GridPP
UK Computing for Particle Physics

HTTP(S) with SlashGrid/GridSite

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SlashGrid filesystem

/grid/http[s]/example.com/dir/file.dat

User process
Able to access remote HTTP(S) URLs via POSIX-like filesystem

fuse kernel module
Hands /grid system calls to SlashGrid daemon

slashgrid daemon
Fetches required blocks of remote files

GSI - X.509 - VOMS user proxies stored on disk, used for HTTPS

cache on disk
Caches file blocks and file metadata

Other HTTP(S) clients

http[s]://example.com/dir/file.dat

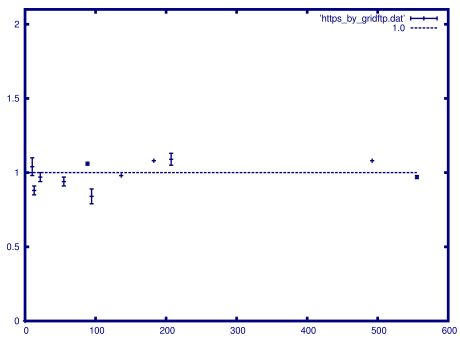
User process

Command line clients:
- htcp (like scp), curl, wget

Web browsers
- IE, FF, Opera

Applications with built-in HTTP(S):
- ROOT, GFAL-enabled etc.

Graph compares time required to copy a 100MB file from Manchester to a remote LCG/EGEE site, with the HTTPS time divided by the GridFTP time plotted against the HTTPS time in seconds. HTTPS transfers were made using GridSite's htcp command.
(492s for Manchester Niels farm to TIFR, India; 10s for Manchester Niels farm to Manchester Tier-2 Bohr farm.)



Apache HTTP(S) fileserver

HTTP unencrypted access
Uses sendfile() for efficiency. Secure access via GridHTTP mechanism.

mod_ssl for HTTPS
Comparable speed to HTTP but consumes more server-side CPU

mod_gridsite: implements PUT,DELETE; adds GSI proxy and VOMS support; enforces GACL access policies

Unix filesystem
Files stored on plain filesystem, accessible to local processes, backups, other protocols' servers etc.

CGI content generators
eg monitoring etc presented as virtual files

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