




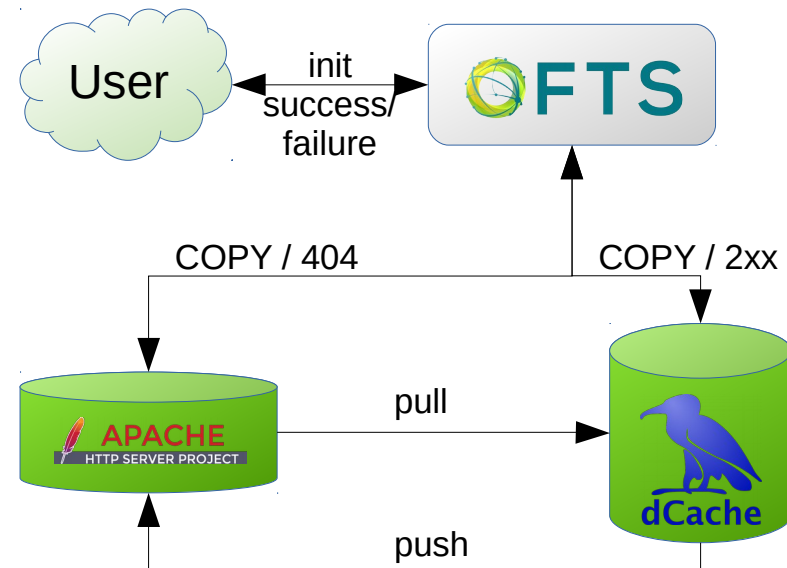
HIFIS backbone transfer service

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¹ Deutsches Elektronen-Synchrotron DESY,

EGI TCB datatransfer WG, Mar 05, 2021

- Core service in **HIFIS**
 - **FTS3** as backend
 - **webFTS** as comfortable WebUI
 - **FTS3-REST** as CLI for automated transfers
 - Planned:  **RUCIO** for policy driven transfers
- ➔ Applications for all needs and purposes
- ➔ Apache httpd as **passive** endpoint



- Apache **httpd** webserver modules used:
 - ✓ mod_dav (webDAV capabilities)
 - ✓ mod_auth_openidc (OpenIDConnect/OAuth2)
 - ✓ modified mpm_itk (Multiprocessing module, user mapping)
 - ✓ self-written lua script (local user mapping, optional, POC)
 - ✓ self-written mod_want_digest (instance digests following RFC 3230)
- ➔ Compatible with FTS3 and accessible via OAuth2 secured webDAV
- ➔ Transfers are possible between active EP and httpd
- ➔ TPC transfers between two Apaches are WIP (KIT)



- `mod_want_digest` (github.com/wetzel-desy/mod_want_digest):
 - Developed by Tim Wetzel and Paul Millar, fragments taken from httpd's `mod_negotiation`
 - Implements instance digests in accordance with RFC 3230 (HTTP headers „**Want-Digest**“ and „**Digest**“)
 - Supports ADLER32, MD5 and SHA digests
 - Alpha version until now
 - ✓ Digest caching mechanism or on-demand calculation
 - Cached digests return faster for large files than on-demand calculation
 - ➔ Code cleanup next

Source available on

<https://gitlab.hzdr.de/hifis/fts-apache-k8s>

- httpd in a Docker container
 - Built with GitLab CI/CD and available in local registry
 - Deployment via Helm chart
 - All variables (secrets, volumes, certificates, etc.) mapped from values.yaml into pod
- Prerequisites:
 - Client at OIDC/OAuth2 provider (HelmholtzAAI, EGI-CheckIn, WLCG-cloud)
 - GRID host certificate
 - K8s-Cluster with ports 80/443 open

Kubernetes/Helm

