

FileSender Terabyte Challenge

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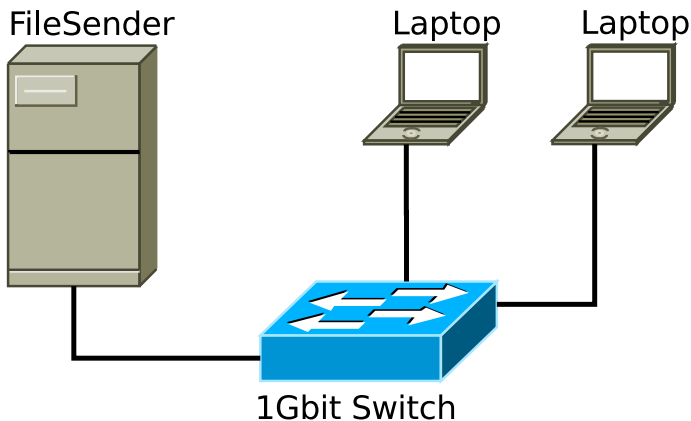
February 6, 2013

What is FileSender?



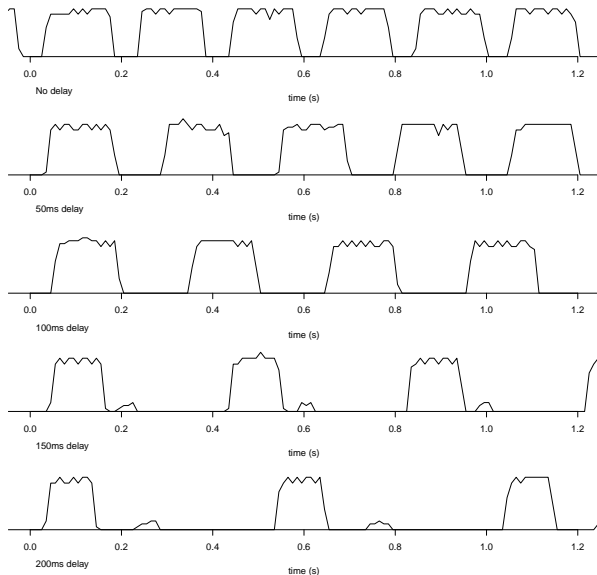
- Meant to be easy for user and sysadmin
- No extra software requirements
- Default setup reaches only 150Mb/s

Can we identify bottlenecks in the FileSender application and how can we improve the transfer speeds by reducing or removing these bottlenecks.



- Tested and excluded the hardware as the bottleneck (except HDD)

The bottleneck



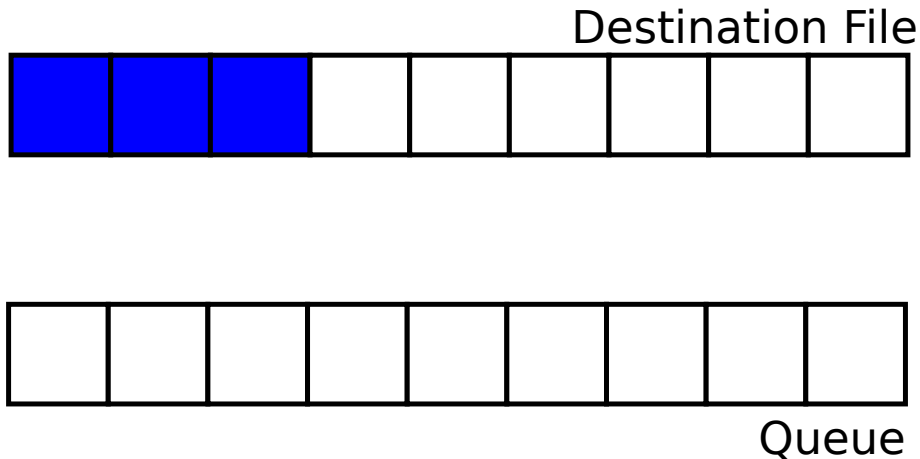
Client side implementation

- Remove Gaps
- JavaScript webworkers
- Parallelisation
- Concurrent TCP streams (like GridFTP)

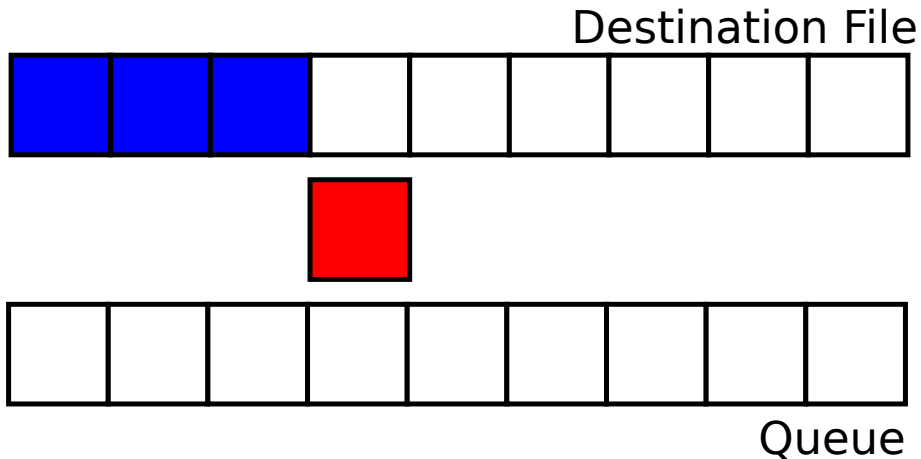
Server side implementation

- Handle out-of-order chunks
- X-Start-Byte HTTP header
- File based queue

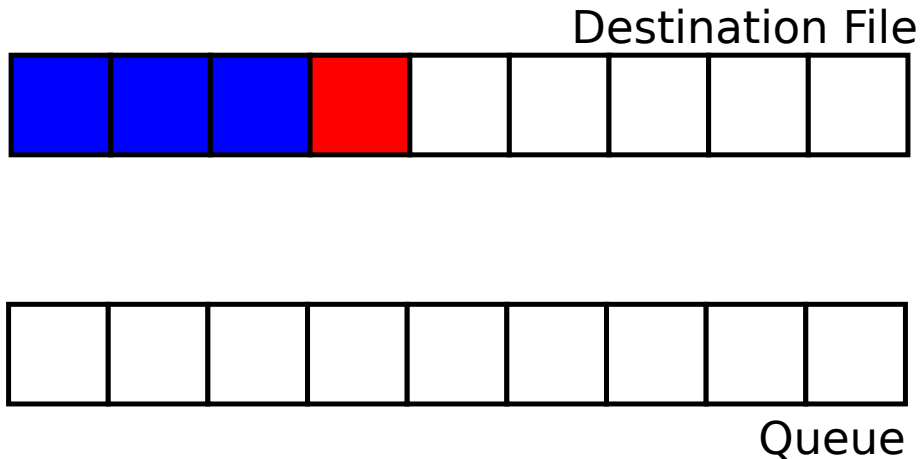
Server side implementation (Example)



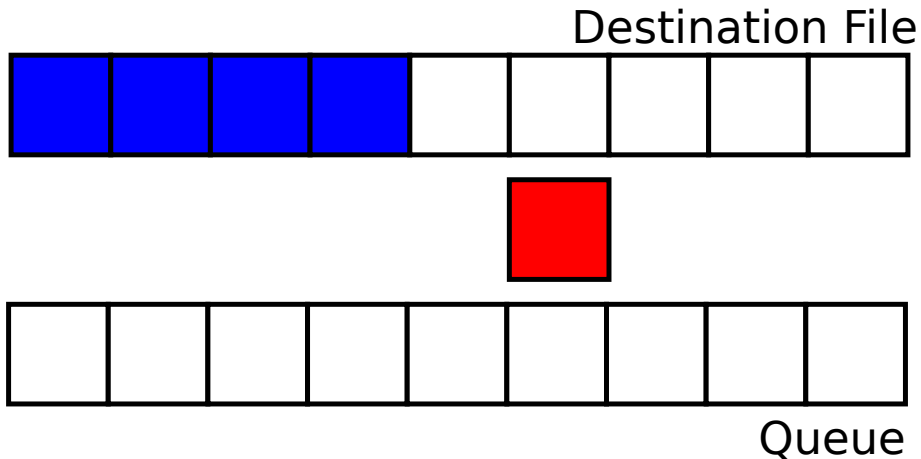
Server side implementation (Example)



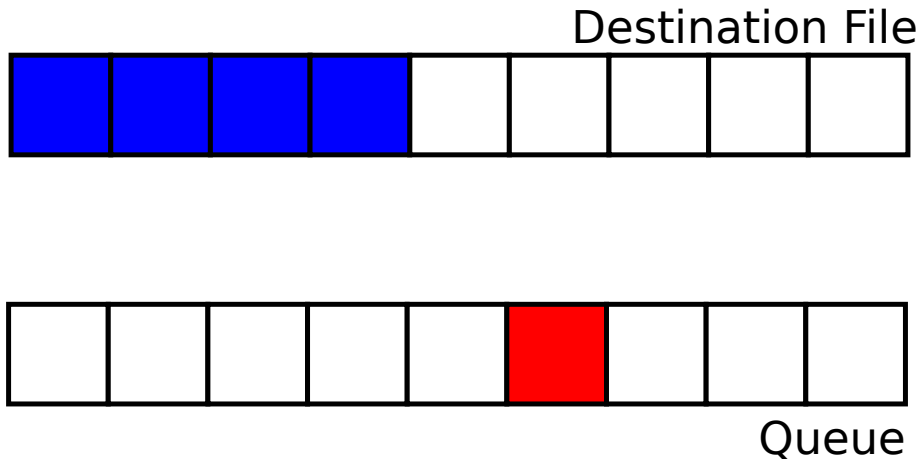
Server side implementation (Example)



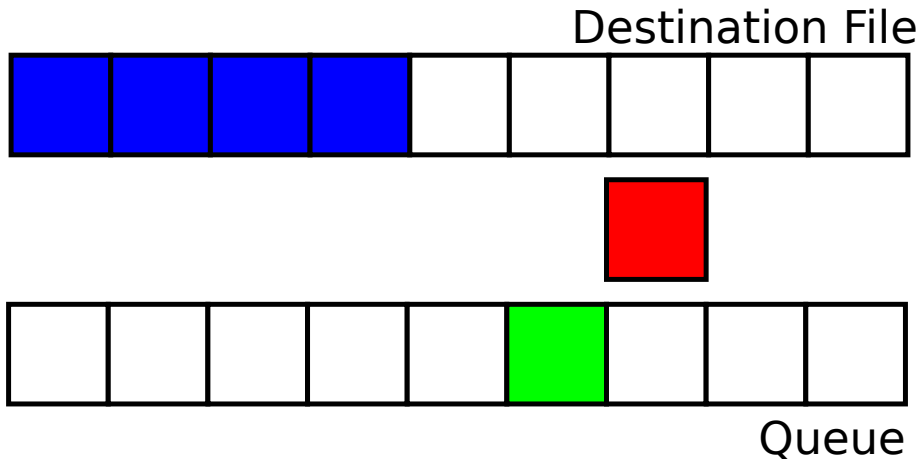
Server side implementation (Example)



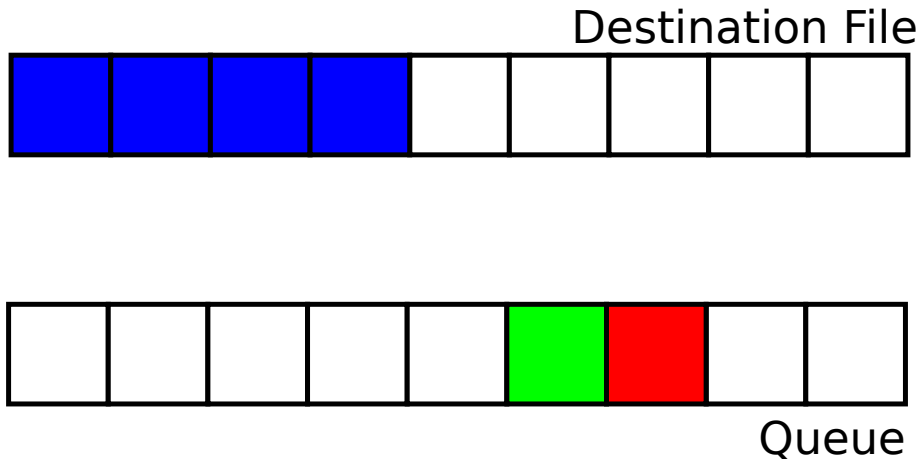
Server side implementation (Example)



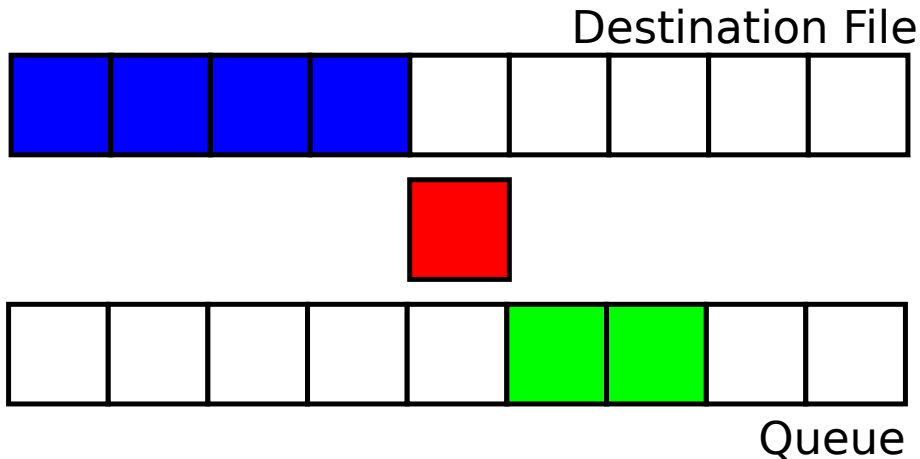
Server side implementation (Example)



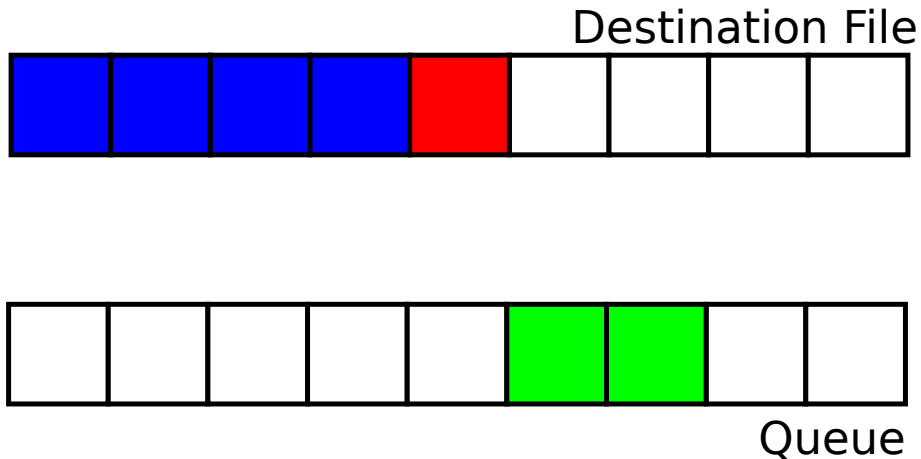
Server side implementation (Example)



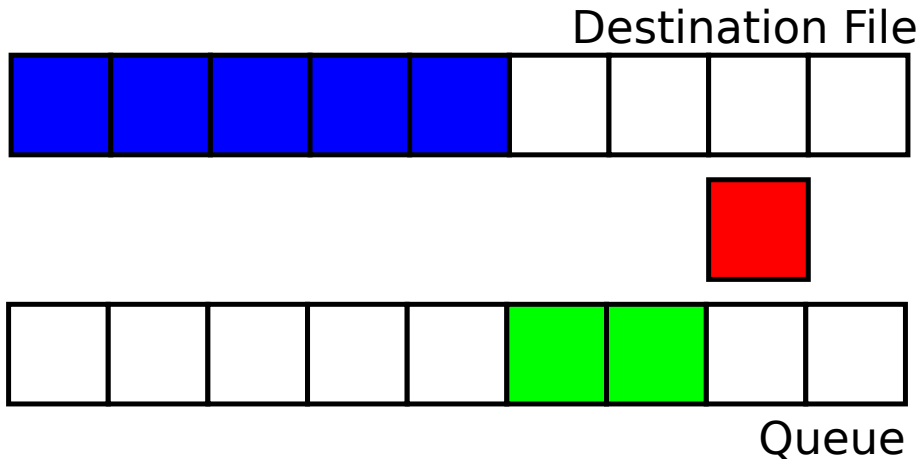
Server side implementation (Example)



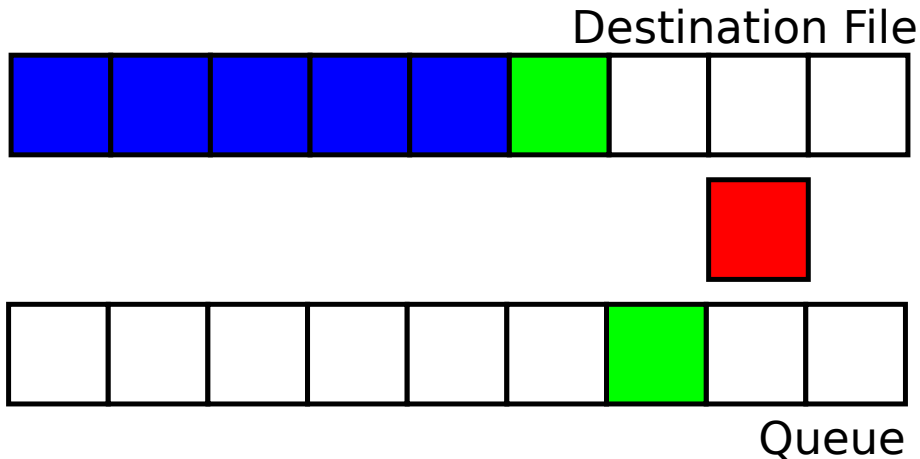
Server side implementation (Example)



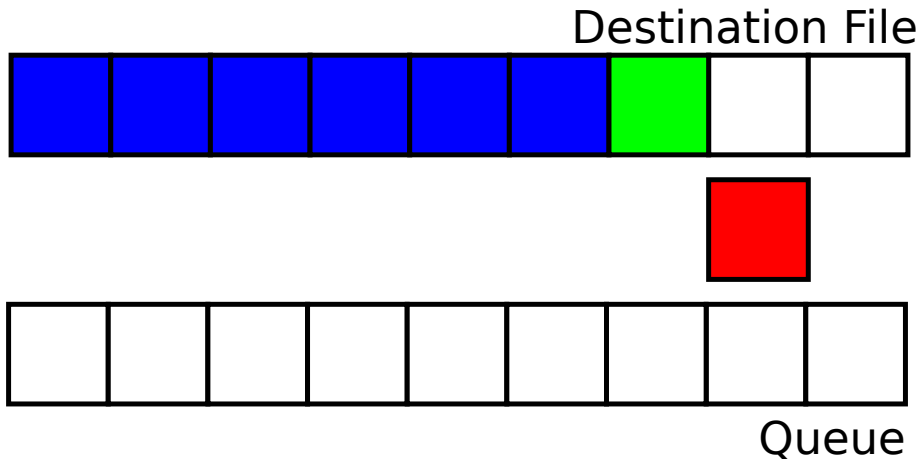
Server side implementation (Example)



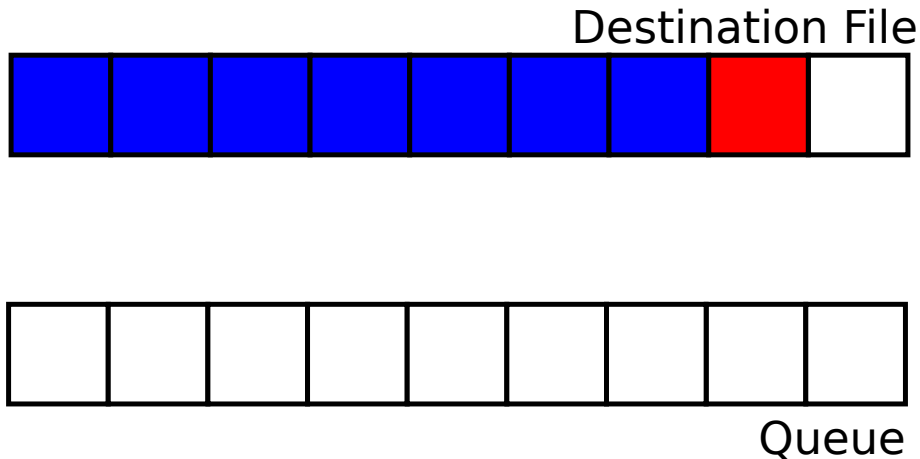
Server side implementation (Example)



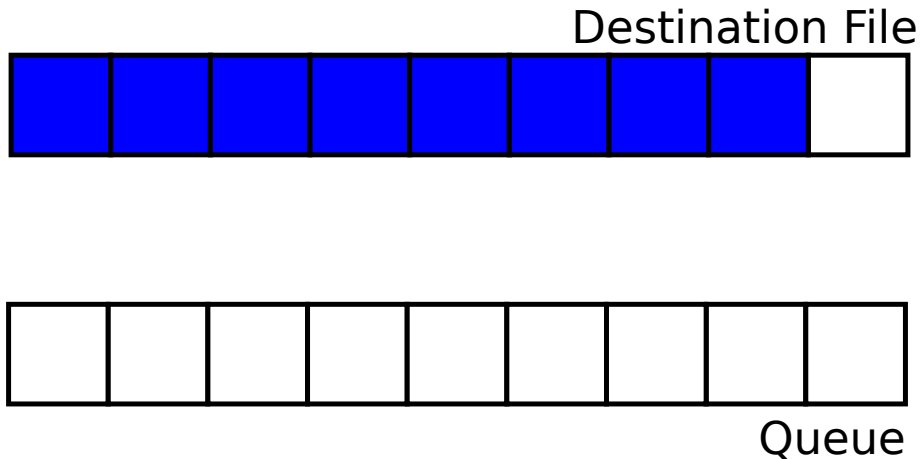
Server side implementation (Example)



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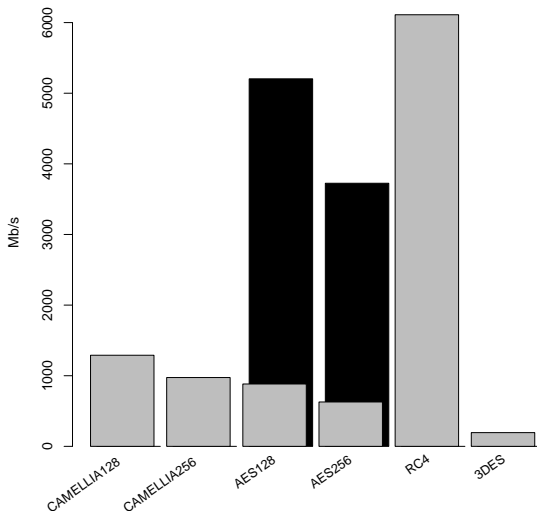


Server side implementation (Example)

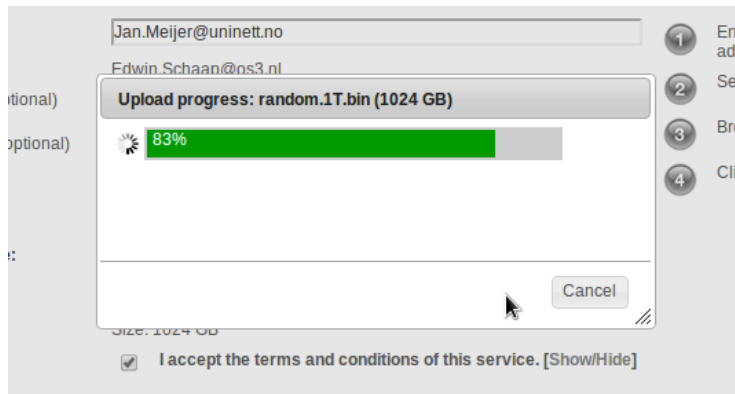


SSL performance

- Depends on cipher
- AES-NI



Terabyte Challenge



- Transferred in 3 hours and 19 minutes (@702Mb/s)
- Harddisk as bottleneck

Questions?

made possible by

