LFC plug-in for EOS

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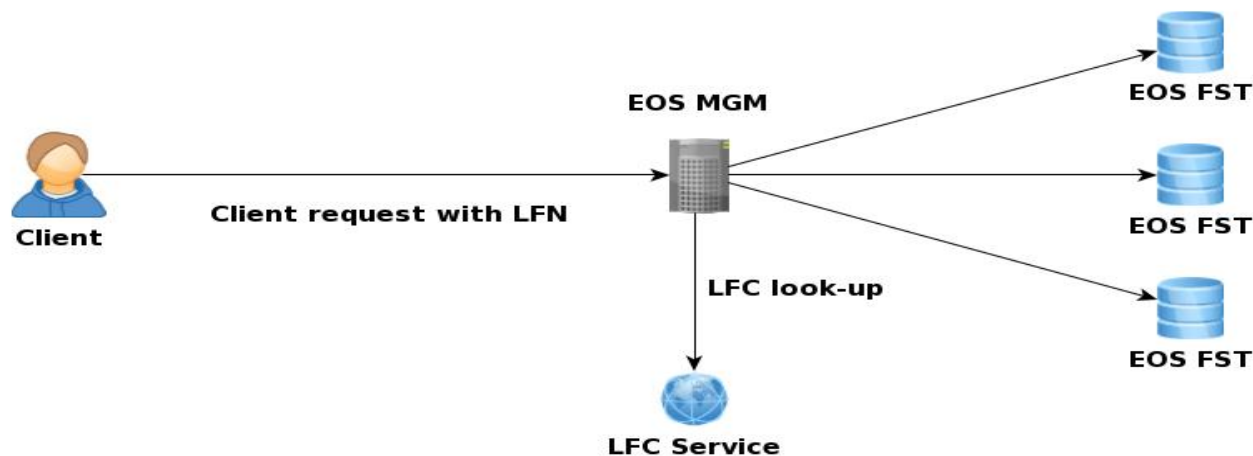
- How LFC works

  - Current use-case

- Integration with EOS

  - Proposed solution

- Conclusions

DSS

- Uses GUID (Globally Unique Identifier) for logical files

- Stores both logical and physical mappings for a file

- Global hierarchical namespace of LFNs is mapped to GUIDs which are in turn mapped to file replicas in storage

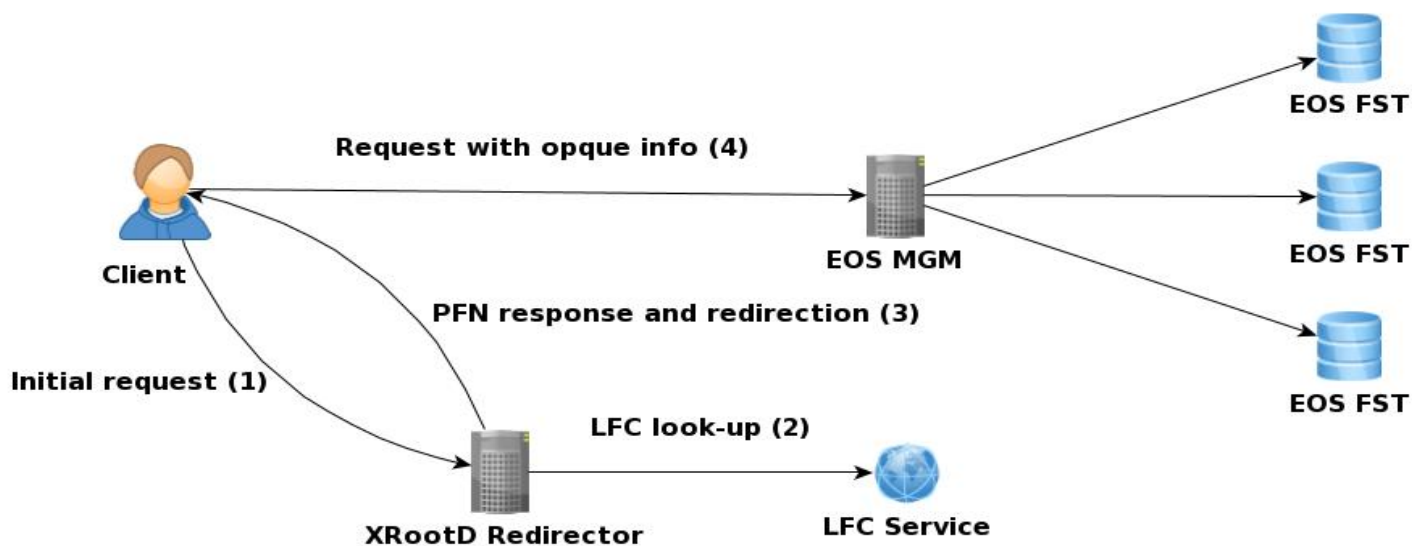- System attributes of files are stored as LFN attributes

DSS

- LFC library

- Dependencies: libgsoap.so, liblcgdm.so, libnsl.so

- **Problem:** XrdProtocol does not allow to modify the path in a request when redirected

- **Goal:** translate logical file names to physical ones and pass this info to EOS

- LFC requests are sent in synchronous mode

- Optionally save mappings in cache

- LFC plug-in runs on XRootD server nodes

- Translates lfn to pfn by extending the class XrdOucName2Name

- Currently implemented as an oss.namelib plug-in
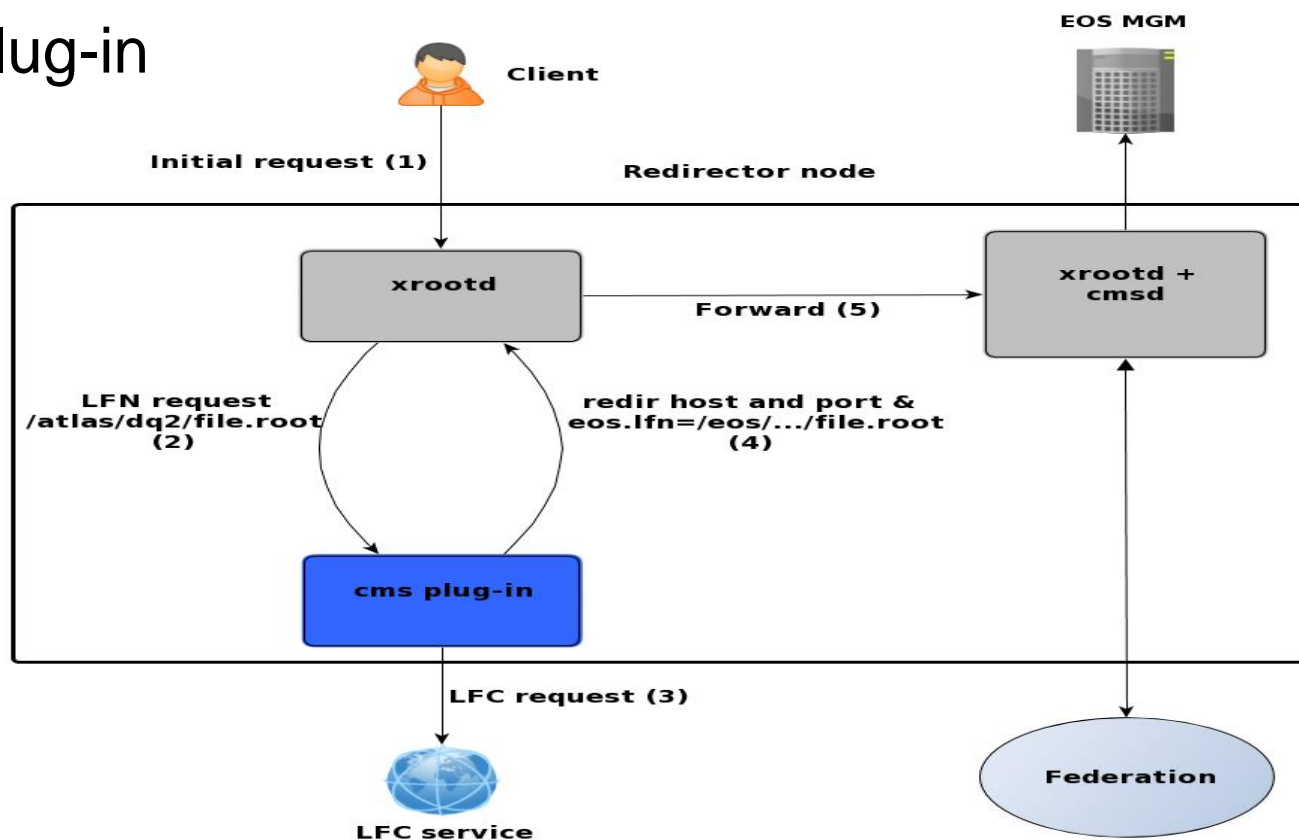
- Using the current model in EOS:

- Design issues

  - High load on the EOS manager node

  - Undermine the MGM's design purpose

  - Not scalable, the MGM becomes the bottleneck

- Performance considerations

  - An LFC query takes ~ 100 – 200 milliseconds

  - If LFC requests get stuck, the MGM is blocked

- Use a **redirector** to do the translation

- Send the PFN as extra opaque information

- EOS MGM takes care of interpreting the **opaque info**

- Created an XrdCmsClient plug-in which does the translation
- The redirector runs a xrootd daemon with the new plug-in

DSS

- New functionality added as an ofs.cmslib plug-in

- By default the xrootd queries the cmsd to find info about the file (if such a XrdCmsClient exists)

- Translation done in the Locate method of the XrdCmsClient – called for each file

- Set redirection host and port as arguments to the library + other arguments

- Specify matching criteria for the query so that it returns only EOS locations

- The plug-in is ready for testing

- It works with the new XrdCl (xrootd client – Lukasz)

- Issue: old xrootd client admin does not forward the opaque information

- Minimal deployment overhead – just add the new library in the configuration file of xrootd

DSS

Questions?