

Introduction to Databases Discussion

Murrough Landon – 13 November 2003

`http://www.hep.ph.qmul.ac.uk/~landon/talks`

Overview

- Databases in ATLAS
- Configuration Database
- Conditions Database
- TC (installation) Database
- Databases in L1Calo

Databases in ATLAS...

“Lets try everything (except Objectivity)”

- A database for everything and everything in a database
- Production databases for each (sub)detector
- Technical Coordination installation database(s)
- Online configuration and bookkeeping databases
- Offline calibration/conditions databases (for each detector)
- Event store
- Many different choices made – problem of exchanging data
- Buzzword bonanza: ConfDB, CondDB, OKS, DAL, OBK, MySQL, Oracle, Lisbon API, LCG, ROOT, POOL, NOVA, IoV, TES, StoreGate, RDO, Bytestream converter, Blob, XML

Configuration Database

Configuration of the Online system

- Provided by TDAQ/Online group
- Describes partitions, software and hardware
- Access (read only!) via “data access library” (DAL)
 - Database schema evolving
 - DAL radically different in latest Online release
 - L1Calo has extended the previous DAL
 - Some (considerable?) work to migrate to new style...
- Archiving/recovering separate from “conditions DB” – **why?**

Conditions Database

Non-event data needed offline

- Calibration, monitoring, (some) configuration data
- Data stored by Offline and Online programs
- Primarily write-only – starting to think about read access from Online
- Proposed not to store all Online configuration information – **why?**
- Prototype implementation (“Lisbon API”) used in test beam
- Many discussions about future/final implementation: common LHC wide scheme – LHC Computing Grid (LCG) implementation via POOL/ROOT using separate “Interval of Validity” (IoV) database?

TC (installation) Database

Everything down the pit

- TC needs to record every separate item installed in ATLAS (legal responsibility for safe disposal later)
- “Equipment passports”: item type, location and movements
- Commercial database – no access (even read only) for the rest of ATLAS software – at least at the moment

Databases in L1Calo

What we have done

- Offline: nothing (as far as I know)
- Online: quite a bit actually
 - Online ConfDB extended to implement things we needed but which they didnt provide
 - Specific module classes, firmware, cables, run types
 - Prototype calibration datasets, trigger menu
 - Some parameters available via run control IGUI
- Mods to Online ConfDB will need to be migrated following recent changes to ConfDB
 - not sure when is a good time
 - almost certainly required for 2004 test beam
 - but reluctant to do too much before final structure is clearer