

Transitioning to MPTCP with efficient Protocol Converters

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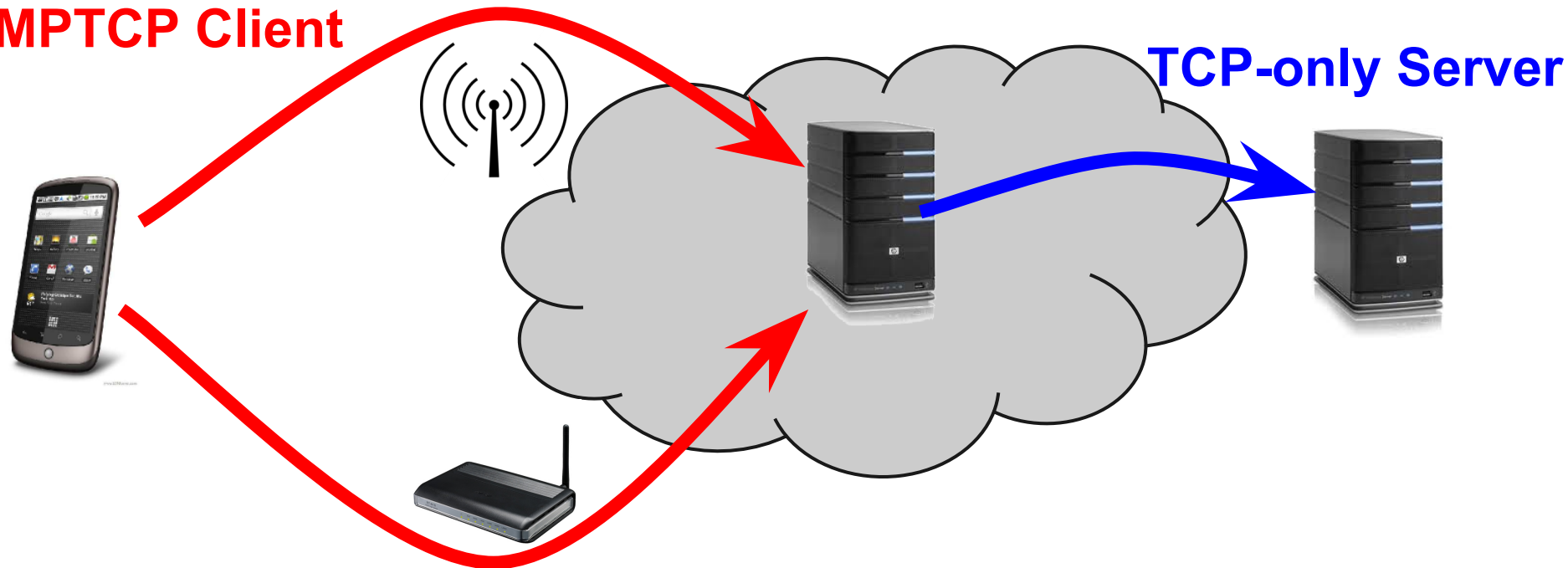


Need for Protocol Converters

- Transition to MPTCP will take several years
- Encourage early adopters by deploying protocol converters

Need for Protocol Converters

MPTCP Client

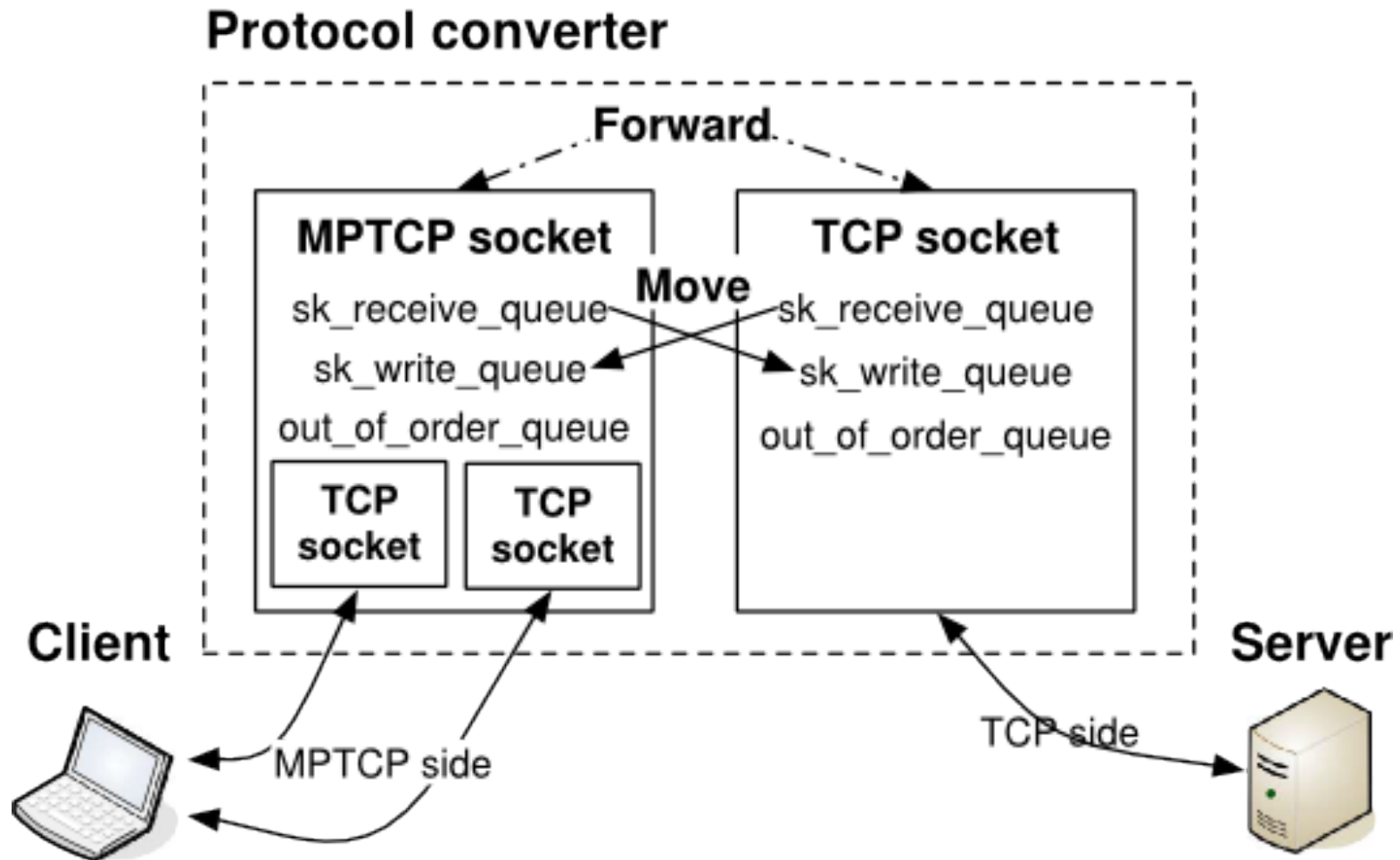


Our Design

- Translate MPTCP to TCP (or vice-versa)
- Supports multiple subflows

- Full In-Kernel implementation (3K LOC)
- High performance
 - Minimized allocations
 - Minimized data-copying

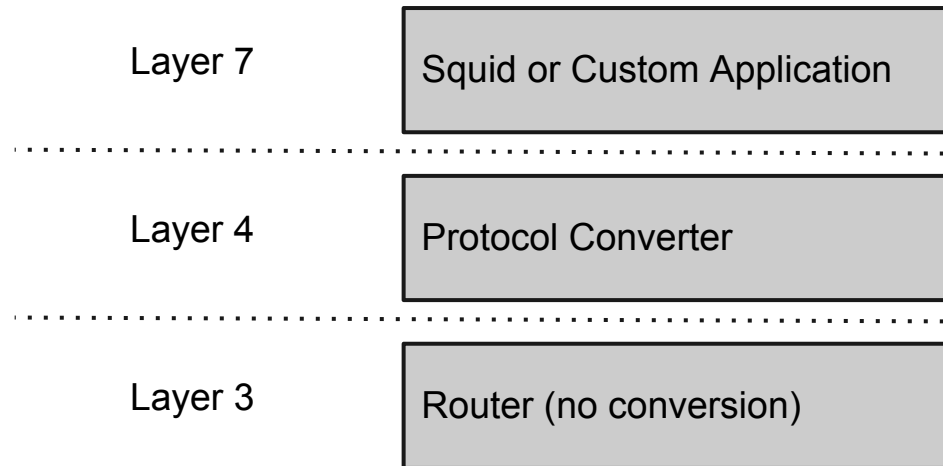
Our Design



Performance evaluation

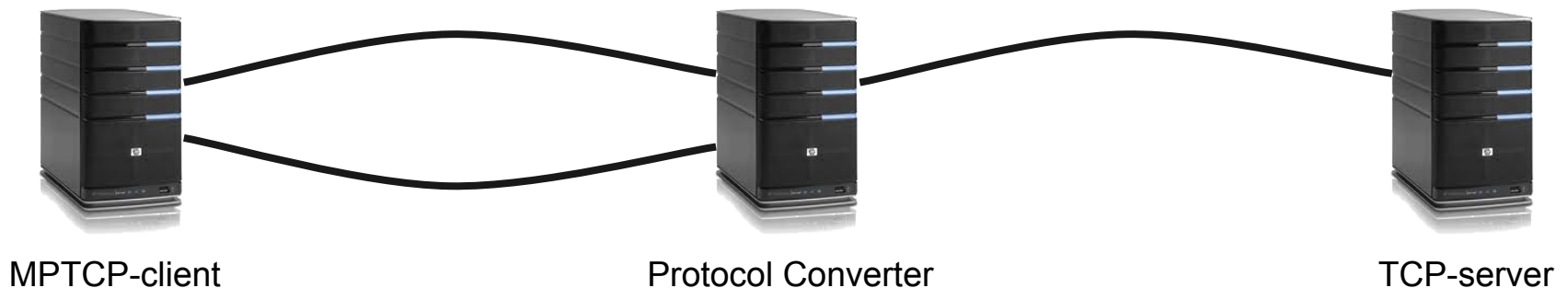


Protocol Converter vs. other solutions

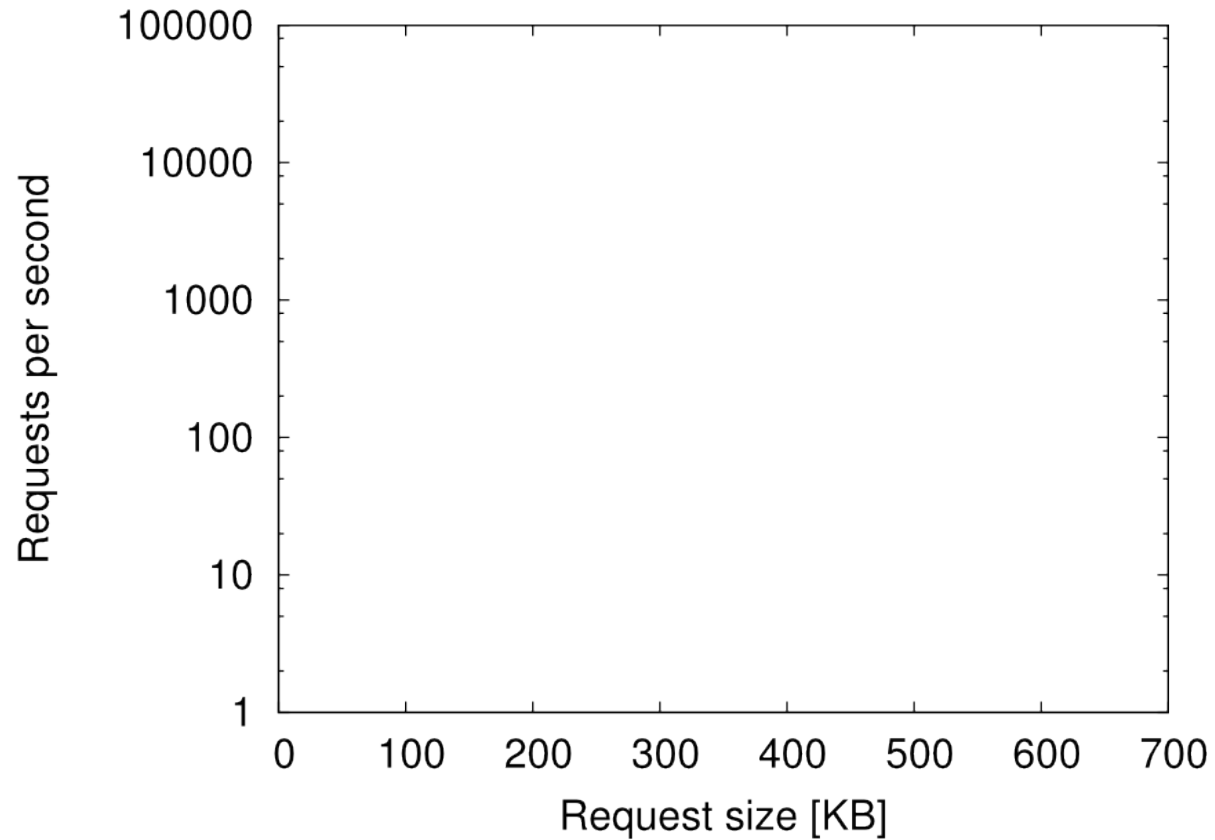


Apachebenchmark

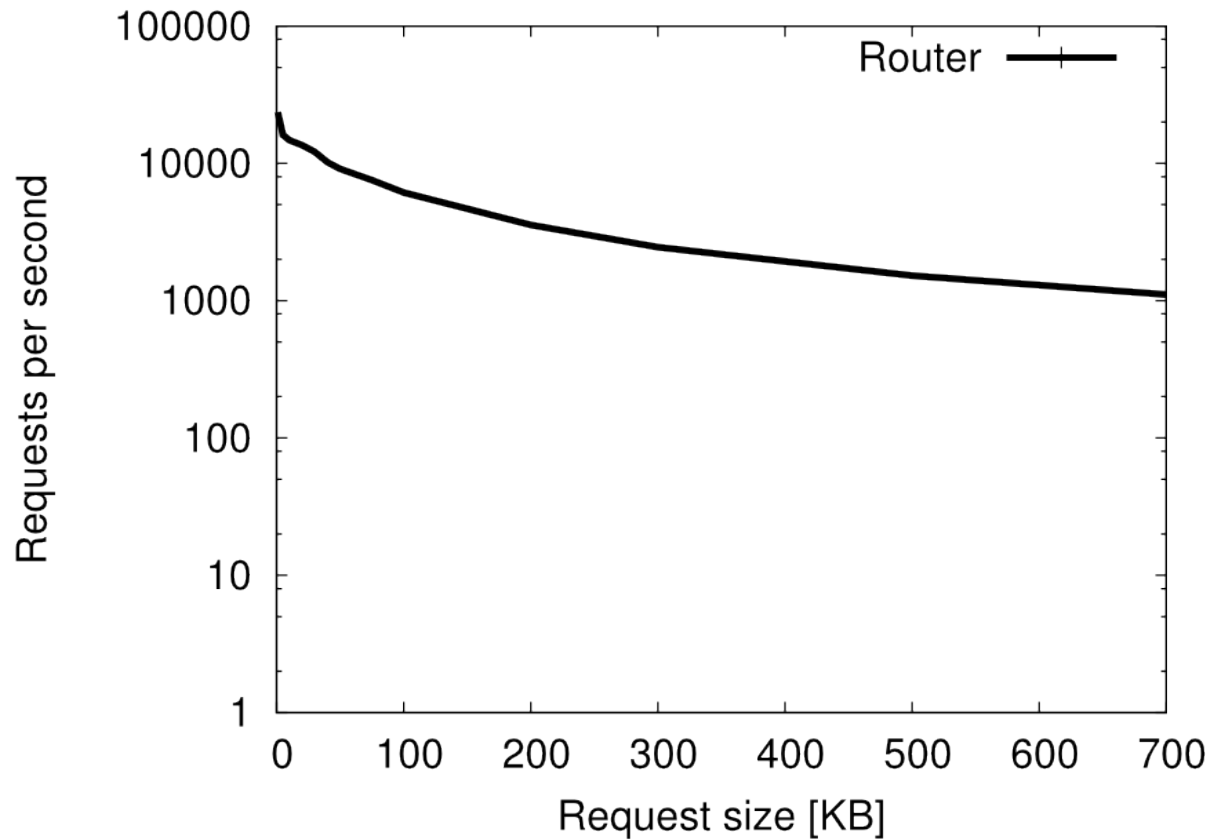
- 100 parallel clients
- HTTP-get for files of varying size
- Up to 100000 Requests
- Measuring the number of requests per second



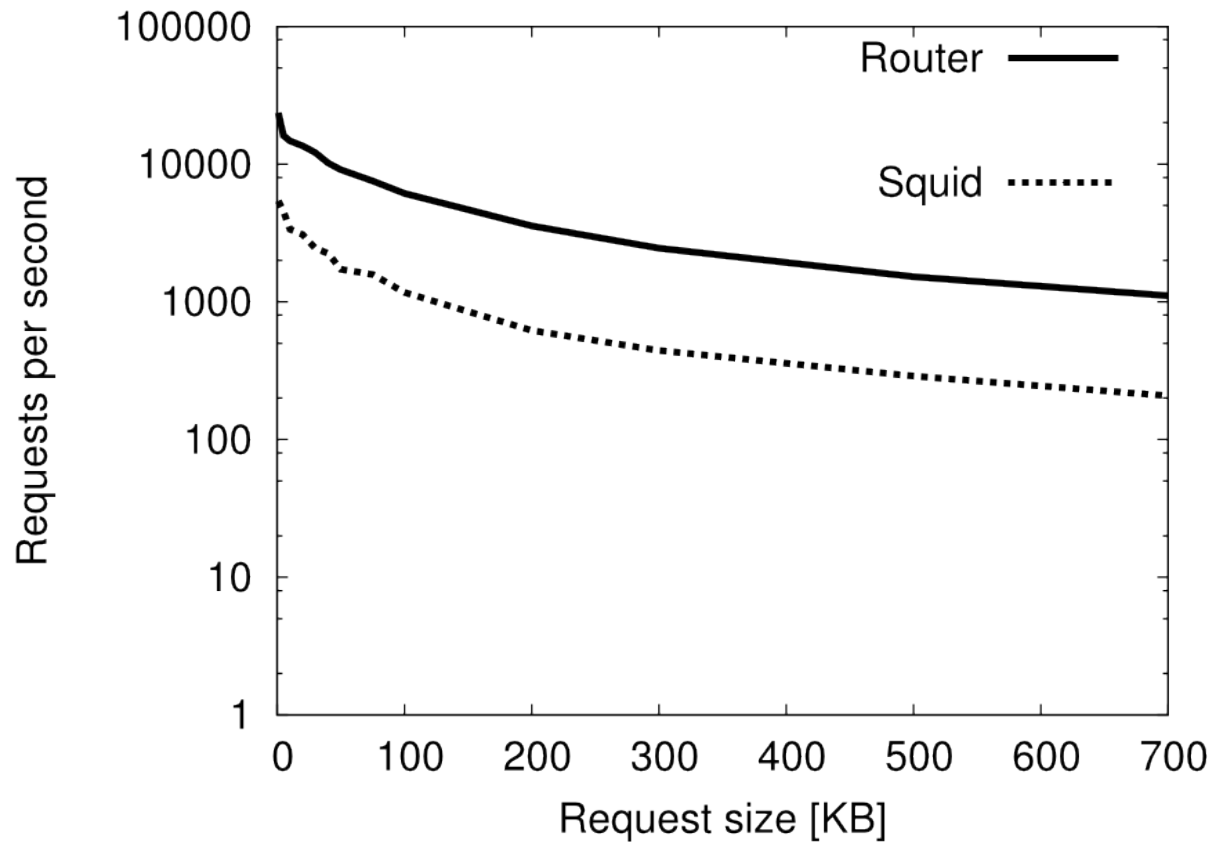
Apachebenchmark



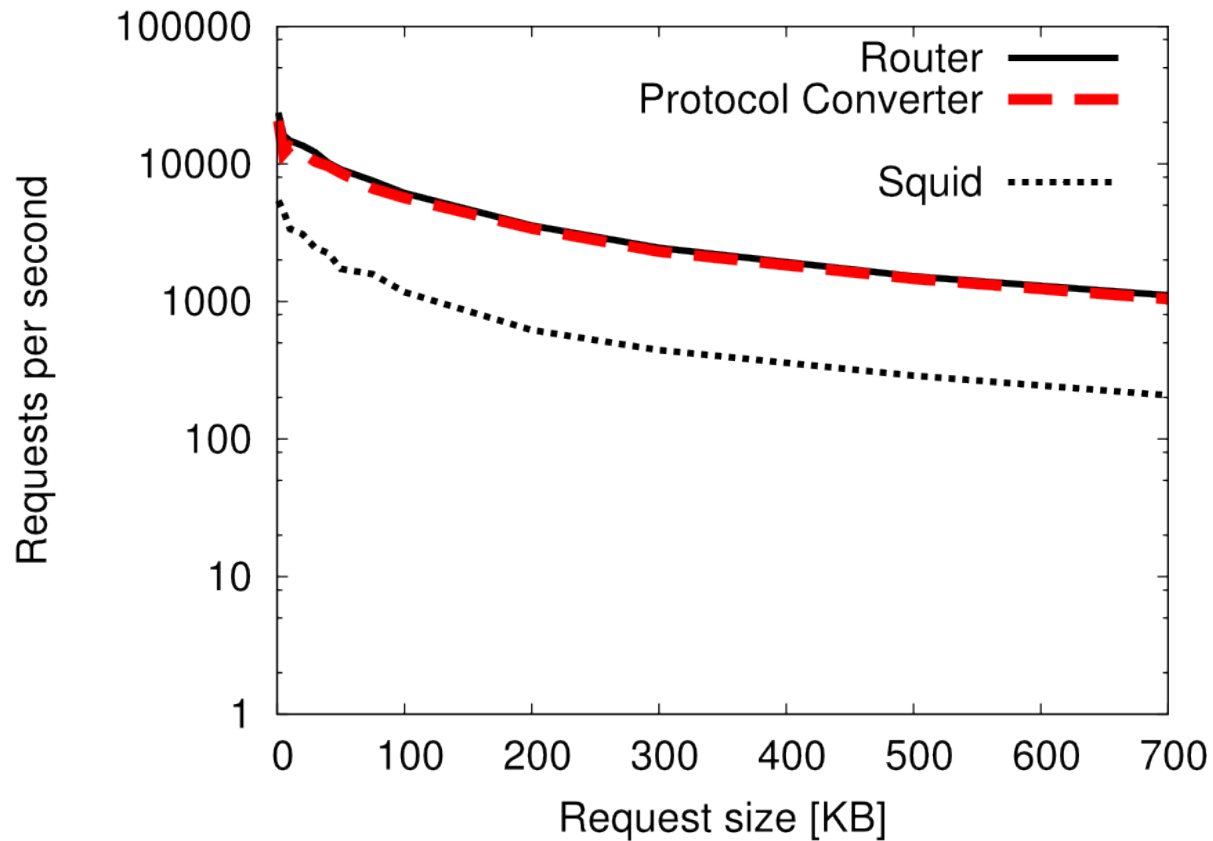
Apachebenchmark



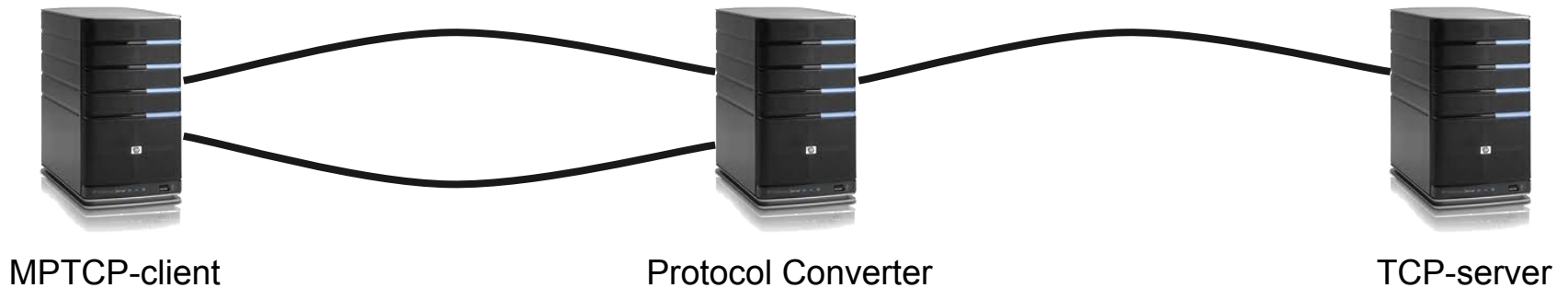
Apachebenchmark



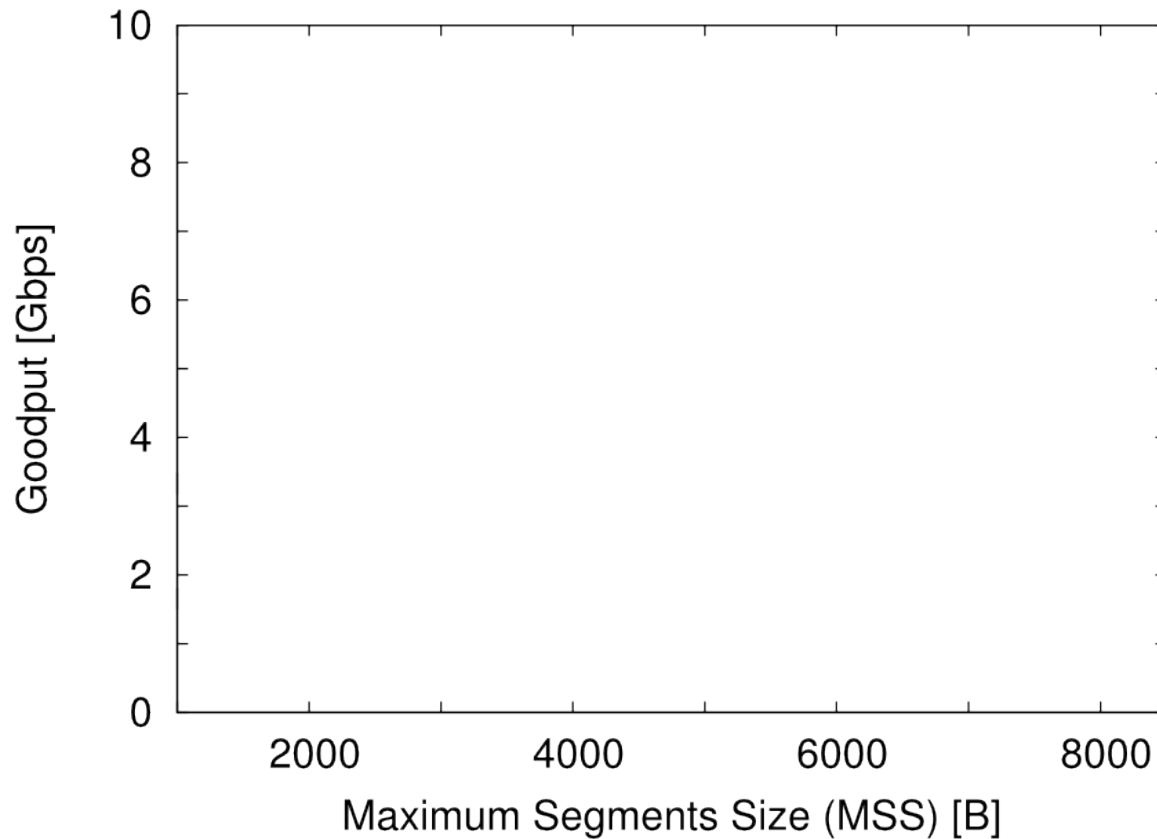
Apachebenchmark



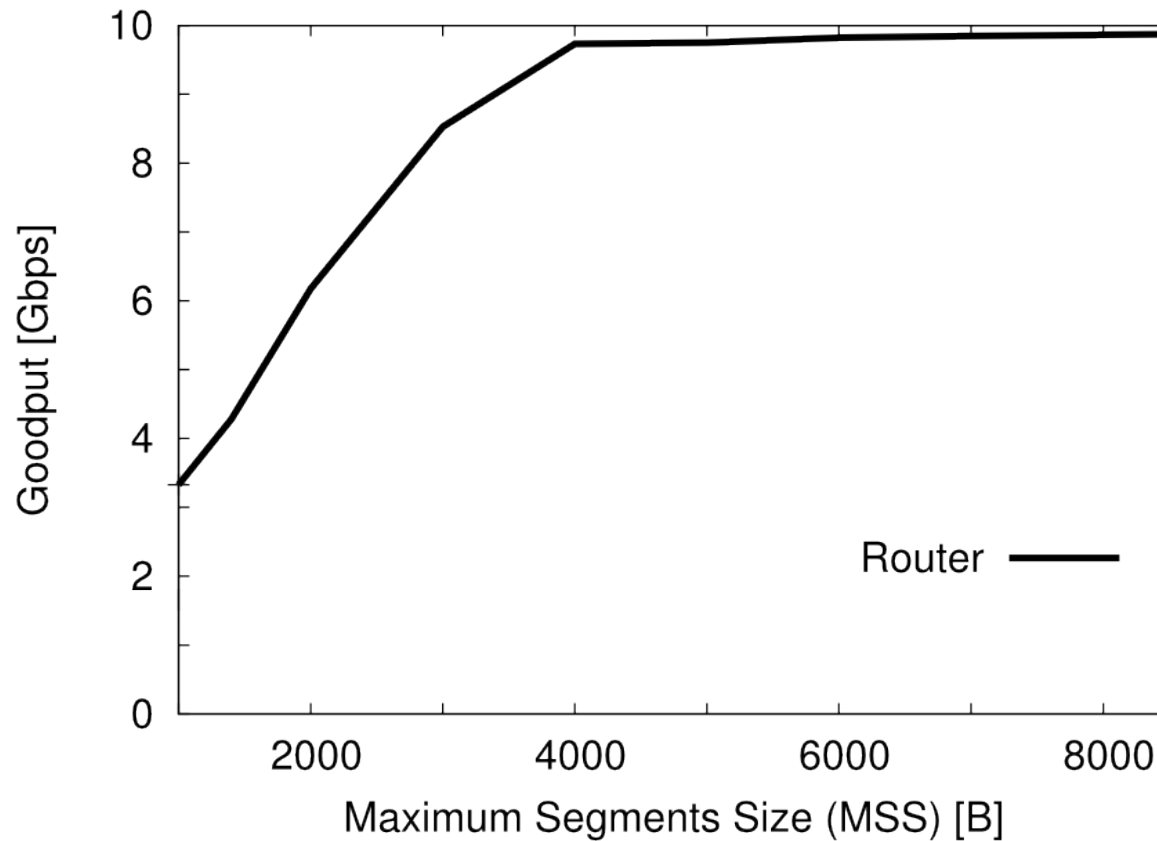
Forwarding at 10Gbps



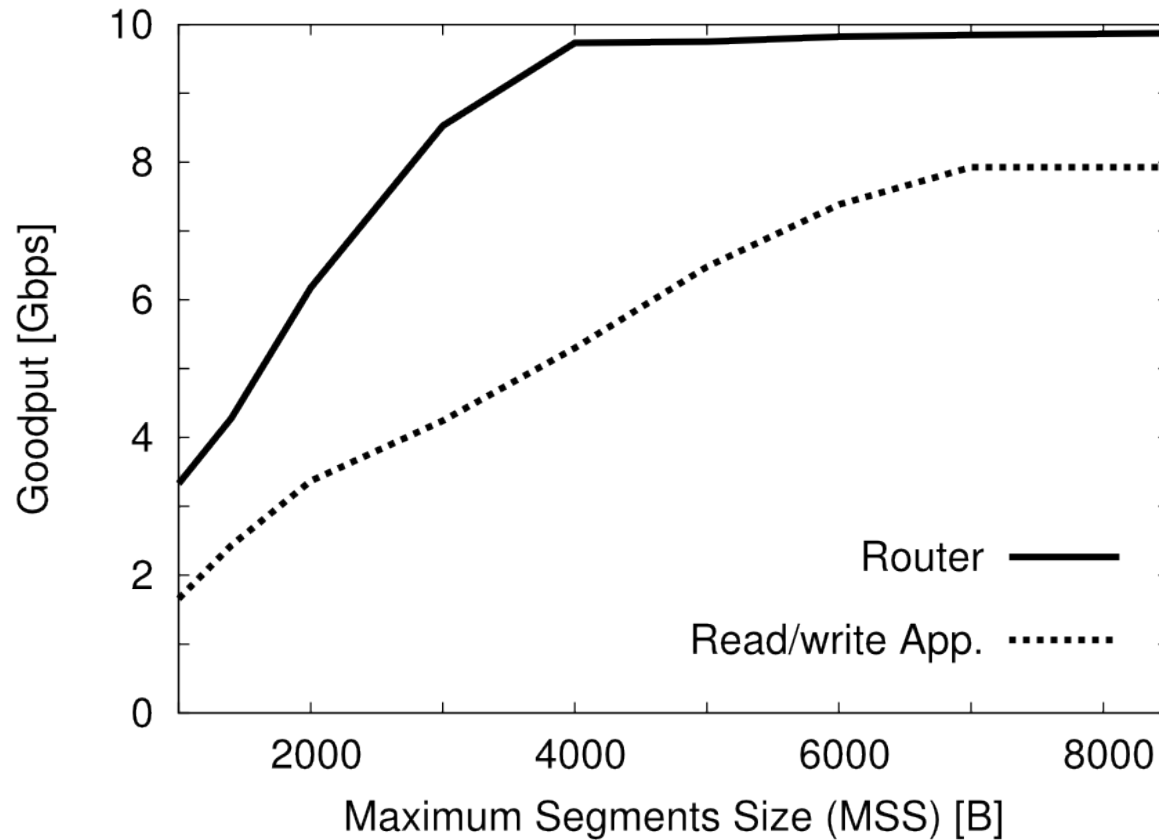
Forwarding at 10Gbps



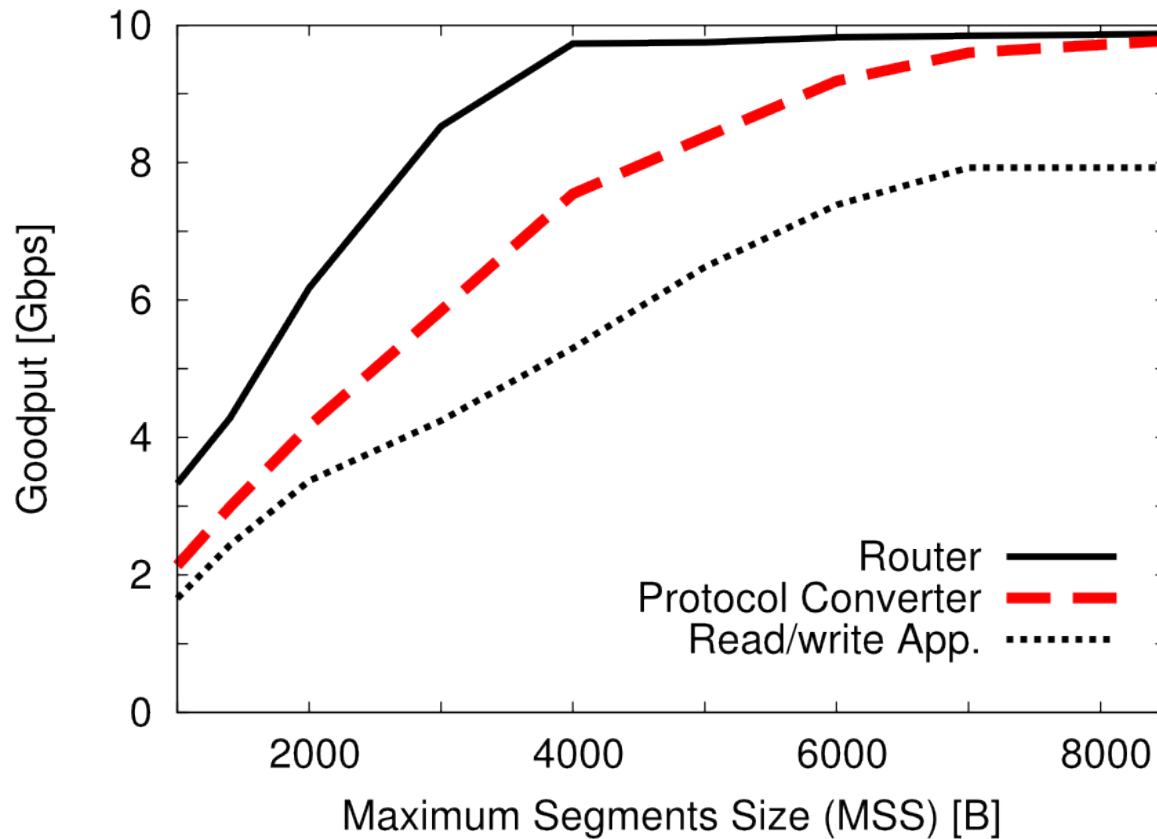
Forwarding at 10Gbps



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Forwarding at 10Gbps

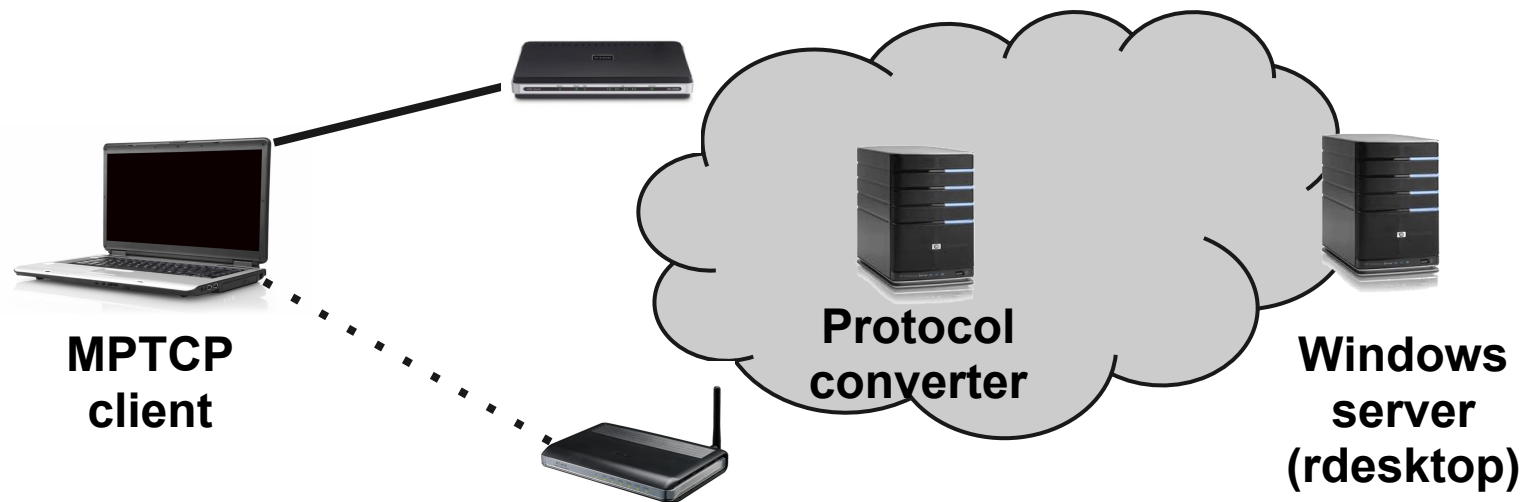


Video



Video

- Remote-Desktop to a TCP-only Windows server, passing by the Protocol Converter.



- Connection is not lost after unplugging the Ethernet cable.