FroNtier testing
Eric Wicklund
LCG3D Meeting
June 1st, 2006

- Failover tests
- Squid comparison tests
- Definition of amount of information
- Endurance tests (underway)
- Future plans

These tests complement the tests run by Luis Ramos.

The tomcat servers on
cmsfrontier1.fnal.gov, cmsfrontier2.fnal.gov,cmsfrontier3.fnal.gov
were shut down in various permutations.
The test was run 10 times in each of five permutations.
Here are the results:

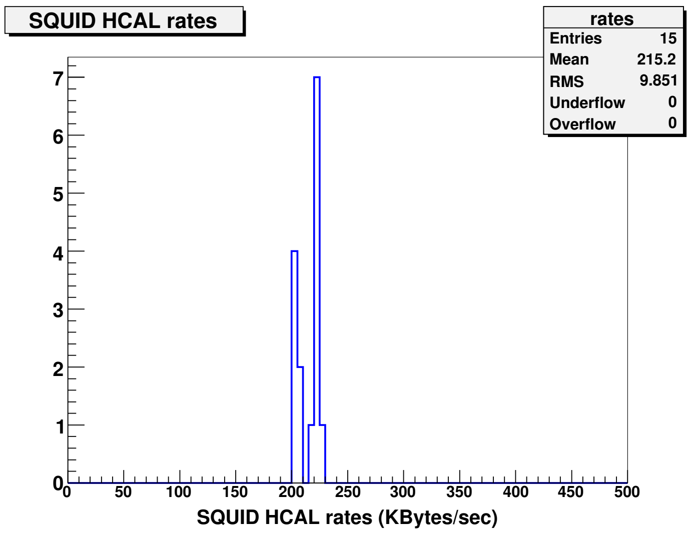
tomcat on cmsfrontier1	UP	DOWN	DOWN	DOWN	UP
tomcat on cmsfrontier2	DOWN	UP	DOWN	DOWN	UP
tomcat on cmsfrontier3	DOWN	DOWN	UP	DOWN	UP
successes to cmsfrontier	10	10	10	0	10

So, the round robin at cmsfrontier.cern.ch seems to be working as desired for the case when a tomcat server is down.

More details are under URL:
https://uimon.cern.ch/twiki/bin/view/CMS/CMS-Frontier-test-integration

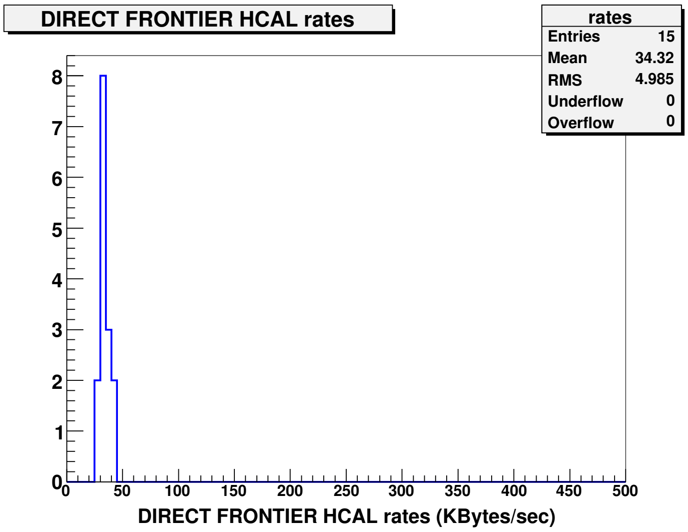
I have not yet tested killing the tomcat server during a transfer.

A key feature of FroNtier is the speed-up when using a local squid. A set of simultaneous jobs were run on LCG nodes at DESY. CMSSW version CMSSW_0_4_0 was used, which uses CORAL version CORAL_1_2_0. The HCAL constants were used, 337 KBytes/query. This plot shows the distribution of rates into a job when using the local squid at DESY.



FroNtier direct access

A set of simultaneous jobs were run on LCG nodes at DESY. This plot shows rates when the jobs used the FroNtier server at CERN. (This is not the typical mode of operation.)



The rates are higher when using a local squid as expected.

Estimate of amount of information

Following a suggestion by Dirk Duellmann, I ran

```
SQL> ANALYZE TABLE HCALPEDESTALS_MITEMS COMPUTE STATISTICS;
SQL> SELECT AVG_ROW_LEN
2 FROM USER_TABLES
3 WHERE TABLE_NAME='HCALPEDESTALS_MITEMS';
```

to measure the average space used by a row at 38 bytes. The queries select 9072 rows. So, I'm estimating the amount of information at 337 KBytes/query.

Endurance Tests

I've been running the tests repeatedly to see if there are failures. There are occasional failures at perhaps 1 in 200. I'm looking forward to a new release of CORAL which is expected to print clearer error messages.

Future Plans

- I'm looking forward to CORAL version CORAL_1_4_4 so I can expand my tests to the CMS ECAL constants, these have larger amounts of information in the queries.
- I plan to continue the endurance tests.
- I'm testing the gzip compressed version of FroNtier.