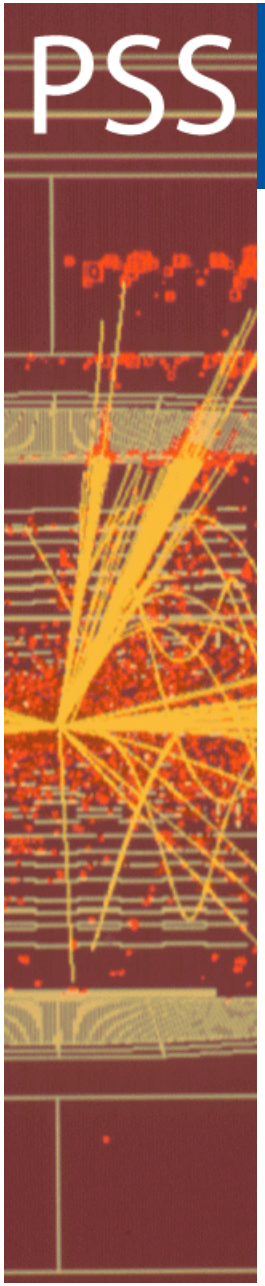

PSS Physics Services Support

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Oracle STREAMS
for database replication in LCG
update

Eva Dafonte Pérez

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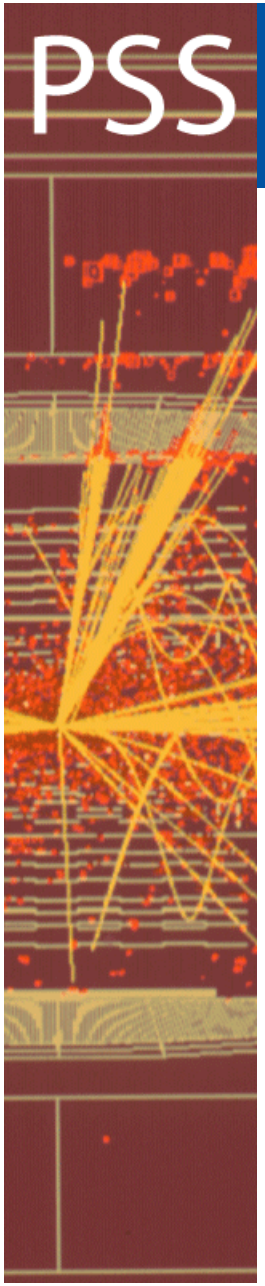

Agenda

- Streams Optimizations
- Downstream Capture
- Sites status
- Streams monitoring
- Open Issues

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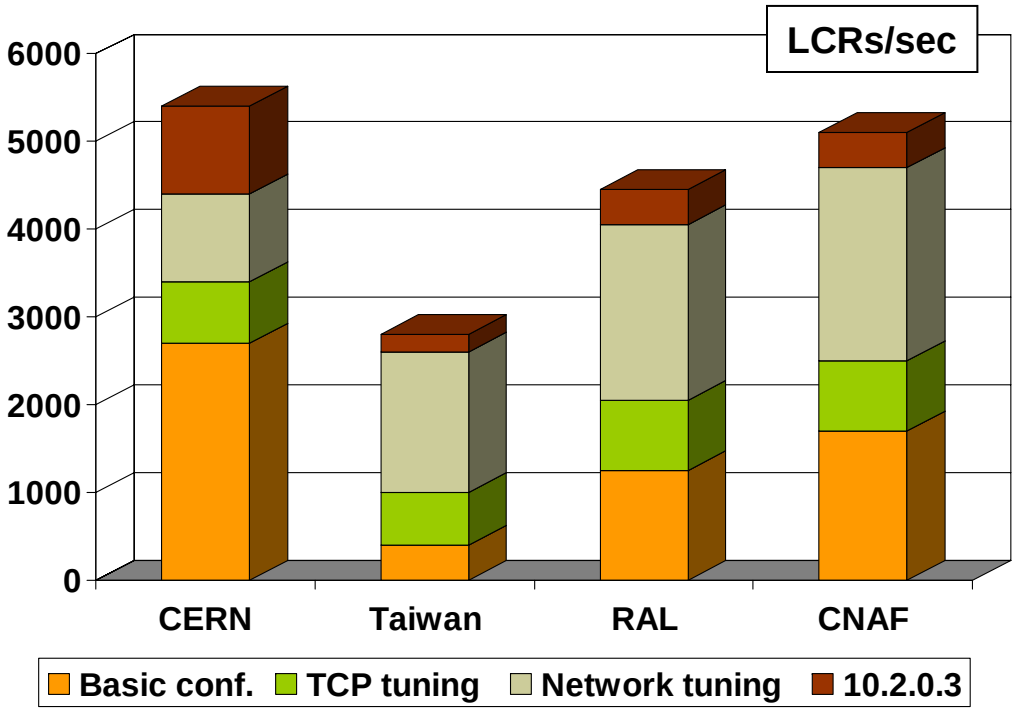
Streams **Optimizations**

- TCP tuning
  - need to adjust system max TCP buffer
- Network tuning
  - DEFAULT_SDU_SIZE=32767 and RECV_BUF_SIZE and SEND_BUF_SIZE = 3 * Bandwidth Delay Product
  - Reduce the Oracle Streams acknowledgements
- Oracle 10.2.0.3



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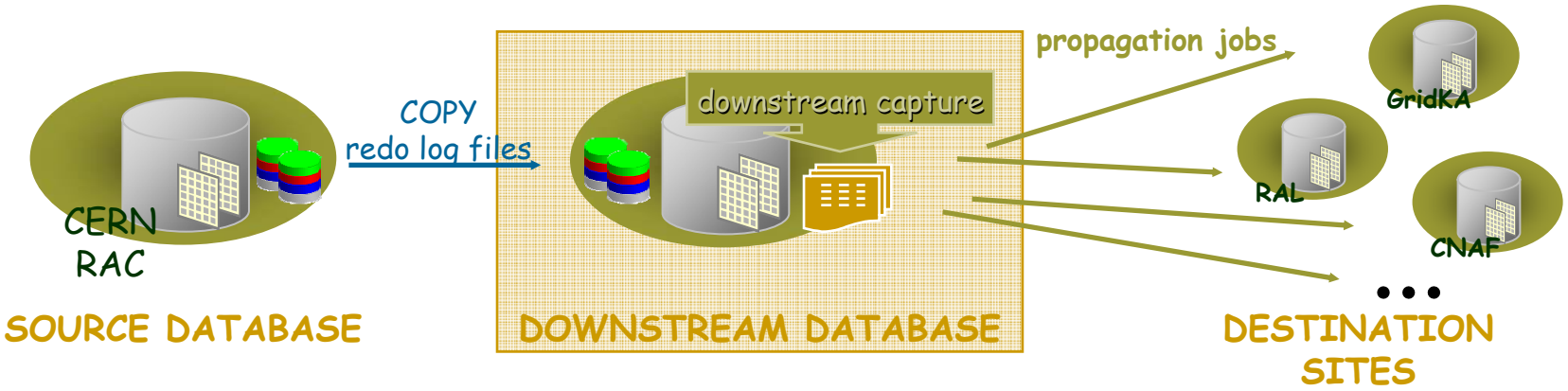
Downstream Capture

- Capture process runs on a different database
- Redo log files are copied from source to downstream
- Archived-Log downstream capture
  - waits for redo data to be archived
- Real-Time downstream capture
  - LGWR records data in the **online** redo log at the source db
  - redo data is stored in the standby redo log at the destination db



https://twiki.cern.ch/twiki/bin/view/PSSGroup/DownstreamDatabaseConfiguration

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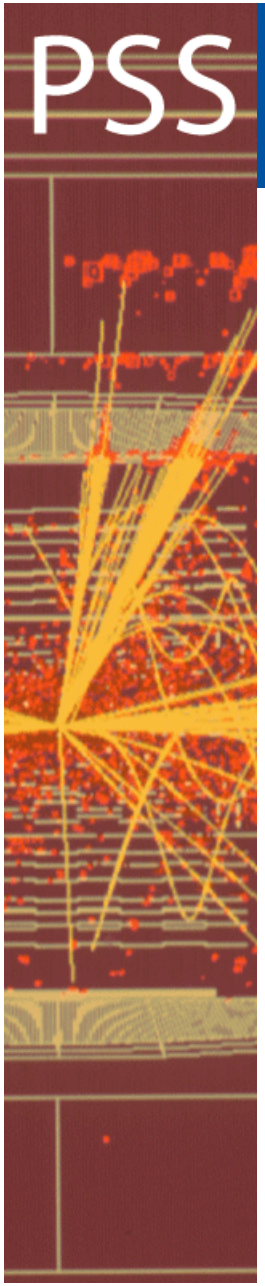

Downstream Capture

- setup for ATLAS (Real-Time)
  - using 5 destination sites (RAL, CNAF, GridKA, Taiwan, IN2P3)
- setup for LHCb (Archived-Log)
  - using 5 destination sites (RAL, CNAF, GridKA, SARA, IN2P3)
- Tests interrupted last week after firewall intervention
  - new firewall
  - propagation throughput limited to 28 LCRs per sec
  - related to the "sqlnet inspect" module
  - Bug in the new firewall software?

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Sites status

- BNL
  - installing new hardware
- PIC
  - RAC database up and running
  - first streams tests successful
- NDGF
  - single database up and running
  - first streams tests successful

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Streams **monitoring**

- New features

  http://oms3d.cern.ch:4889/streams/main.php

  - notifications via email
  - error tab (web application)
    - list of errors that have been reported by streams processes
  - availability tab (web application)
    - percentage availability of each instance provided with availability plots.
  - new metrics (monitor)
    - Streams pool usage
    - CPU consumption
    - Physical bytes read and written

- Proposition of future features
  - weekly reports
  - other notifications via email

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Streams **monitoring**

PSS

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Errors List

Monitor | Maps | DBs | Streams | Graphs | **Errors** | Availability

Errors Table

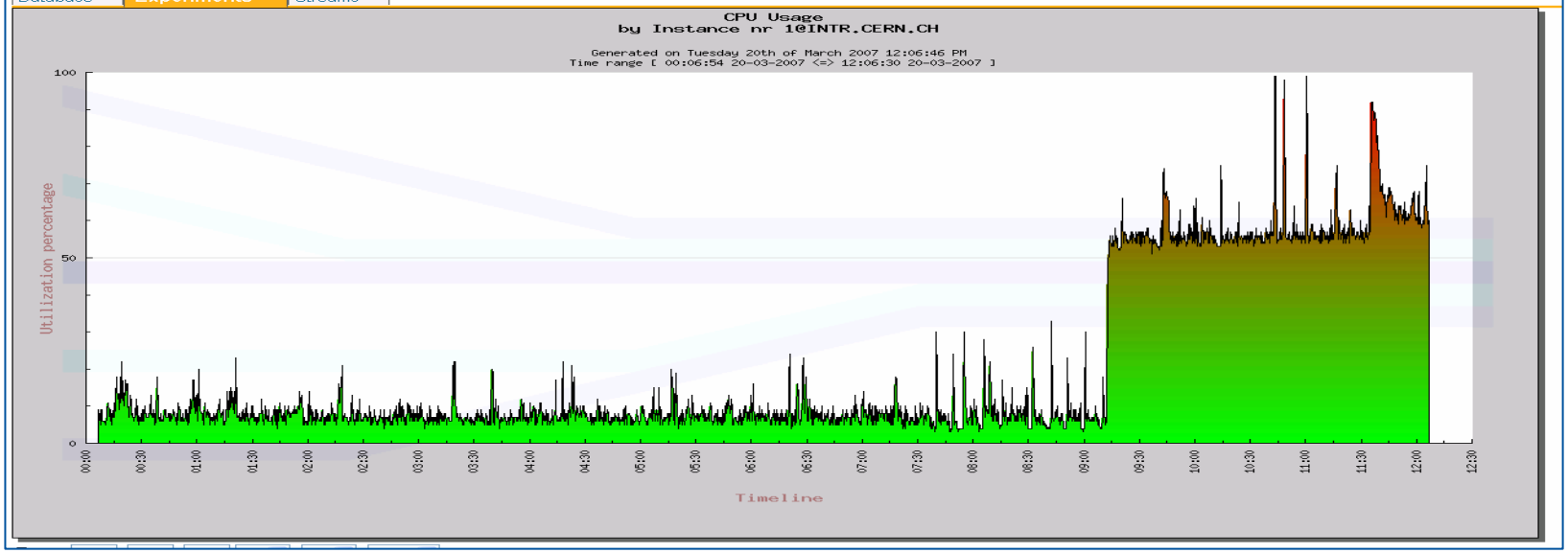
Error time	DB Name	Process Name	Process Type	State	Error Message
08:52:22 15-03-2007	ATONR.CERN.CH	PROPAGATE_TO_INTR	PROPAGATION	DISABLED	ORA-23603: STREAMS enqueue aborted due to low SGA
09:51:29 18-03-2007	INTR.CERN.CH	STRMADMIN_PROP_TO_TRIUMF	PROPAGATION	DISABLED	ORA-12545: Connect failed because target host or object does not exist ORA-06512: at "SYS.DBMS_AQADM_SYS", line 1087 ORA-06512: at "SYS.DBMS_AQADM_SYS", line 7627 ORA-06512: at "SYS.DBMS_AQADM", line 631 ORA-06512: at line 1
10:00:49 18-03-2007	D3R.CERN.CH	STRMADMIN_PROPAGATE_TRIUMF	PROPAGATION	DISABLED	ORA-12545: Connect failed because target host or object does not exist ORA-06512: at "SYS.DBMS_AQADM_SYS", line 1087 ORA-06512: at "SYS.DBMS_AQADM_SYS", line 7627 ORA-06512: at "SYS.DBMS_AQADM", line 631 ORA-06512: at line 1
19:36:44 14-03-2007	ATLDSC.CERN.CH	STRMADMIN_PROPAGATE_GRIDKA	PROPAGATION	ENABLED	ORA-12514: TNS:listener does not currently know of service requested in connect descriptor ORA-12514: TNS:listener does not currently know of service requested in connect descriptor
20:48:33 01-03-2007	MUONCAL.GRID.UMICH.EDU	PROPAGATE_TO_INTR	PROPAGATION	DISABLED	ORA-00257: archiver error. Connect internal only, until freed. ORA-06512: at "SYS.DBMS_AQADM_SYS", line 1087 ORA-06512: at "SYS.DBMS_AQADM_SYS", line 7627 ORA-06512: at "SYS.DBMS_AQADM", line 631 ORA-06512: at line 1

20-03-07 12:00:17 auto refresh ☑

CPU consumption

Monitor | Maps | DBs | Streams | **Graphs** | Errors | Availability

Database | **Experiments** | Streams



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Streams **monitoring**

Availability

Monitor | Maps | DBs | Streams | Graphs | Errors | **Availability**

Availability Table(Last 24 Hours)

Database Name	Instance	Availability
ASGC3D.GRID.SINICA.EDU.TW	1	100.0 %
	2	100.0 %
ATLAS.DB1TIER1.NDGF.ORG	1	100.0 %
ATLDB.IN2P3.FR	1	75.3 %
	2	97.3 %
	3	97.3 %
ATLDSC.CERN.CH	1	100.0 %
ATONR.CERN.CH	1	100.0 %
	2	100.0 %
	3	100.0 %
	4	100.0 %
	5	100.0 %
	6	100.0 %
CODBLHCB.CR.CNAF.INFN.IT	1	100.0 %
	2	100.0 %
CONDATL.CR.CNAF.INFN.IT	1	100.0 %
	2	100.0 %
D3R.CERN.CH	1	100.0 %
	2	100.0 %
INT2R.CERN.CH	1	100.0 %
	2	100.0 %
INT4R.CERN.CH	1	100.0 %
	2	100.0 %
INTR.CERN.CH	1	100.0 %
	2	100.0 %
LCGDB1.GRIDKA.DE	1	100.0 %
	2	100.0 %
LCGDB2.GRIDKA.DE	1	100.0 %
	2	100.0 %

Database Name	Instance	Availability
LFCLHCB.CR.CNAF.INFN.IT	1	100.0 %
	2	100.0 %
LHCBDB.IN2P3.FR	1	75.3 %
	2	98.1 %
	3	98.1 %
LHCBDSC.CERN.CH	1	100.0 %
LHCBR.CERN.CH	1	100.0 %
	2	100.0 %
	3	100.0 %
	4	100.0 %
	5	100.0 %
	6	100.0 %
LUGH.GRIDPP.RL.AC.UK	1	100.0 %
	2	98.6 %
MUONCAL.GRID.UMICH.EDU	1	100.0 %
OGMA.GRIDPP.RL.AC.UK	1	100.0 %
	2	100.0 %
ORCL.BNL.GOV	1	0.0 %
ORCON.CERN.CH	1	100.0 %
PICLHCB.PIC.ES	1	100.0 %
	2	100.0 %
SARADB.GRID.SARA.NL	1	57.0 %
	2	57.0 %
TEST1.CERN.CH	1	100.0 %
	2	100.0 %
	3	100.0 %
	4	100.0 %
	5	100.0 %
	6	100.0 %
TRAC.TRIUMF.CA	1	100.0 %
	2	100.0 %

20-03-07 12:03:34 auto refresh ☑

Links: 3D OEM, 3D TWIKI

Contact : Pdb.Service

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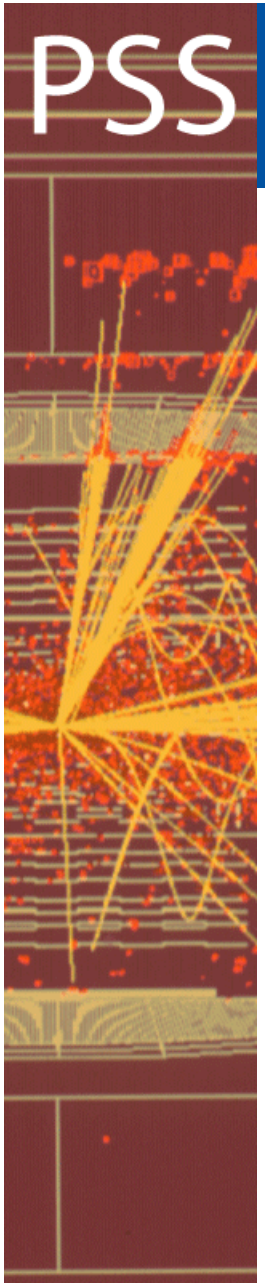

Open **Issues**

- PROPAGATION REPORTING ORA-600 [KWQPCBK179]
  - patch requested and applied
  - Bug has been reproduced – under investigation
- PROPAGATION JOBS DO NOT PROGRESS, NO ERRORS REPORTED
  - under investigation
  - related to the firewall problem?
- ORA-00600: [KWQBMCRCPTS101] AFTER DROPPING THE PROPAGATION JOB
  - impact on the Split & Merge Solution
  - fixed on 11 – backport already requested
- OEMAGENT BLOCKING START_PROPAGATION
  - Andrew Bulloch will help with the investigation

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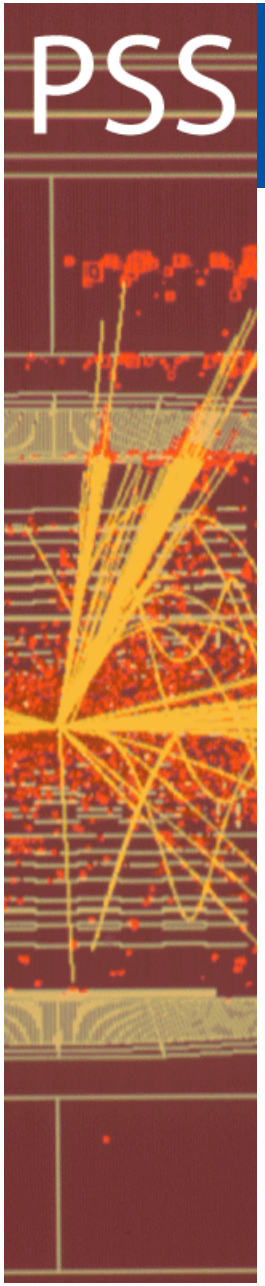

Questions & Answers

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