

## **Federación de almacenamiento**

### Requisitos

- Escalabilidad.
- Apariencia de un único endpoint.
- Federar endpoints/Federación de almacenamiento
- Seguridad.
- Disponibilidad.
- Rendimiento:
  - Velocidad data transfer. Discriminación de mejor redirección en caso en que haya réplica.
  - Peticiones/seg
- Lectura/Escritura.

### Soluciones existentes

- Basadas en federación de endpoints
  - DynaFed
  - OwnCloud
  - Xcache cluster para Xrootd
- Basadas en almacenamiento distribuido
  - EOS
  - dCache

### DynaFed

#### Features

- Aggregate storage and metadata farms
- Exposing standard protocols that support redirections and WAN data access
- To behave as a unique system, unique entry point.
- Building the illusion of a unique namespace

- Be able to accommodate also explicit, catalog-based, indexing.
- Redirection choices have the distance of the servers into account.
- Unique namespace.
- LFN/PFN translation without the need of catalogues.
- Components
  - DMLite: pluggable software that gives abstract functionalities of file catalogue and interface to storage pools.
  - UGR: Uniform Generic Redirector.
  - Memcached.
  - Plugins to the endpoints.

Default Deployment example:

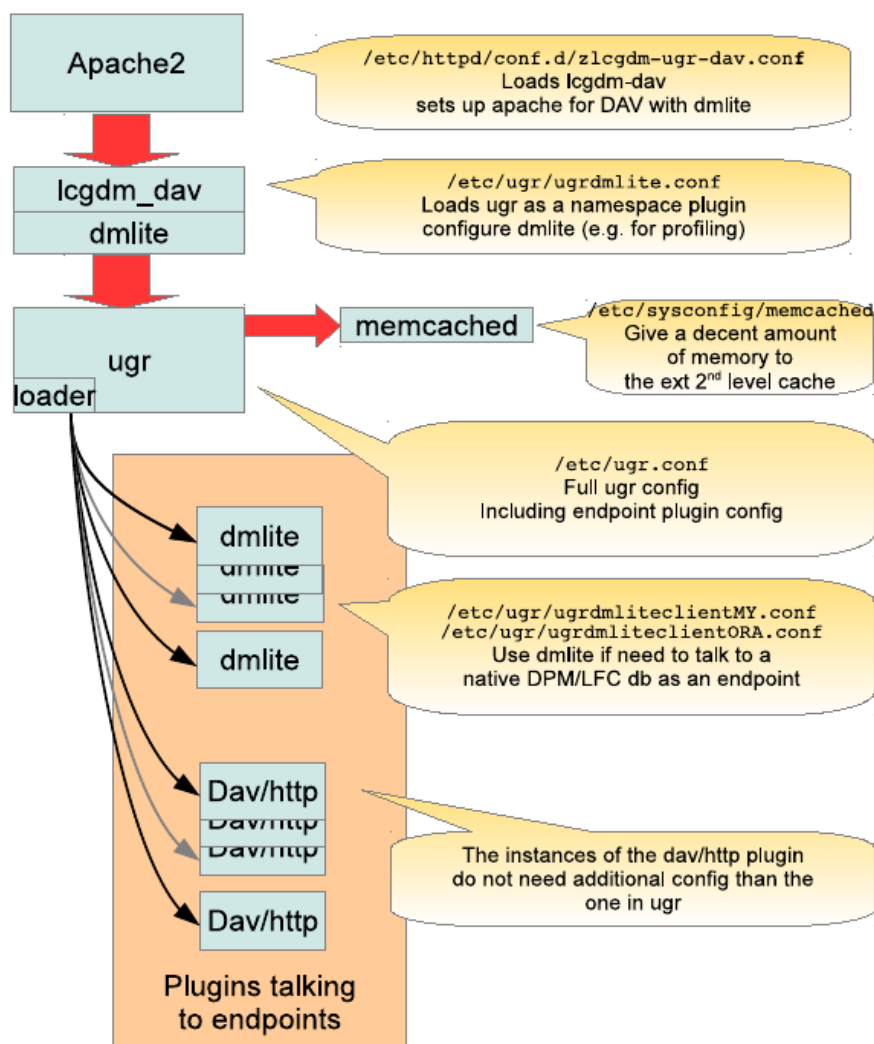


Figure 7: Configuration structure of the typical deployment.

Examples:

ATLAS-Canada, ATLAS-Italy and Belle-II <https://goo.gl/P4mTSo>

Local test <https://pool73.ft.uam.es/myfed>

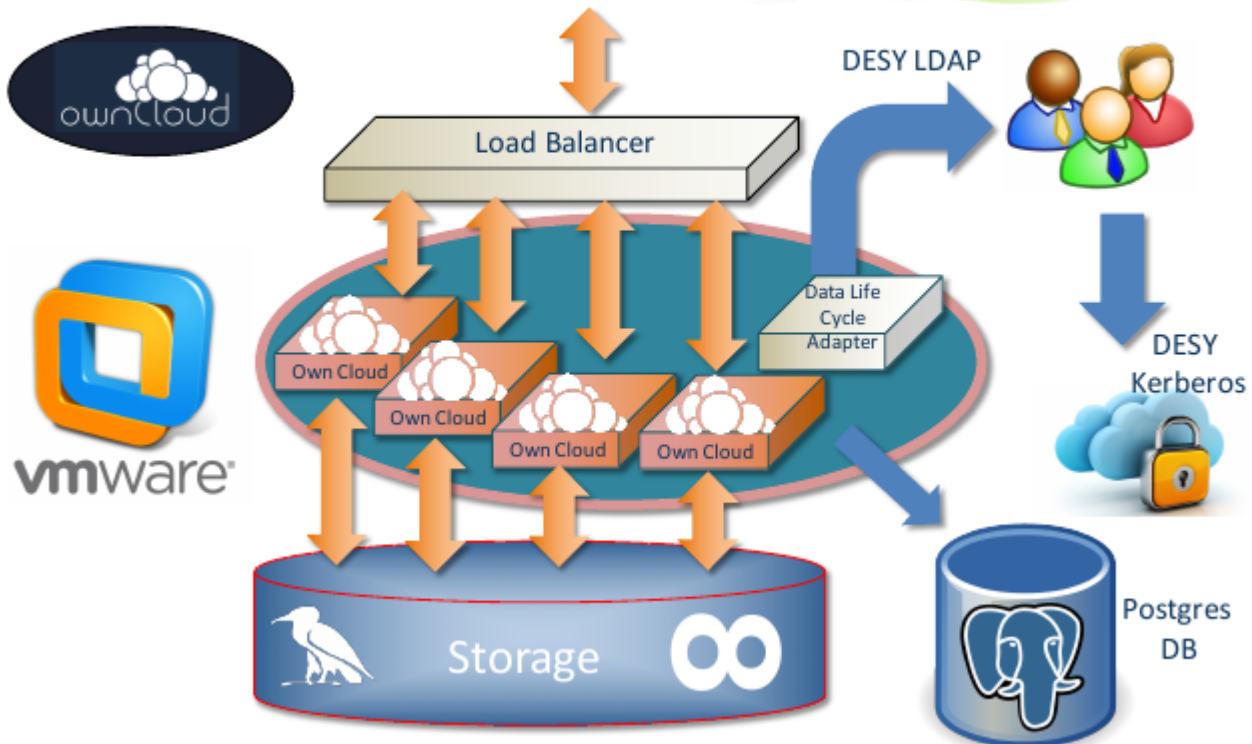
### OwnCloud

- Sync n Share
- Unique entry point
- LAMP stack + owncloud

Example DESY

## The Own Cloud Part

dCache.org 



dCache: sync n share for Big Data at DESY | Hamburg | Patrick Fuhrmann | 9 July 2015 | 37

### Xcache

Xcache with rucioN2N-for-Xcache plugin allows users to access RUCIO managed ATLAS data via metalink.

ATLAS S&C Week June 2017 Valencia <https://goo.gl/pRwUEH>

### EOS/dCache

EOS Components:

- MGM node (namespace node) + MQ
- FST node (storage nodes)

dCache Componets:

- Space Manager + Pool Manager + Metadata (namespace node)
- Pool (storage nodes)

Examples:

- Russian Federation tests on dCache and EOS comparison <https://goo.gl/Yx6Wud>
- Cern+Wigner EOS <https://goo.gl/wbMqRo>