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**Oracle's Activity in openlab II:  
2006 Achievements and 2007 Plans**

**Monica Marinucci**  
EMEA Oracle in Research & Development Programme Director



# From last year's kick-off



2006

- To continue support LCG project and CERN related activities
- To further investigate vendor technology in a scientific, cutting-edge environment
- To strengthen collaboration through the whole stack of Oracle technology
- To outline future trends and requirements

**ORACLE GRID**

Oracle Enterprise Manager

Oracle Middleware & Applications

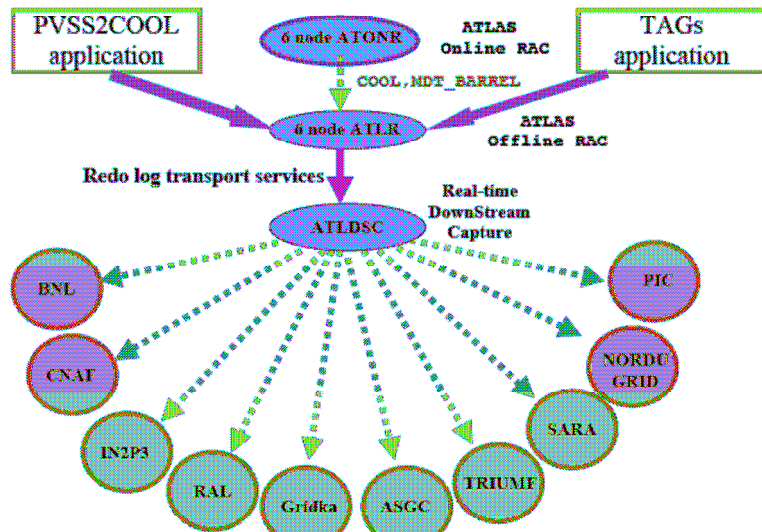
Joint Software Testing Programme

openlab II , 2006-2008

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## ATLAS Online Database, T0 and T1 Architecture - full production in autumn 2007



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## 2006: Streams and Data Replication for LCG2



- Configure the environment to replicate data to the Tier1 sites.
  - Install, Configure and Operate
  - Backup / Recovery
  - Monitoring
  - Site Outages

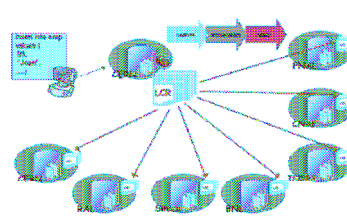


Figure 3: Database Replication with Oracle Streams

- Performance & Throughput testing.
  - Tests used both simulated and real-application workloads.
  - Over the course of the year a near doubling of throughput capability was achieved through Streams, RAC, Network and Application tuning



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## 2007 Activity



- Focus on:
  - Further Testing
  - Service Rollout
  - Throughput Optimisation
- Review additional Oracle technologies to determine suitability for the full range of CERN applications:
  - Transportable Tablespaces
  - Logical Standby



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## RAC / ASM / DataGuard



- Integration and Roll-Out Activity
- Some notable milestones:
  - RAC and ASM use is now common with the physics applications. RAC is the default configuration for LCG databases.
  - DataGuard was used to successfully migrate to new and expanded hardware platform. 60 new DB machines and 60 new storage arrays.
  - Plans to publish this Migration Success Story
- 2007 H1 Plans
  - Continue to study Dataguard Automatic Failover for use with CERN applications

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## Application Design for Development & Scalability on RAC



- Considerable effort to review the scalability of PVSS.
  - Tuning results:
    - Start : 100 Changes / Sec
    - Achieved : 150,000 Changes / Sec
- Results to be published in a paper.
- Looking to incorporate lessons learned in other applications.

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## Oracle Enterprise Manager



- **Formally in the PoW as of 2007**
- **CERN is part of the *Strategic Customer Programme***
  - Assisted with resolving issues as they arise with EM deployment in CERN
  - Provided escalation of bug fixes as required (Agent-AQ interaction)
  - Provided feedback to development of emerging CERN requirements (SLM, AQ/Streams, Dashboards, Beacons)
- **2007 Plans:**
  - Continue to capture emerging CERN requirements
  - Work with Chris/CERN to develop OOW2007 proposal
  - Provide support and assistance with cross-platform EM migration for development of monitoring service

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## Joint Software Testing Programme (JST)



- Goal is to test very early releases of new database software
- **Benefits**
  - for CERN is much earlier access to new code and direct contacts to development
  - for Oracle is additional testing and feedback at early stages

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## JST Status



### 2006 Achievements

- Successful testing of next version of Oracle Database since April 2006
  - Several new features have been tested
  - Comparison to current production releases
  - Many bugs identified and fixed

### 2007 Plans

- Continuing test of more features in coming Oracle version
- Testing features scheduled for later Oracle releases
- This is continuously ongoing work

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## openlab II so far ...



### Programme of Work

- Grid Technology, RAC / DataGuard/ ASM, Oracle Enterprise Manager
- JST
- Technical Reviews

Technology Results

### Joint Events

- Speaking Opportunities (EGEE, User Forums, 3D workshops, First, ...)
- Sponsorships (EGEE06, T. Buikding, ...)
- Executive M-
- Advi- ... (CAB, OEAC, ...)

Visibility and Success Story

### New Opportunities

- Workshops (Oracle thematic ones, ETICS, ...)
- Related Initiatives
- Synergy

Future

### Outreach

- Reference Visits and Calls (5) + Mention Requests (>10)
- Press Releases (4)
- Articles (oracle.eu, ...)

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# Collaboration Strengths



- Tight, Trusted and Long-Term relationship
- Regular Exchange
- Direct Link to Development
- on-site regular presence
- Planning Forum
- Workshops

CERN openlab  
is  
the **framework**  
and  
the **enabler**

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## Thank you!!!



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  - Reinaud Martens'
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- Development:
  - Bjorn Engsig
  - Andrew Bulloch
- Team
  - Graeme Kerr
  - June Farmer
  - Account Team

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