



Oracle Databases in ATLAS

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Data and Metadata

ATLAS stores in Oracle databases several data and metadata with very different origin, lifetimes and access patterns

- Run configuration and conditions data are loaded to the online DB and then exported offline:
 - Configurations loaded to front-end processors
 - Detector conditions measured during run time
- Geometry, calibration and alignment data are loaded to the offline DB and exported online:
 - Constants used for event processing at Trigger, Simulation and Reconstruction level
 - Also detector noisy and dead channels computed online and offline
- Other status flags are computed offline and only used offline:
 - Detector quality flags, LHC luminosity etc.
- The ATLAS Distributed Computing (ADC) tools use Oracle databases to store at high rates information on data being processed or stored around the world
 - ProdSys/PanDA for workflow, task and job definition and status
 - Rucio (DDM) for dataset and file status, locations, replicas etc.
 - COMA and AMI for conditions and dataset metadata respectively
- In Run1 ATLAS had an event metadata catalogue (TAGDB) in Oracle format
 - Will be replaced by the new EventIndex for Run2 in Hadoop

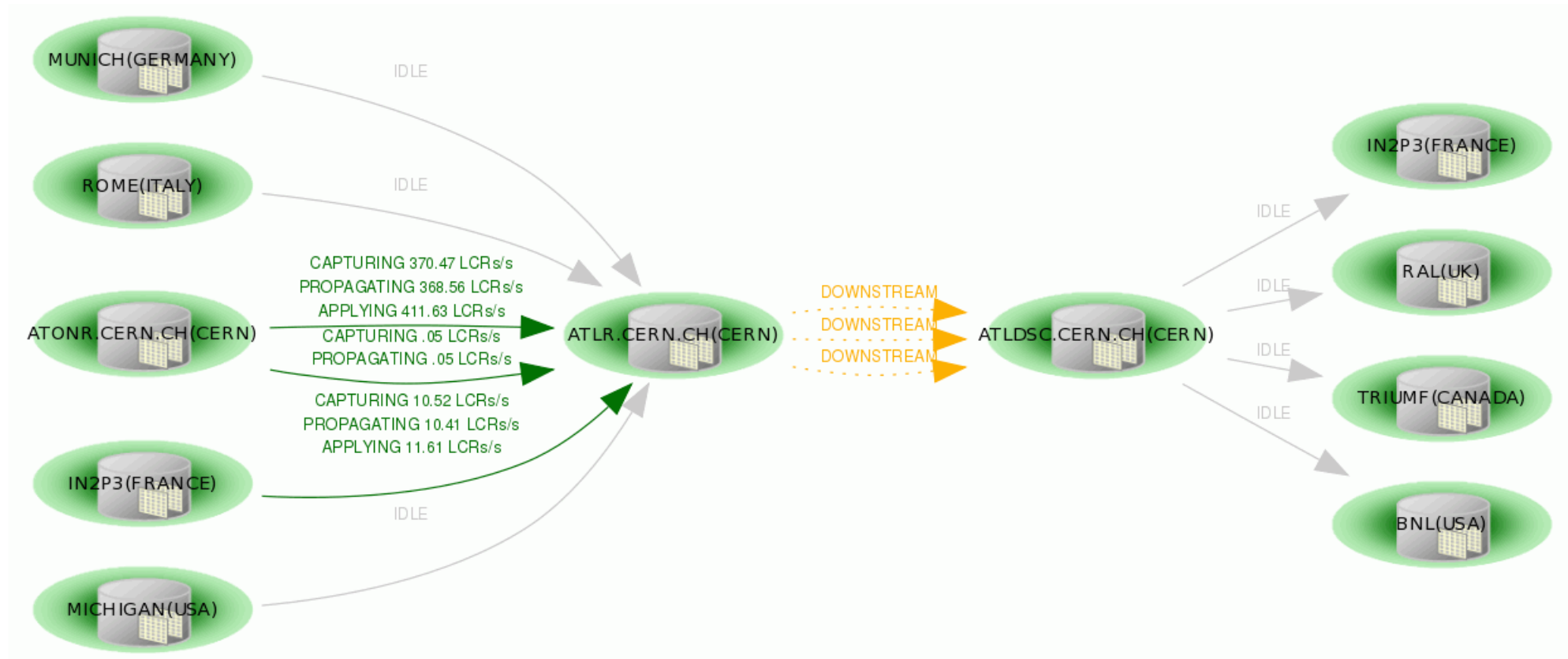


Databases and Access

- ATLR is the offline database for conditions data (and a few other bits and pieces)
 - Write access for the authorised people only
 - Read access through the Frontier web service
- ATONR is the online database
 - Accessible only from Point-1
- ADCR is the database for ADC tools
- ATLARC contains the TAGDB and also archives little-used other data
- Replication of data takes place between ATONR and ATLR
- Conditions data in ATLR are replicated also to RAL, IN2P3CC, BNL and TRIUMF for resilience and to distribute data access from Grid jobs
 - Read access should only happen through the Frontier web service



Offline Replication



Over to Gancho!