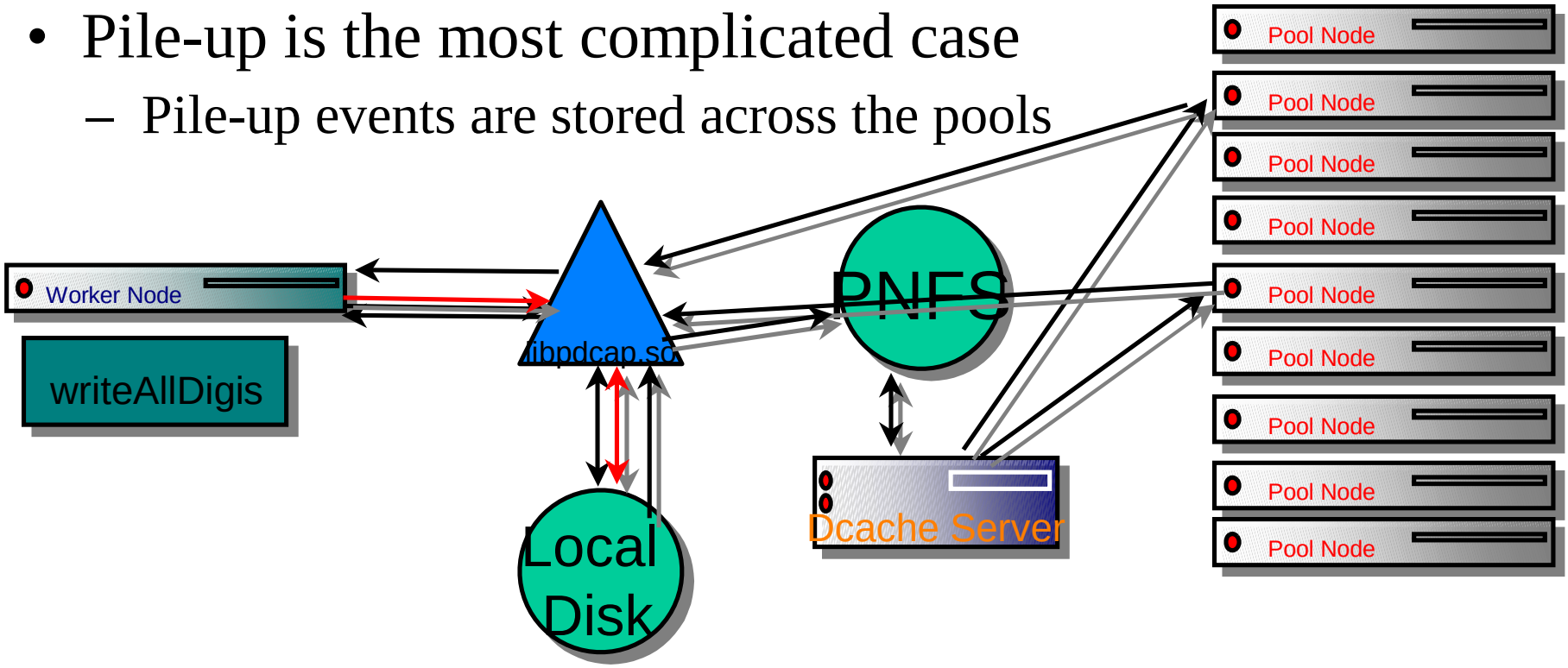
Software Baseline for PCP and DC04

- From the presentation this week we leaned that
  - SEAL design and choices are very close to CMS Frameworks implementations
  - Transition from the current COBRA/Root implementation to POOL seems to be painless
  - Current performances seem to match our requirements at least for simulation/digitization steps
  - Many of the real issues are elsewhere in the computing services
    - Remote file access,
    - deployment of RDBMS services,
    - limitations in the batch environment,
    - …
  - COBRA-7 plus dcache/pnfs provides functionalities and performances in excess to our past objy set-up

writeAllDigis Case

- Pile-up is the most complicated case
  - Pile-up events are stored across the pools



  - Many applications can be running in parallel each writing to their own metadata but reading the same minimum bias ROOT-IO files

COBRA-7/dcache Speed Tests

- CMSIM
  - No measurable difference between fz file Output into d-cache space or local disk space, regardless of load on the cluster
- writeHits
  - If reading fz files from d-cache we see a less than 10% hit in performance as compared to reading from local disk
  - Reading from d-cache and writing everything into d-cache is slow and needs to be understood
    - Lots of small accesses may introduce overhead
- writeAllDigis
  - 43 sec. per event for writing and reading to local disk (2 jobs = 53s)
  - 72 sec. per event reading minbias from d-cache writing to local disk
  - 84 sec. per event reading from d-cache with two processes, one node
  - 86 sec. per event reading from d-cache with 12 processes on 12 nodes

Proposal

- Migration to SEAL
  - Not on the critical path
  - Trivial/easy

    (in many cases SEAL code is CMS code with a different name)
- Migration to POOL
  - Use POOL for PCP and DC04
  - Use root storage technology for all kind of data
    - No rdbms backend
    - Stick to winter mode
  - Investigate a cms-proprietary simple file-format for rawdata

Time Scale

- May 8: Ask LCG/AA full support
  - Negotiate early release of missing feature we need
- June 4: Bill reports in CMS week on integration progress
- June 15: release COBRA prototype using pool usable for simulation and digitization
- June 21: decide to proceed or fallback to COBRA 7 and dcache/pnfs
  - dcache/pnfs makes local xml catalogs obsolete