a connection originator uses Quick-Start during 3-way handshake

Changes From -00

Main Changes

- **Text aligned with an RFC 4782 errata (see <http://www.rfc-editor.org/errata.html>)**
- **Only recommends the "additional ACK" method, alternative solutions briefly mentioned in a new appendix**
- **Brief discussion whether to send one or multiple additional ACKs, the latter could reduce reordering risk**
- **"Security considerations" revised**
- **Comment on applicability beyond Quick-Start in a new appendix**
 - ↳ Solutions apply to any "faster-than-Slow-Start" approach

Conclusions and Next Steps

Conclusions

- **TCP flow control must be optimized to fully benefit from RFC 4782**
 1. Modified buffer allocation strategy
 2. Workaround for RFC 1323 window scaling (in 3-way handshake only)
 - Additional (empty) ACK during 3-way handshake
 - May require changes in TCP state engine
- **Would also apply to any other "faster-than-Slow-Start" approach**
- ↳ **Minor issues, but relevant when using RFC 4782 in practice**

Next Steps

- **Proposal: Publication as Informational RFC**
 - Supports and explains the RFC 4782 Errata
 - Provides usage guidelines
- **Window scaling issue could be addressed in an RFC 1323bis (ongoing TCPM work)**