A Stateless Approach for Internet Transport Protocols

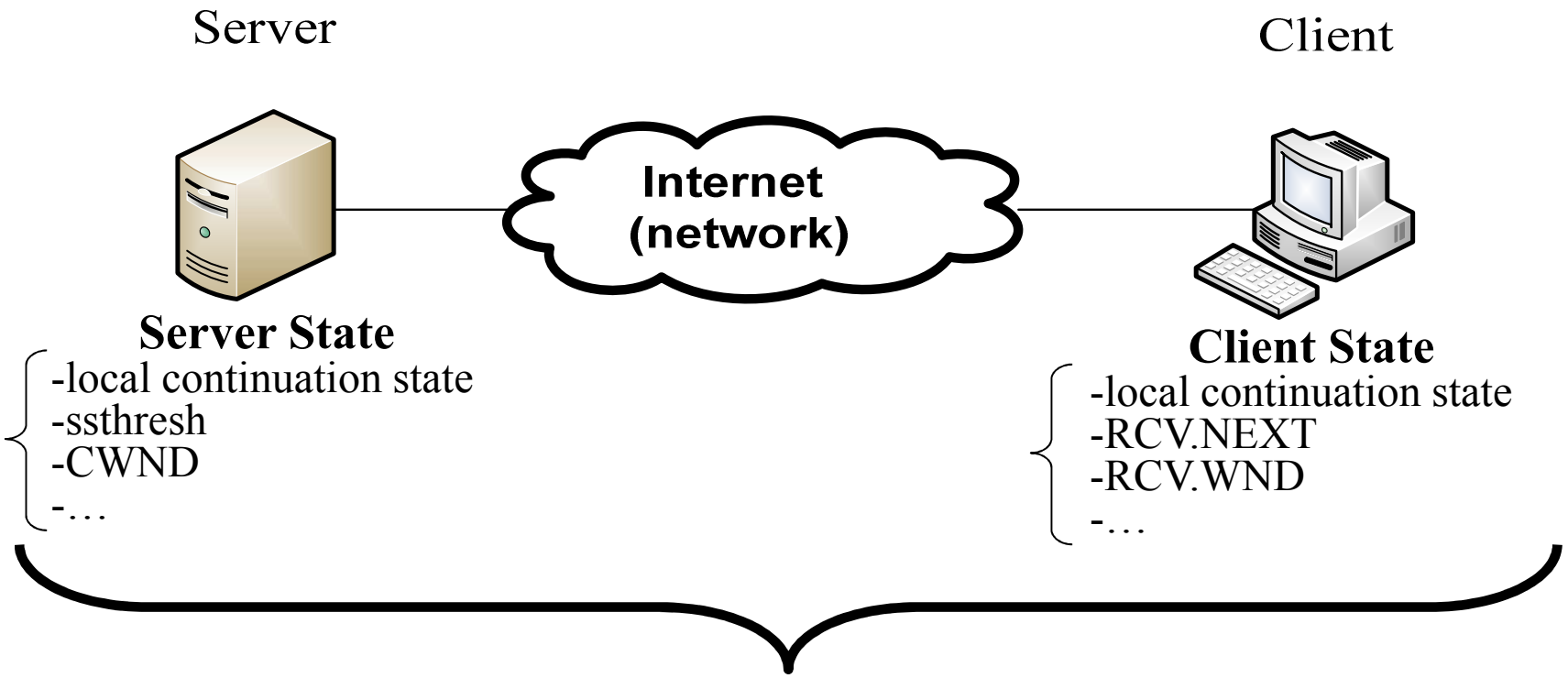
Mikhail Nikitinskiy
Demidov Yaroslavl State University

Historical Information

Main transport protocol in the internet – TCP proposed in the end 70's.

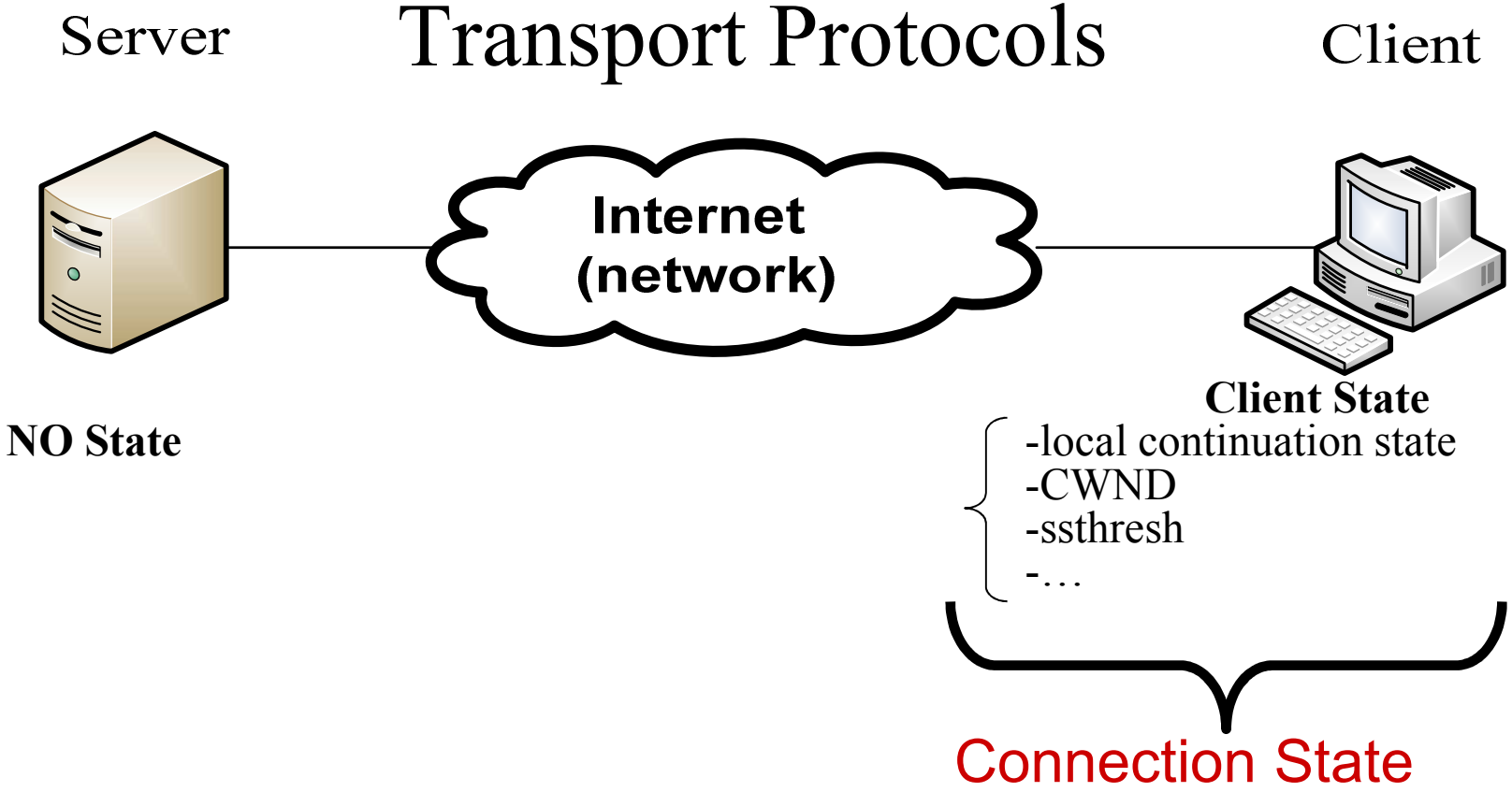
We consider Stateless transport protocol (named Trickles) was proposed by Shieh, A., Myers, A. C., and Sirer, E. G. in 2008 (Cornell University).

Transmission Control Protocol (TCP)



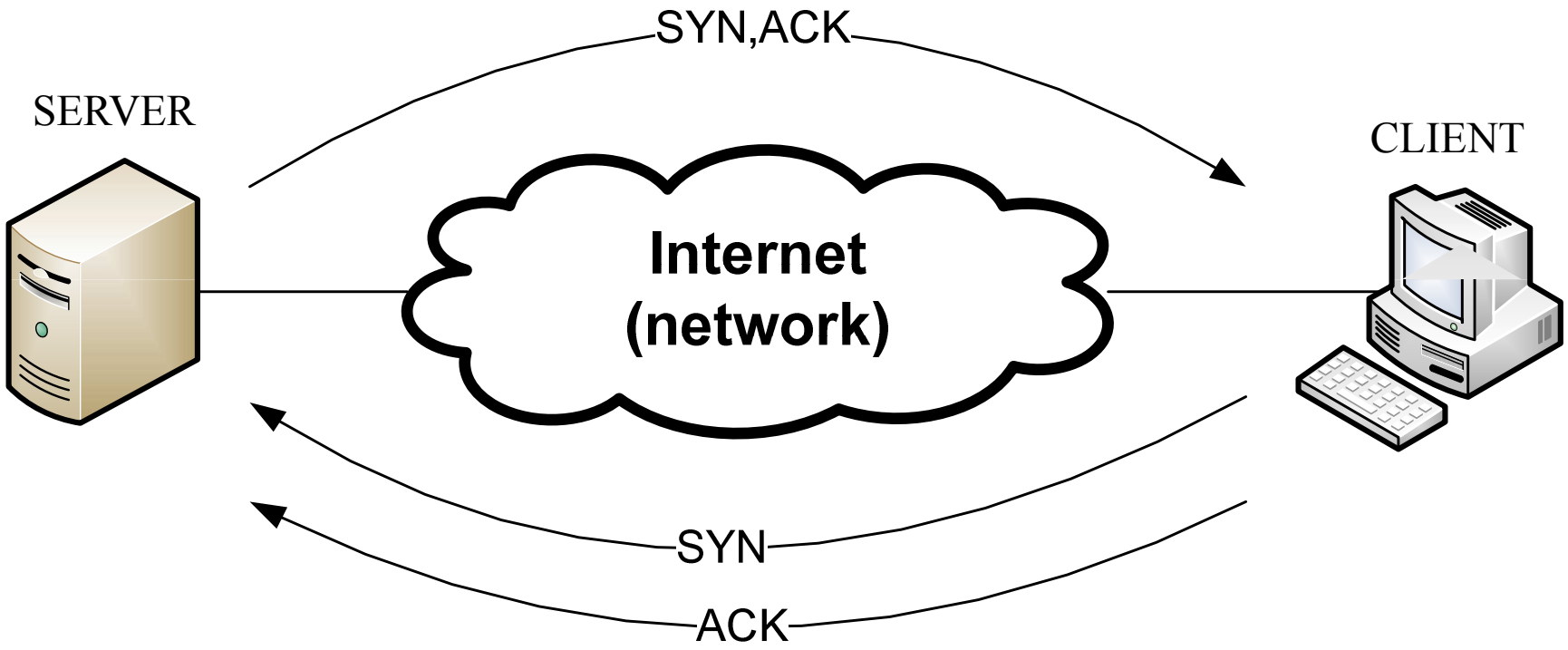
- End-to-end connection managment.
- Reliable data transfer.
- Cross-platform implementation.
- Congestion control.

A Stateless Approach for Internet Transport Protocols

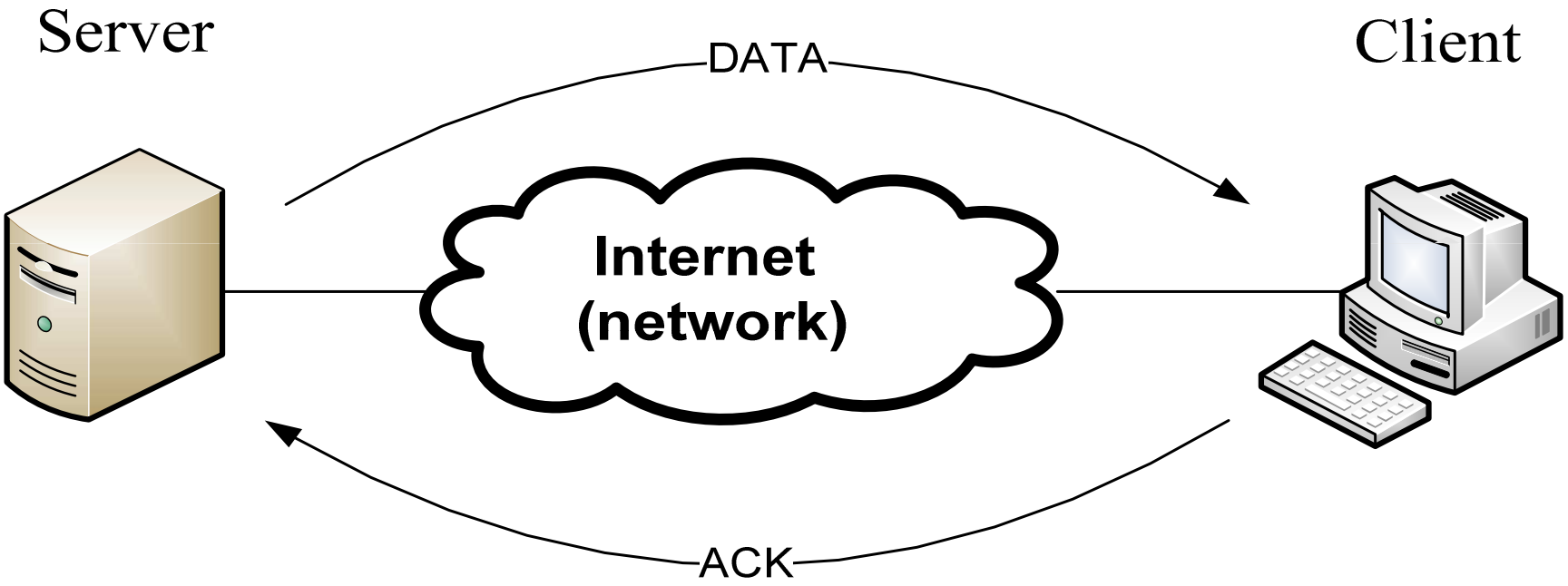


- Full management by the client of the entire process .
- Failure recovery is better than TCP.
- Less service segments interchange.
- TCP segments are modified using standard procedure to carry Trickles parameters.

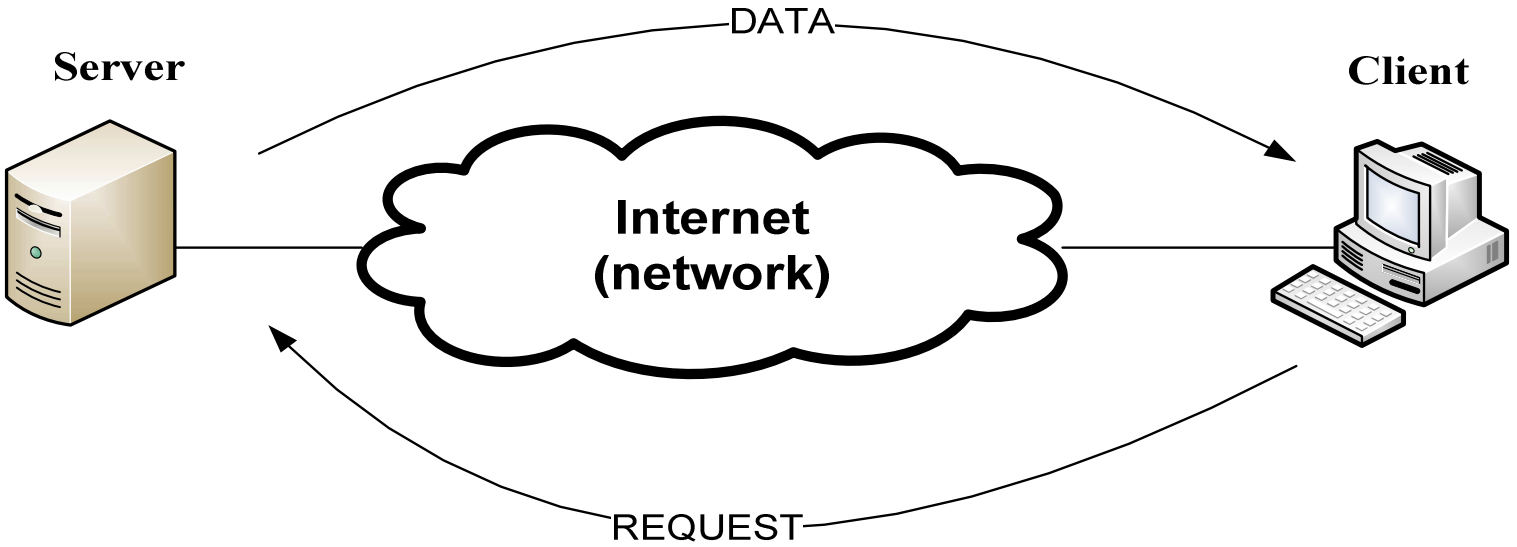
Connection Synchronization (TCP)

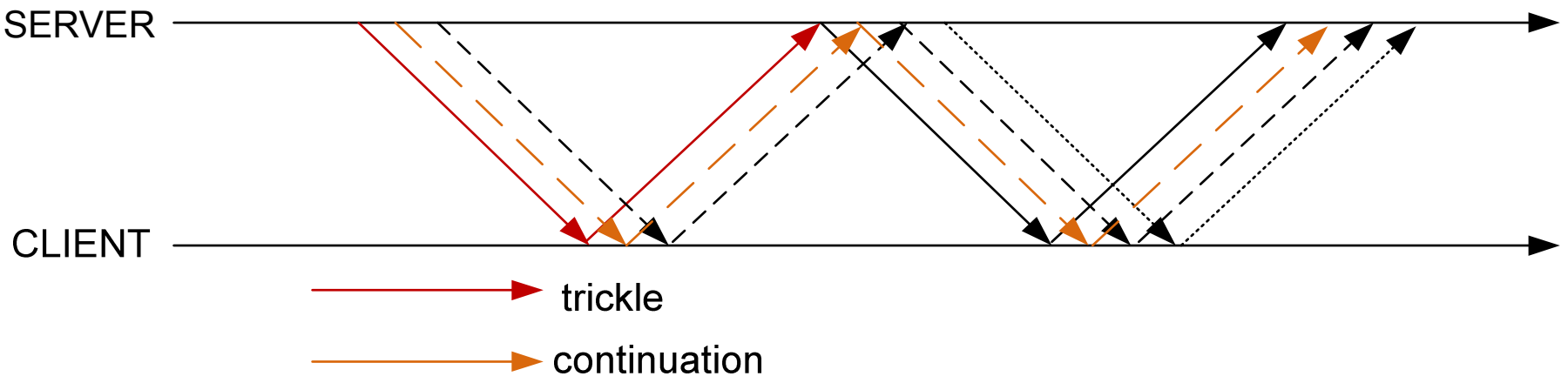


Data Transfer (TCP)

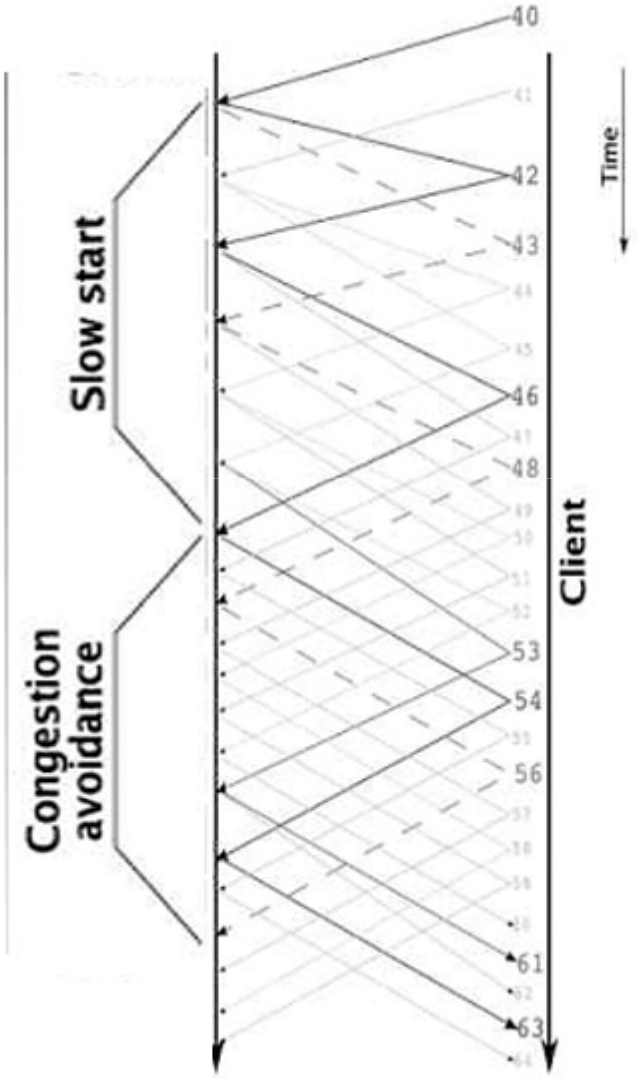


Connection and Transfer Data (Trickles)

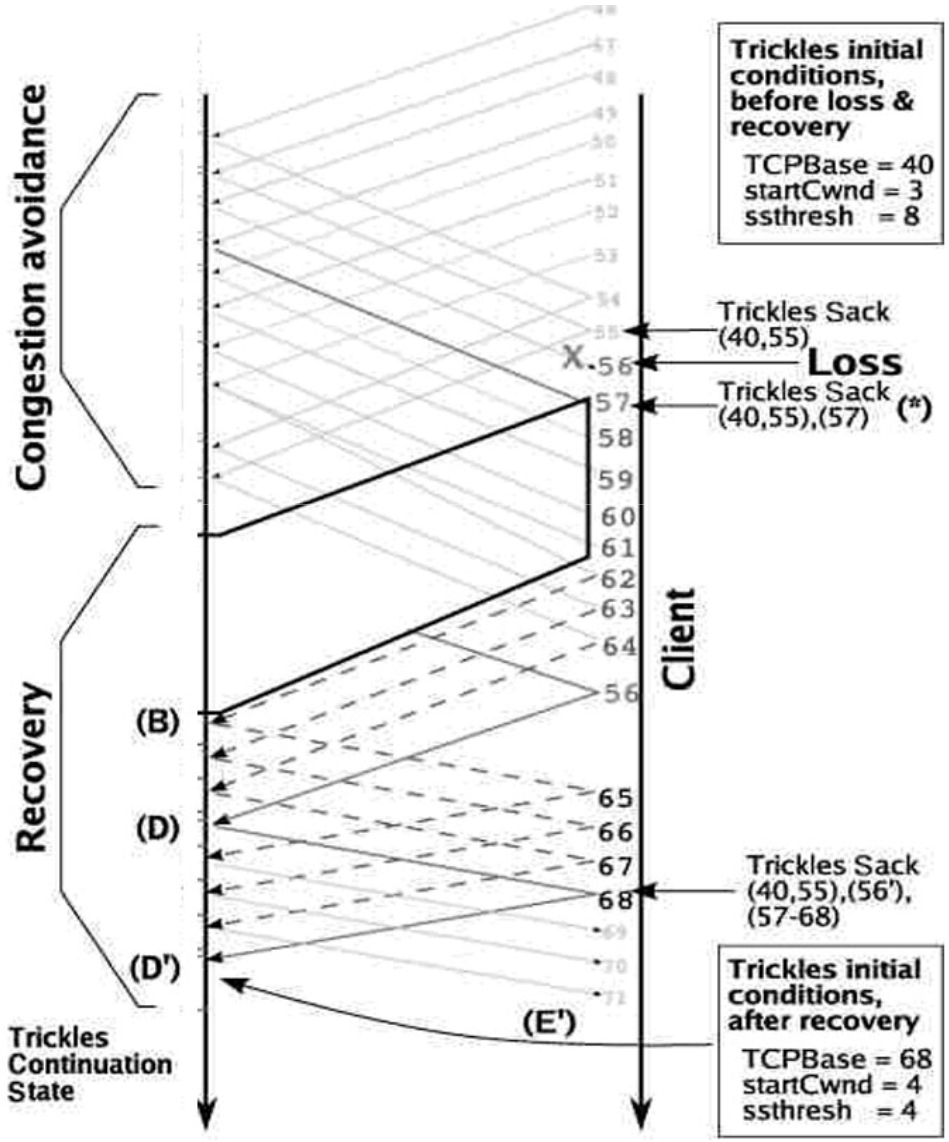




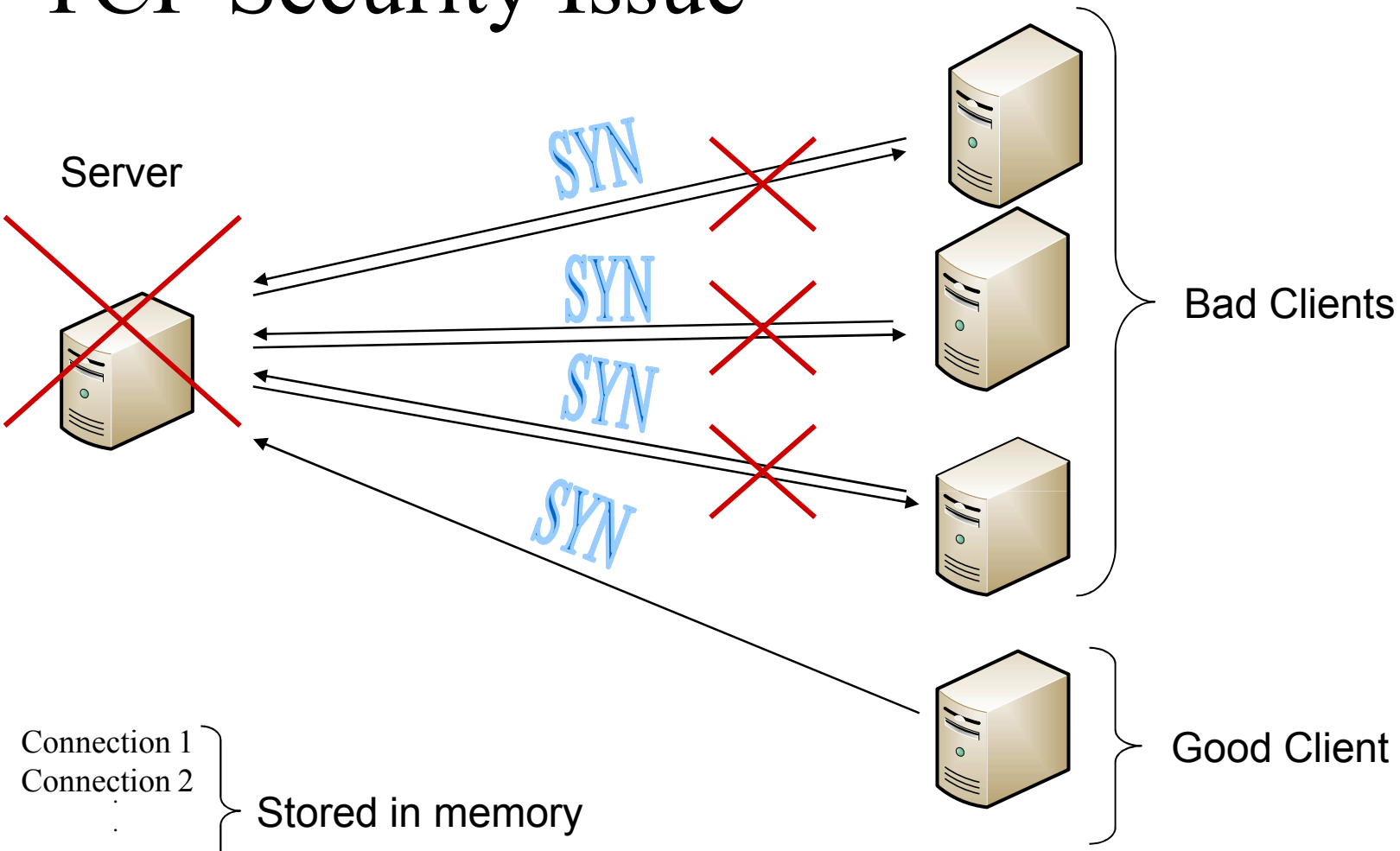
Slow start and Congestion avoidance



Recovery (Trickles)



TCP Security Issue



Out of resources!!!
RESTART!

Wireless World

- connection suspension and migration
- battery power

Future work

- Testing and analysis of the protocol using ns2
- Modification of the protocol
- Implementation of the protocol

Thank you for your attention!