

DESYcloud: an ownCloud & dCache update

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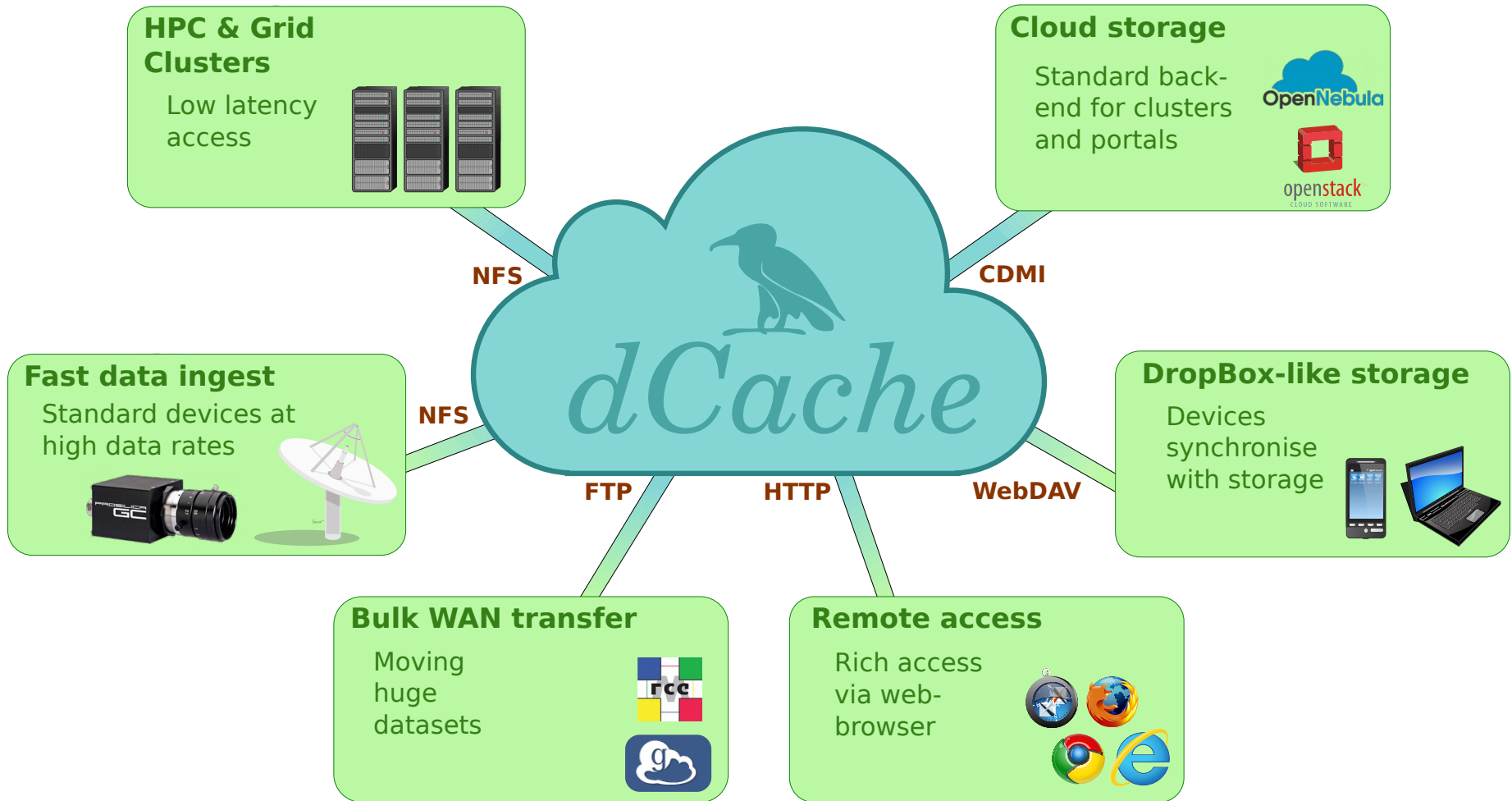
Cloud Services for Synchronisation and Sharing

Zürich, Switzerland.

2016-01-18 – 2016-01-19

<http://cs3.ethz.ch/>

The scientific cloud vision

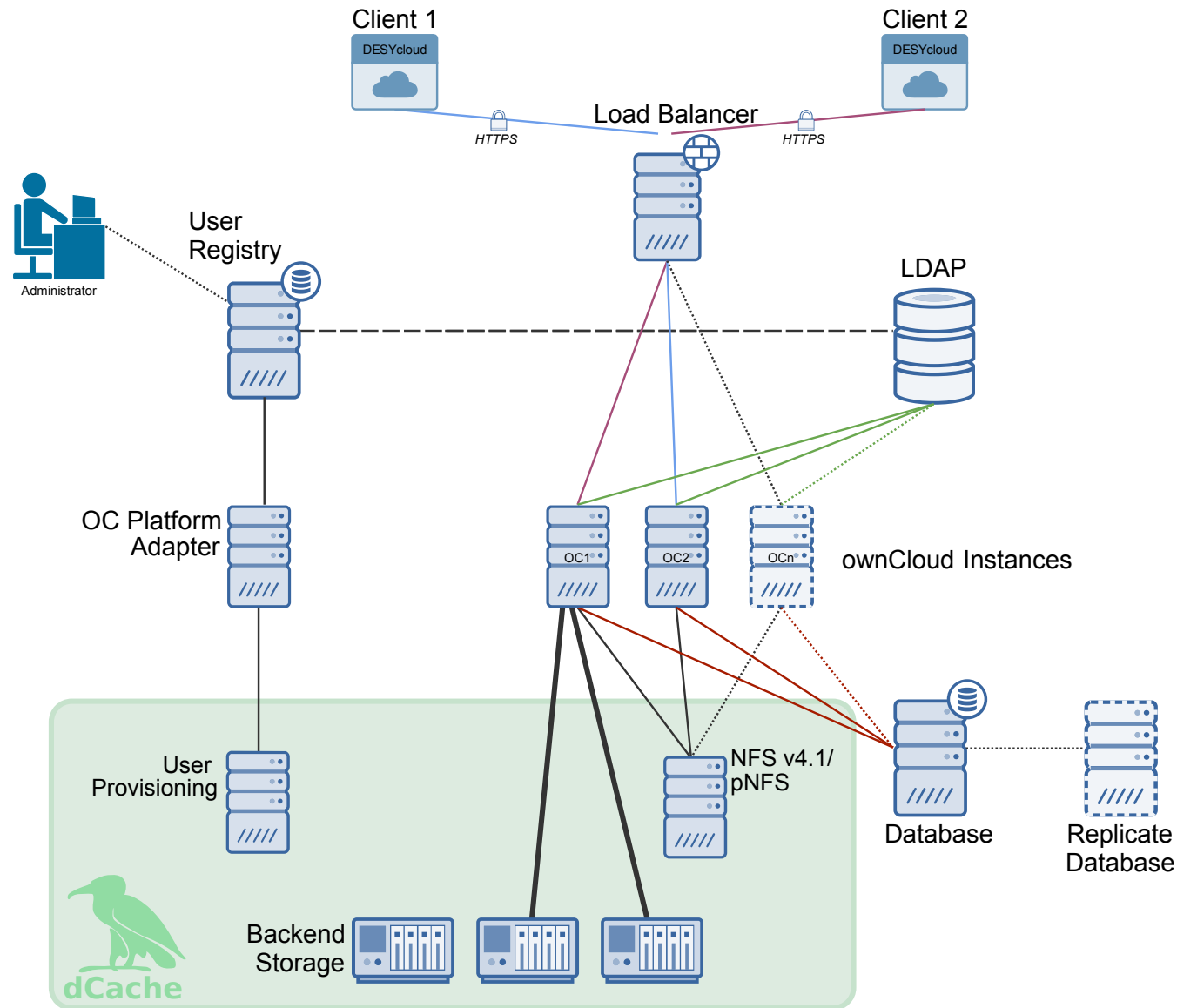


Hybrid solutions: sync-n-share + dCache

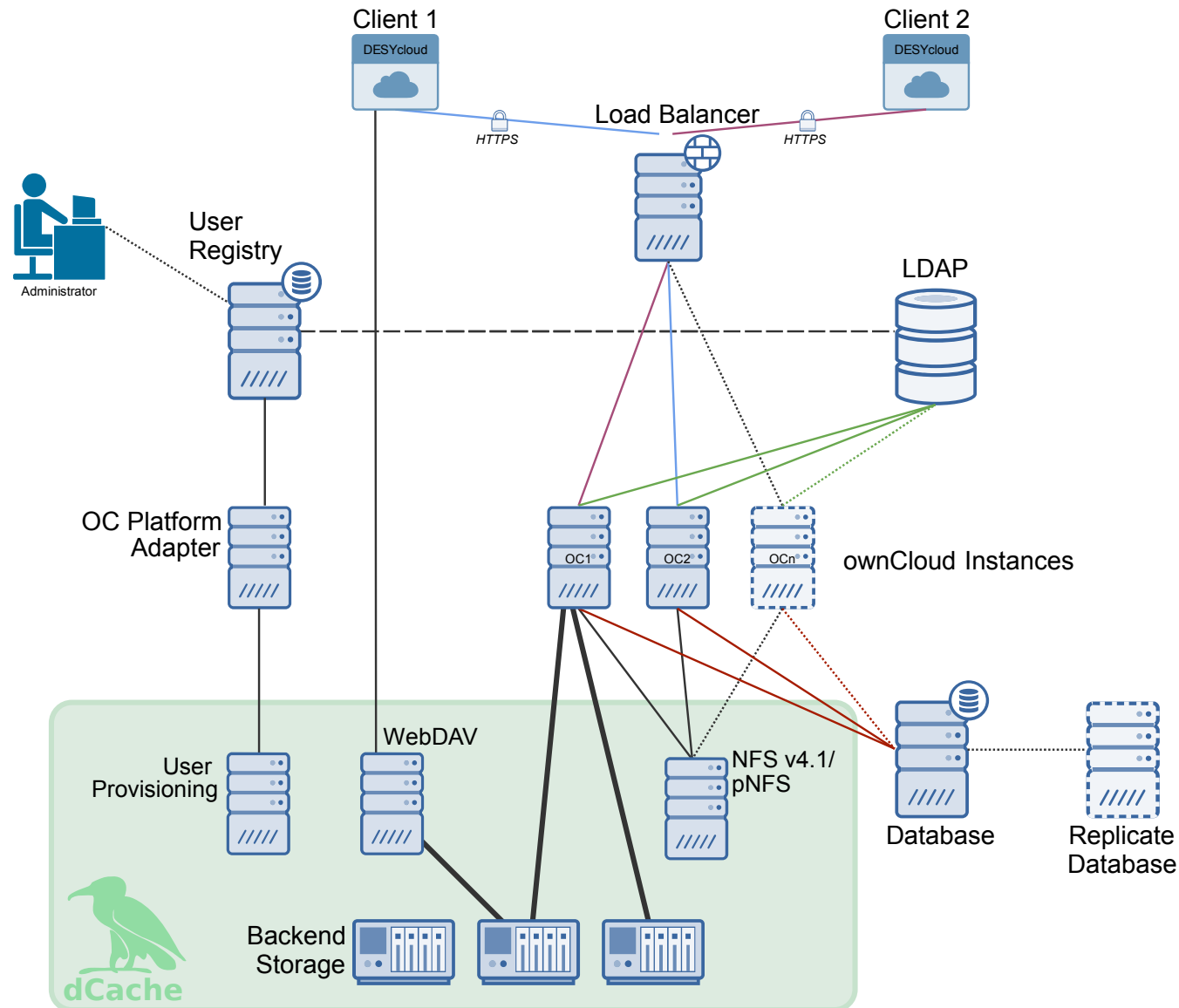
ownCloud & dCache	DCORE & dCache
dCache appears as regular filesystem (NFS 4.1 mounted with pNFS)	Direct integration: DCORE integrating their system with dCache.
Normal open-source contributions	Signed support MoU
File synchronisation via ownCloud front-end	File synchronisation using dCache built-in WebDAV support
n clients → 1 OC-server → m storage-nodes	n clients → m storage nodes
“Infinite” storage capacity: can add more capacity without downtime.	
PiB scalable; multi-protocol support; different QoS support; ...	



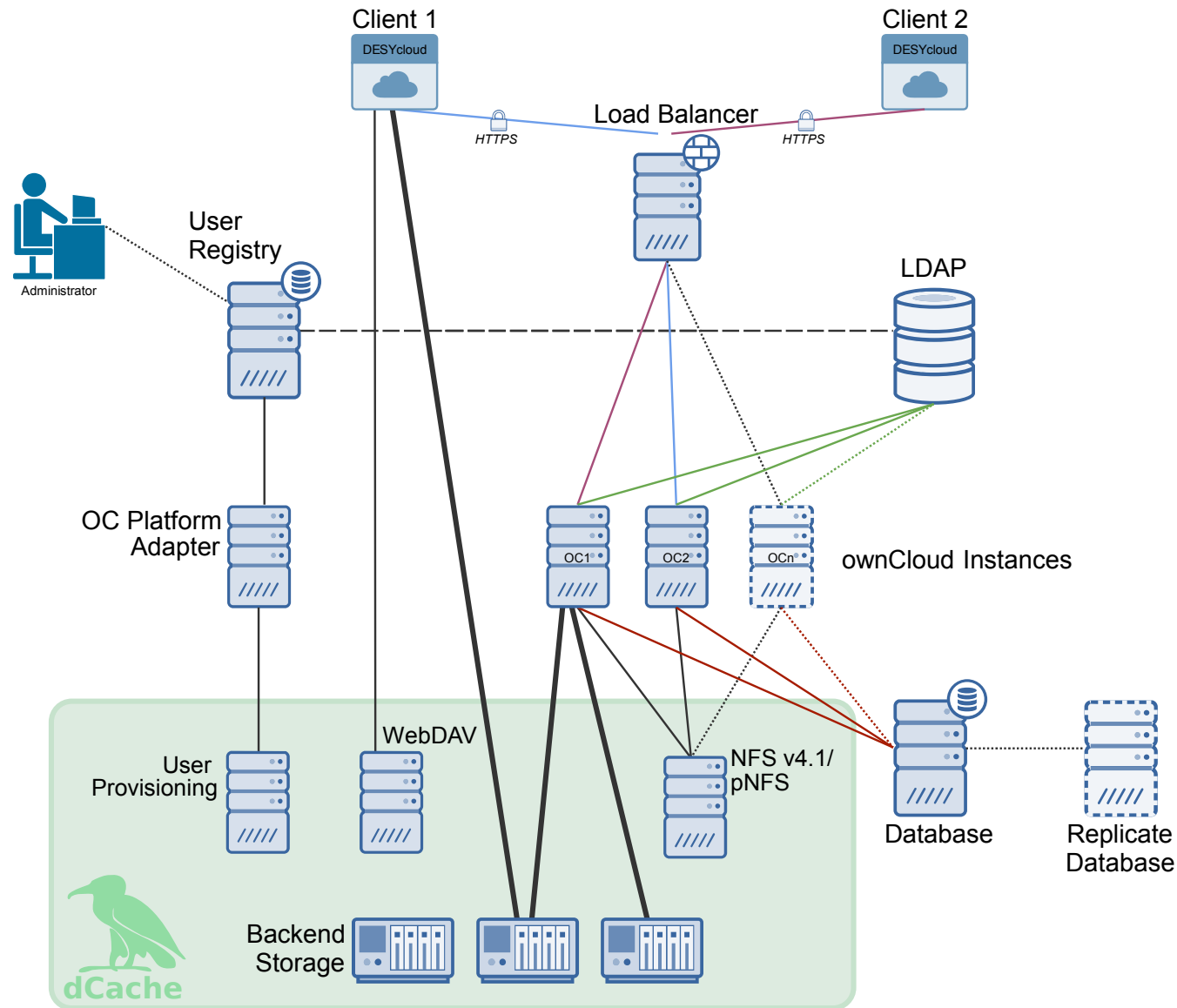
The DESYcloud deployment



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The DESYcloud deployment



Pain-points: processes

- Mixed success at getting patches accepted upstream:

Some patches accepted by not always successful (e.g., bike-shedding, commit ping-pong)

- DESYcloud production is still on ownCloud v7:

We are figuring out how to upgrade, given we are forced to maintain our own patches.

- Unsure how best to collaborate.



Pain-points: ownCloud server

- Chunked uploads rebuilt in temp directory (direct upload and sync)

Need a large temporary area outside dCache, as a result.

- Indexes and thumbnails are not separable from user's data

.../data/<user>/{files,metadata} → .../data/{files,metadata}/<user>
(or have this configurable)

- Difficult to investigate user support tickets:

Many different log files, but no access log file

- Some apps (seem to) modify content with read-modify-write

Are these fixed if an object-store is adopted as primary storage?

- Should we create a dCache backend?

We would need a commitment on API stability.



Pain-points: the clients

> WebDAV:

- Mac OS-X (via finder or cyberduck) uploads files by touch-then-modify (PROPPATCH)

Doesn't play well with dCache

- Gnome 3 (Nautilus) doesn't work well when no quota is enabled

ownCloud / nautilus problem?

> Web-page:

- Slow at deleting when many files are requested,
- Changes not immediate visible: DB-fs-cache vs filesystem?
- Database-filesystem resync broken from directories with large number of files

> Sync client:

- No redirection support: sync-client uploads through ownCloud server.



Future directions:

- Add direct sync-client support into dCache:
 - Support for JSON services: under code-review
 - Support for chunked upload: work started
 - ETAG for sync-discovery: design phase
 - Client support for redirect: not started
 - Share overlay name-space: not started
- Migration to ownCloud 8: currently stalled
- Additional functionality in dCache as needed.

