Database Futures Workshop
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LHCb Databases Present and Future

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Overview

- Introduction
- Database Applications
- Technologies
- Conclusions

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Introduction

- Databases are key parts of the infrastructure
  - Several DB-based applications in use
- LHCb doesn't have DBAs
  - Physicists acting as DBAs
  - Use available services

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Database Applications

- Two categories
  - Internal
  - External
- Internal
  - Developed and maintained by LHCb
- External
  - Back-end of services
- Categorization a bit artificial in some cases
- No new applications planned
  - Development to improve existing apps.

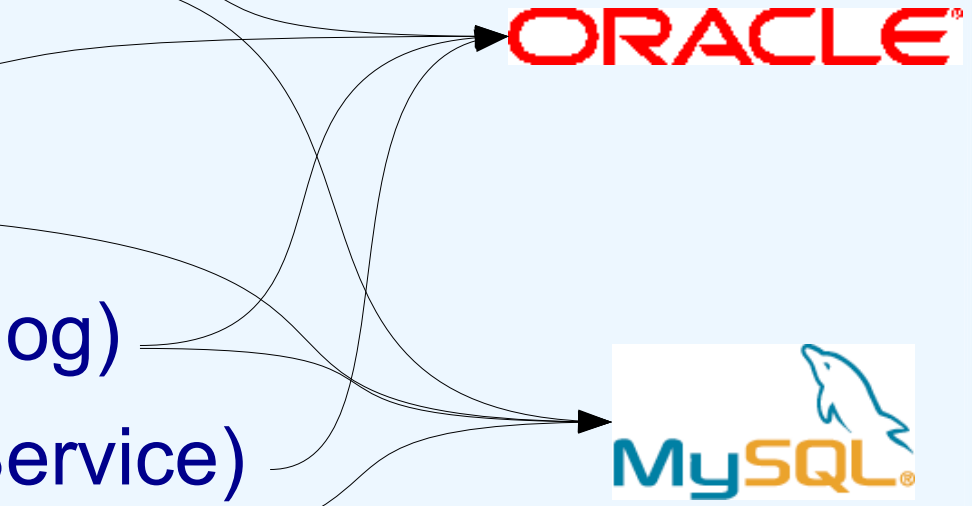
DB Apps - Internal

- Tag Collector (SQLite)
- Run
- Configuration
- Histograms
- Bookkeeping
- Shift
- Problems
- Hardware
- Radiation
- Traceability

Oracle

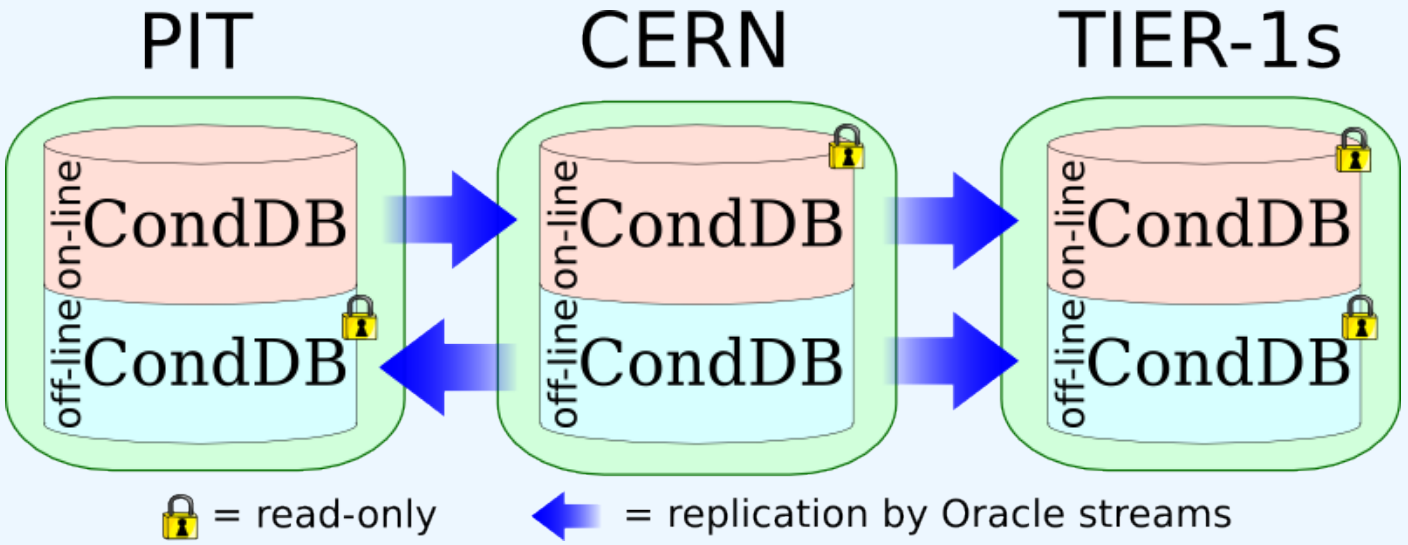
DB Apps - External

- Conditions (COOL)
- PVSS
- DIRAC
- LFC (LCG File Catalog)
- FTS (File Transfer Service)
- Drupal



Conditions Database (COOL)

- Multiple back-ends (CORAL)
  - Oracle
  - SQLite
  - FronTier (under investigation)
- Oracle replicated to Tier-1s via Streams



Tag Collector

- Web-based application
- SQLite back-end (via Python ORM library)
- Plans to migrate to another technology
  - Oracle not supported by the library
  - MySQL not supported by CERN

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Current Technologies

- Oracle
  - Good service from CERN (streams etc.), forced choice
- SQLite
  - Easiest set-up, prototyping, distribution
- MySQL
  - Required by some third party applications
- FronTier
  - To be adopted to improve access to Oracle

What we need

- Oracle support
  - We cannot and do not want to migrate current applications
- MySQL (PostgreSQL) support
  - We use MySQL-based services
  - Open source tools rarely support Oracle
- Development Tools for web apps
  - Our developers are not DB experts

Conclusions

- No DBAs
  - don't speak PL/SQL
  - prefer pre-cooked solutions
- Oracle
  - sometimes it's a limitation
- NoSQL
  - we speak a bit of SQL, why something else?
  - no new DBs planned
  - official CERN support would be required