

Any data any where any time

- CMS Part Xrootd -



Main players in CMS:

Giacinto Donvito (INFN Bari)

Brain Bockelman (Nebraska)

Some figures by Daniele Bonacorsi (CNAF)

> Established model

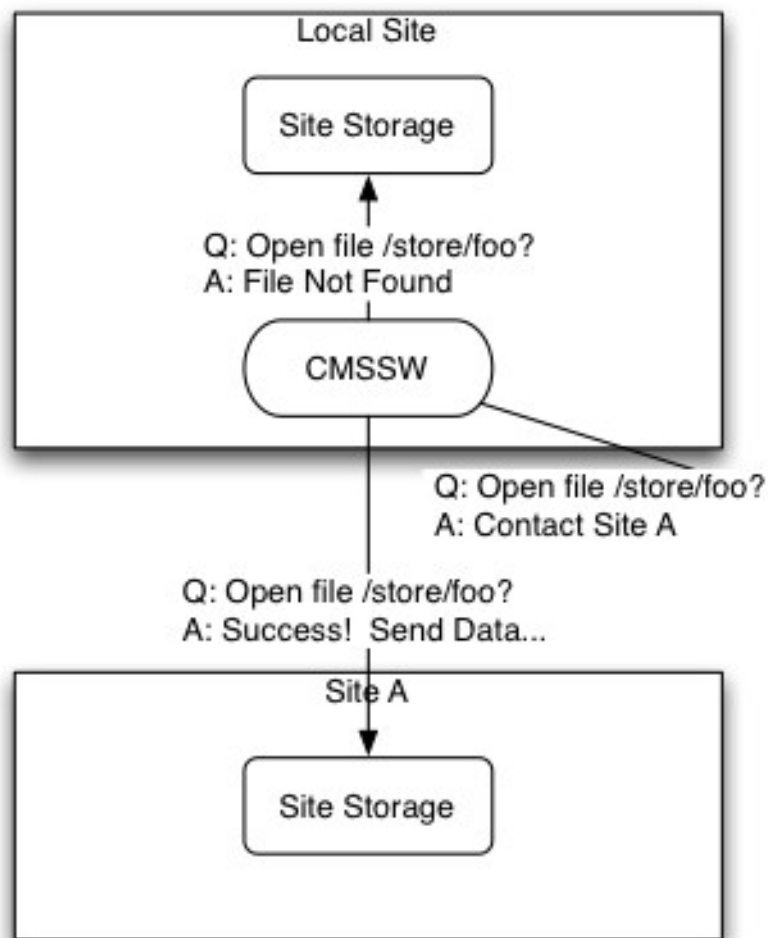
- Send jobs always to the data
- Open files via LAN exclusively
- Jobs fails in case of read error
- Depends on pre-distributed data sets

> Ongoing modifications

- Allow exceptions from the strict model above
- Fall-back case: Open file remotely over LAN if local open fails
- Evaluate “disk-less” (Tier-3) sites

> CMS AAA project

- Any data anywhere anytime
- Based on global XROOTD redirector infrastructure



➤ Supported in CMSSW_3_9_x and later

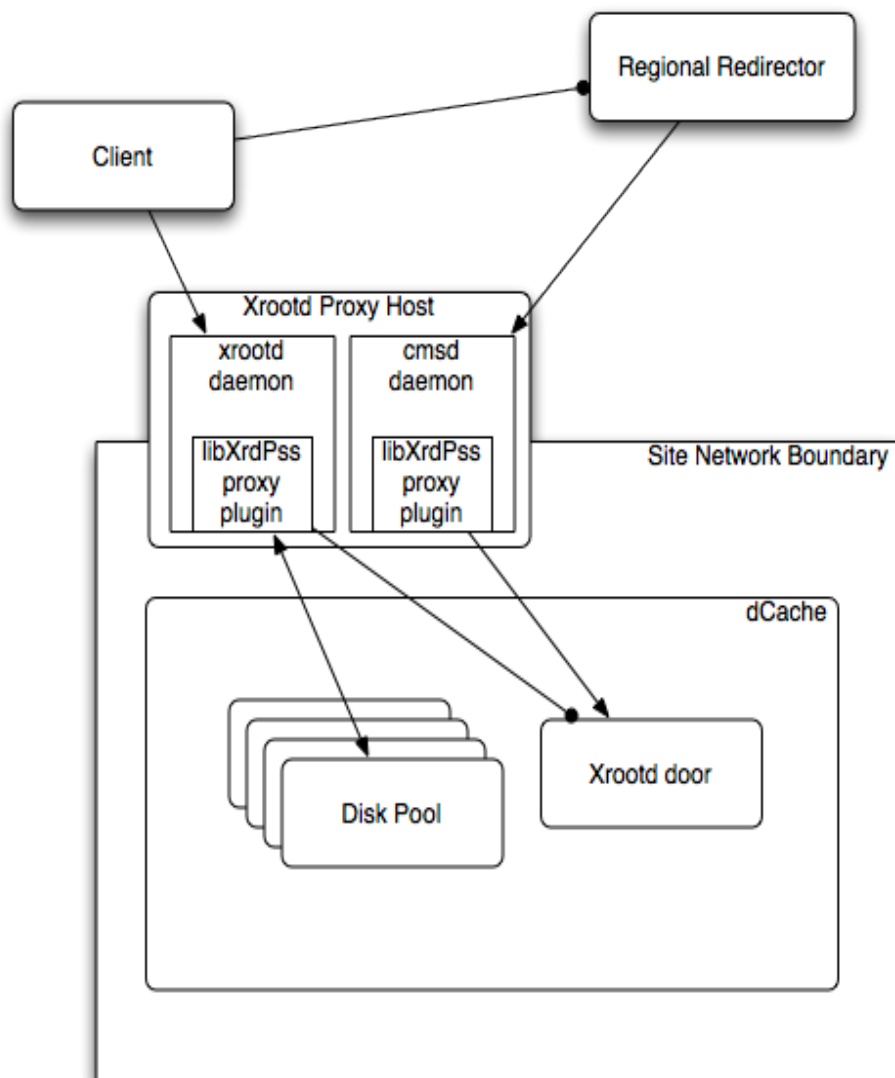
- Fallback configured in site TFC
- Performance penalty small compared to lost jobs

```
<site-local-config>
<site name="T2_DE_DESY">
  <event-data>
    <catalog url="trivialcatalog_file:/path/SITECONF/local/PhEDEx/storage.xml?protocol=dcap"/>
    <catalog url="trivialcatalog_file:/path/SITECONF/local/PhEDEx/storage.xml?protocol=remote-xrootd"/>
    .....
  </event-data>
</site>
```

<!-- remote xrootd fallback via Bari redirector -->

```
<!fn-to-pfn protocol="remote-xrootd"
  path-match="/+(.*)"
  result="root://xrootd.ba.infn.it/$1"/>
<pfn-to-lfn protocol="remote-xrootd"
  path-match="/(.*)"
  result="/$1"/>
```

<!-- End of redirector stuff -->



- All channeled through a proxy
 - Registers with Redirector
 - Mapping CMS LFN → PFN
 - Provided by name2name plugin
 - Connect to D-Cache xroot door internally
- In production at various sites (e.g. DESY, Italian CMS T2s, Imperial, all US Tier-2s [Hadoop])
- Direct integration of D-Cache xroot
 - Difficult – but looked at
 - Cmsd talks to native xrootd via socket
 - No LFN2PFN translation plugin inside D-Cache door