News from OPERA computing
28 October 2002

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I - News on OPERA computing at CERN

- Agreements with the CERN management
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- Disk space and CASTOR storage
- Access to General services

Agreements with the CERN management

- Meeting of the CERN Directorate on July 31st: OPERA has the same rights as all CERN approved experiments
- For all computing related topics, OPERA can continue to have access to CERN facilities
- On August 7th, meeting between W. von Rüden and myself: definition of an OPERA-IT agreement
- Requests for year 2003 sent immediately to the "COCOTIME" committee

CPU at CERN: present and future

- OPERA continues to operate its 10 Linux PCs within the lxbatch cluster
- Additional CPU, if needed can be allocated on request for a given production, within the budget allocated by COCOTIME
- Migration to RedHat 7.2 is imminent. No problem: OpRoot has been certified on RH 7.2 (18/10/02)
- RedHat 8.x will come in 2003. Do we have requirements on the compilers ?

Disk and mass storage

- Disk servers:
  - We continue to own the present one (465 Gbytes)
  - A second one (550 Gbytes) has been requested for 2003 through COCOTIME (therefore paid by CERN)
- CASTOR mass storage:
  - No change to the presently available space (1.2 Terabytes)
  - More space possible in 2003 and after: will be charged to OPERA (very cheap: 800 CHF per Terabyte for 5 years)

→ Please use these facilities asap !

Access to General Services (1)

- Mail, Web server
- AFS disk space (may be increased on request)
- New service: CVS server, in November 2002
- Help and advice from IT experts on standard CERN software, e.g. databases, GEANT4, ANAPHE, Grid
- If we want to use ORACLE: the database can be hosted and maintained by CERN
- We can use CDR if needed (OPERETTA ?)

Access to General Services (2)

- OPERA-IT linkperson (Mrs Leanne GUY)
- All above services are free (exception: new CASTOR space). However no “private” code writing can be expected from IT.
- We don’t need to move any present OPERA offline service, software or file away from CERN
- Additional possibility being considered: part-time hiring of an EP technician.

Conclusions concerning Computing at CERN:

- The situation is almost back to the one before the CERN budget crisis
- No need to waste time and manpower to migrate any OPERA software or files away from CERN
- We can get substantial help and advice from IT experts, if we use standard CERN tools

II - News from the ROOT workshop at CERN

- ROOT now officially supported by CERN EP
- The “Virtual Monte-Carlo” concept becomes part of ROOT
- The ROOT Geometry Package is ready
- POOL project (ROOT + relational Database)

Official support for ROOT from CERN-EP

- New group (EP/SFT) with manpower
- ROOT becomes part of the LCG (LHC Computing Grid) project
- ROOT chosen for data persistency by the four LHC experiments
- First ROOT-based LCG product delivered in 2003 (POOL)

ROOT and simulation tools

- ALICE “Virtual Monte-Carlo” concept now adopted as standard ROOT product, with FLUKA interface

  http://root.cern.ch/root/vmc/VirtualMC.html

- ROOT Geometry package is ready, with many goodies : tracking, interactivity, visualisation, and interfaces with relational databases

The POOL project

- LCG framework for persistency
- Hybrid approach: ROOT + Relational Database
- For the time being MySQL; ORACLE will follow
- First Release planned December 2002

Conclusions concerning ROOT

- Impressive number of users inside and outside the HEP community
- Official support from CERN is very good news
- Several new tools of interest for OPERA: Virtual Monte Carlo, Geometry package, POOL, fitting packages, etc...
- The choice of ROOT was a GOOD one !

III - News from general OPERA software

- OpRoot: can now read events with several vertices; new organization of Hits
- Proposal of Jean-Eric for TTrees/Folders and new hit header classes
- OpAlgo now used in OpRec/OpHits/OpDigi
- OpRec improvements
- CVS server problem: should be solved by the future CERN public tool

IV – First database meeting on Oct 4th

- First presentations on what should be stored in the future database
- Presentation of ORACLE by an CERN-IT expert
- Discussion is just beginning
- See next presentations

CONCLUSIONS

- Much better situation w.r.t CERN
- Strategic choices of ROOT and AliRoot/Virtual MonteCarlo philosophy are confirmed by recent evolutions in HEP
- Simulation and reconstruction are making progress; all subdetectors are now involved
- First discussions on the future database have begun