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

René Klomp, Edwin Schaap (UvA)
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)

Destination File

Queue
Server side implementation (Example)

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Queue
SSL performance

- Depends on cipher
- AES-NI

![Bar chart showing SSL performance for different ciphers: CAMELLIA128, CAMELLIA256, AES128, AES256, RC4, 3DES. The chart indicates the performance in Mbps (Megabits per second) for each cipher.]
Transferred in 3 hours and 19 minutes (@702Mb/s)

Harddisk as bottleneck
Questions?

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