Oracle technical update for CERN physics services

CERN openlab II quarterly review
9 October 2007

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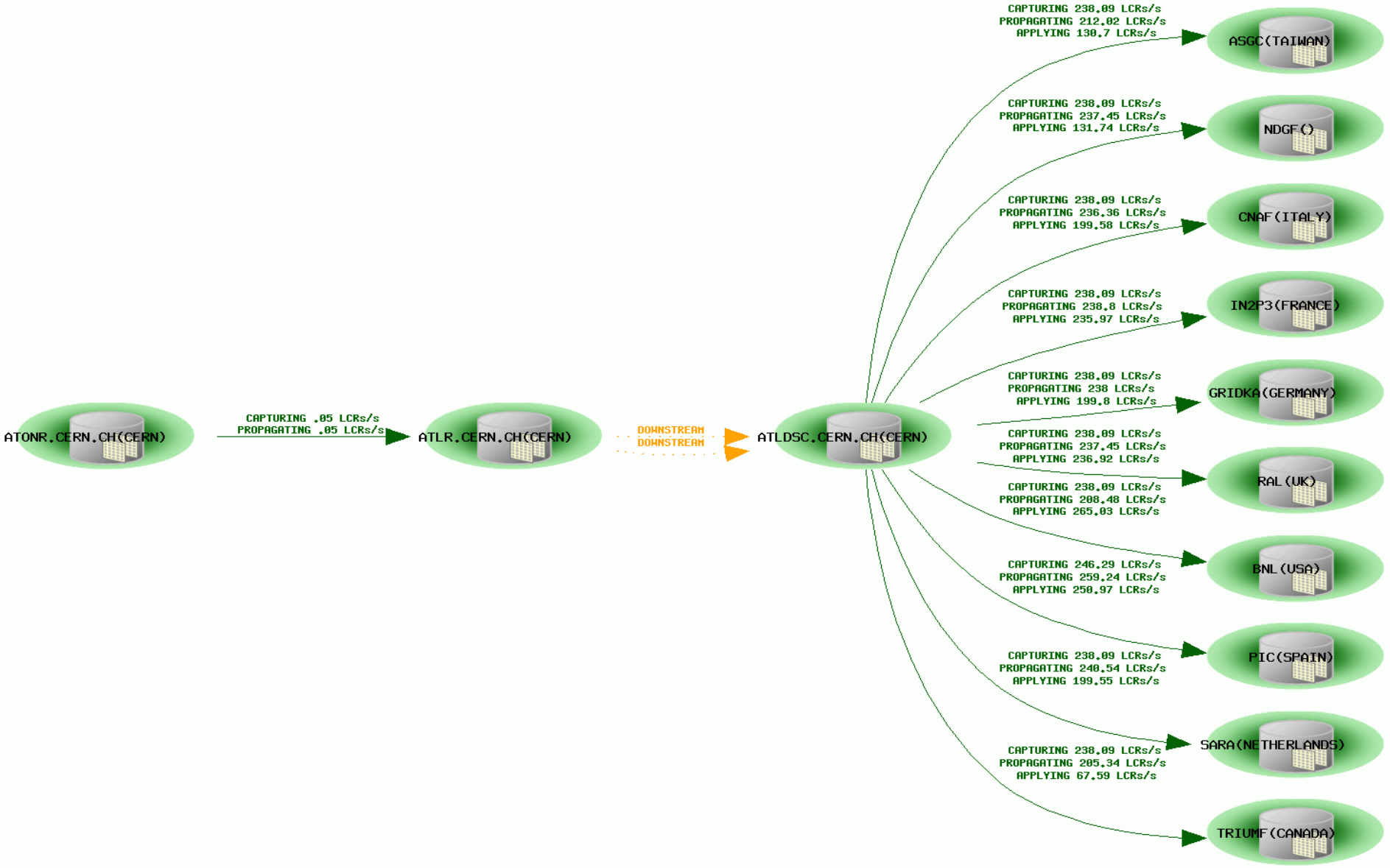
Overview

- Experiment setups using Downstream capture
- Recovery workshop
- Streams optimizations
- Streams Monitoring tool: new features
- Oracle RAC Deployment & Applications
- RAC Monitoring & Oracle Enterprise Manager

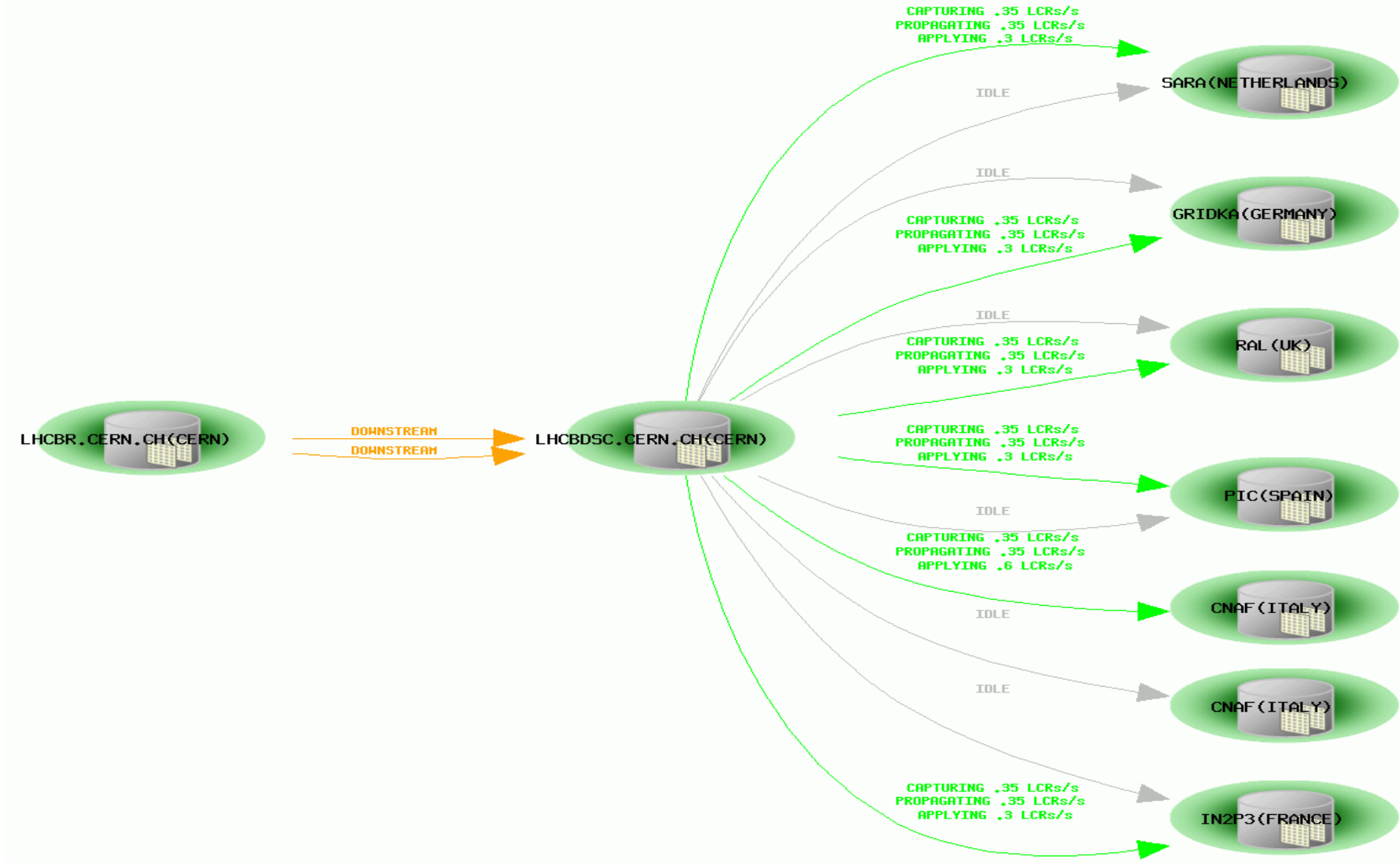
Experiment setups using Downstream capture

- ATLAS
  - Online --» Offline --» Tier1 sites
  - Real-Time downstream capture
  - http://itrac315.cern.ch:4889/streams/experiments?exp=ATLAS
  - Planned: Connect ATLAS muon sites
- LFC and LHCb
  - Offline -- » Tier1 sites
  - LFC: Real-Time downstream capture
  - LHCb: Archive log downstream capture
  - http://itrac315.cern.ch:4889/streams/experiments?exp=LHCb
  - Planned: Online --» Offline
- Hardware and license review
- 3D service review to improve availability

ATLAS Streams Setup



LFC and LHCb Streams Setup

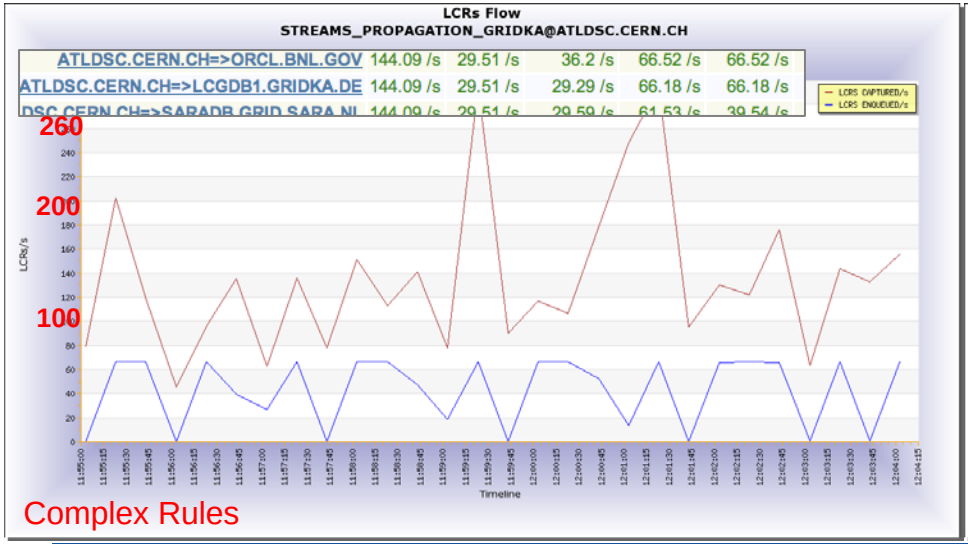


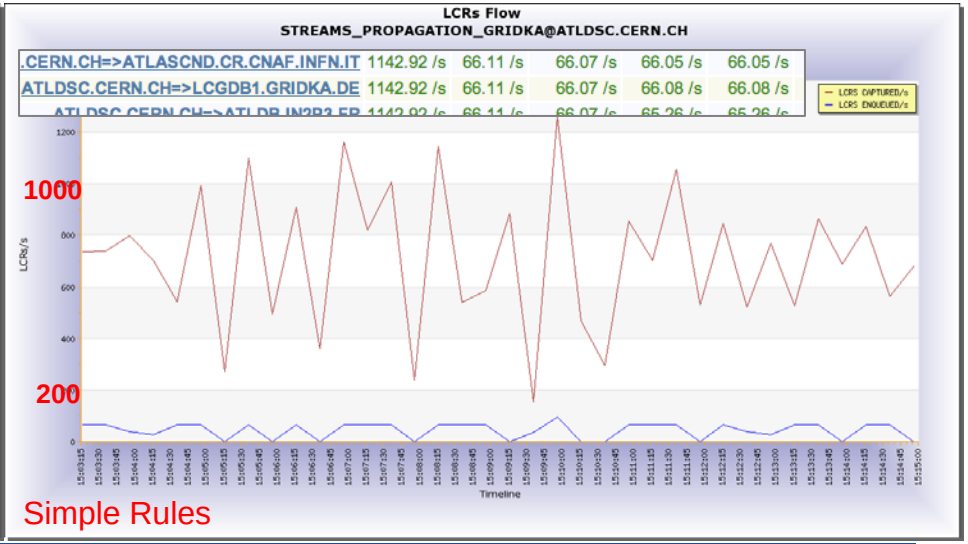
Recovery workshop @CNAF

- Objective: practice recovery scenario and re-synchronization using Streams
- Used Atlas Streams setup: 10 destinations
- 4 destination sites performed recovery:
  - BNL, IN2P3, GridKA and NDGF
- 6 destination sites were up during the exercise
- Recovery exercise successful
- Streams re-synchronization successful

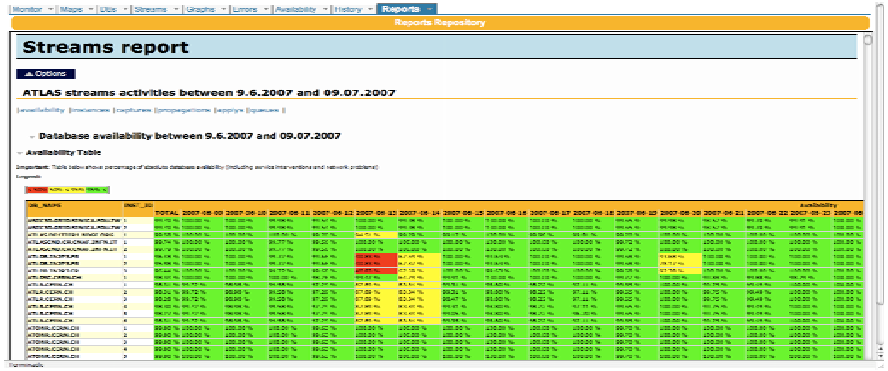
Streams optimizations

- Tuning capture parameters
  - retention time and checkpoint frequency
- Using Rules (ATLAS)
  - Rules on the capture side caused more overhead than on the propagation side
  - Complex rules converted to simple rules

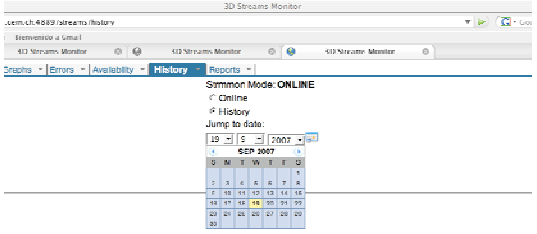




Monitoring tool: new features



- Reports
  - Streams activity per experiment
    - Databases availability
    - Database instances statistics
      - Redo generation, CPU usage, Streams pool usage
    - Streams processes statistics
  - http://itrac315.cern.ch:4889/streams/report



- History
  - Review “past” Streams status
  - http://itrac315.cern.ch:4889/streams/history

Zbigniew Baranowski

Oracle RAC Deployment & Applications

- Investigating **Recyclebin usage** in a production environment
  - streams issues encountered – some resolved by custom DDL handlers
  - automatic purging jobs installed on production machines
- **Load balancing tests** in RAC environment
  - tested many load balancing scenarios – there's no way to force even distribution of “fast” connections across nodes in a RAC on per service basis
- **PVSS & Streams**
  - custom DDL handlers needed for some PVSS functionalities
  - more performance tests, achieving satisfactory results
  - new PVSS versions being tested

RAC Monitoring & Oracle Enterprise Manager

- **Oracle Enterprise Manager**
  - target cleanup campaign: obsolete targets removed, all PSS targets were grouped into systems and then into appropriate groups (defined together with Chris L.)
  - OEM dashboard functionality for systems evaluated
  - agent pull installation fixed and tested with new OEM setup and also with 64-bit machines
  - new version of OEM Command Line interface evaluated
    - prepared internal procedures for target grouping
  - cleanup campaign of policy violations for all PSS targets (in progress due to some OEM bugs)

- Further development of **RAC monitoring** software used for PVSS service monitoring

Quarterly Summary

- **Oracle Streams and Data Replication Services**
  - Single Point of Contact: E. Dafonte Pérez (CERN) - G. Kerr (Oracle)
  - Participants: Patricia McElroy (Oracle)
- **Streams and RAC monitoring**
  - Participants: Z. Baranowski, D. Wojcik
- **Oracle Enterprise Manager**
  - Single Point of Contact: C. Lambert (CERN) - A. Bulloch (Oracle)
  - Participants: D. Wojcik
- **Highly available database services based on RAC/ASM**
  - Procedures review, RAC monitoring, Data Guard tests
  - Single Point of Contact: D. Wojcik (CERN) - G. Kerr (Oracle)