Software & Computing Overview

All leaders giving a talk on area of expertise ... should be a good sign by itself ...

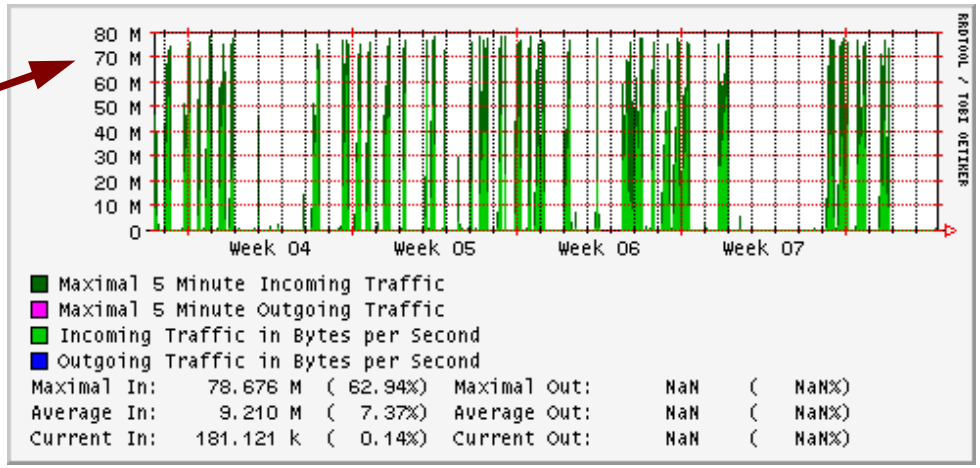
What's left to talk about ??

Infrastructure Layout

HPSS & Reco Farm

Quite a controversy in late December, finally acquired 5 more tape drives requested ... Let the Graph speak by themselves ...

75 MB average ...
was ~ 45 MB/sec top



Infrastructure Layout

- **Reco Farm could not function ... as expected**

  Now quite fine (99% efficiency) and a total of 16k jobs

  (*Lidia Didenko*)

  (*Eric Hjort*)

Final Status	BRAHMS	PHENIX	PHOBOS	STAR
Done	1306	11	537	16545
Aborted		1	190	99
Crashed	5	3	5	14
Queuing Failed	5			3
Killed	14	1		59
Still Running	12			17
Total	1342	16	732	16737
Total Completed	1330	16	732	16720
Efficiency	98.2	68.8	73.4	99.0

- **BNL Farm expected to be increased by 50%**

Infrastructure Layout

- **Still to come (budget delays)**

9 to 10 TB of space ...

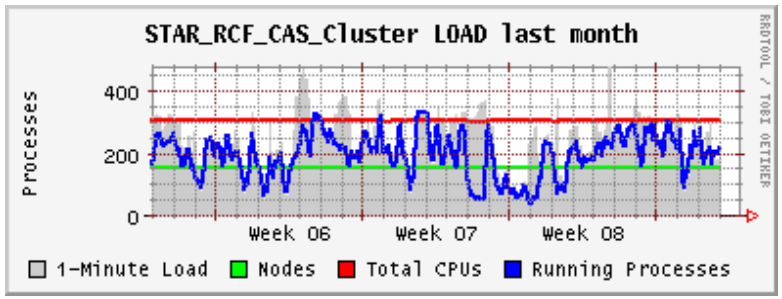
And that will be ALL with new resources.

- **Will still have a problem**

Data amount and size still a concern (DAQ100)

CPU required for a long (successful) AuAu run still a factor of 5 off (see our Y3 requirements page)

User Farm saturated



Solutions/Plans : Only the 4th time ...

- **Scheduler project**

  First announced in early 2002, emphasized in Nantes and AGAIN in October ... **(*Gabriele Carcassi*)**

- **NOT TO MIX with**

  FileCatalog issues (although tight to one another) and how disks are populated ...

- **Main Points**

  NFS NOT Easily scalable MUST try/use distributed environment. Cannot scale indefinitly ... 12 TB to use .

  Transition to Grid technology one step away ... More computing at one's reach ...

Speaking of Grid ...

- **STAR is part of PPDG (Particle Physics Data Grid)**
  YES, we are using its technology (HRM, ...)
- **Planing to be more agressive**
  Dave Stampf, Efstratios Efstathiadis, Richard Casella
  Thank you ITD ... Two more projects
  ✔ Monitoring using Ganglia `//www.star.bnl.gov/Ganglia/`
  Will be used for resource brokering purposes and transparent integration of PDSF/BNL. Possible collaboration with iVGDL (International Virtual Data Grid laboratory)
  ✔ Database Integration in the Grid (will enable us to use secure connections & run reconstruction jobs)

Jérôme Lauret, Collaboration Meeting, February 2003

But but ... Grid-ing with what ?? where ??

- **PDSF/BNL first try ... but cannot Grid at 2 ...**

- **PSC as a possible facility**

  Thanks to Mort Kaplan. Visit in October 2002 ...

  Not new per say (was tried in 98 ? but then dropped)

  Except ...

  ✔ 730 ES45 x 1 Ghz x 4 CPU each, 1 GB of memory per processor ; # 6 on the latest top 500 (NERSC is # 12)

  ✔ Multiple TB of storage

  ✔ STK Silos ... PB of storage waiting for us to use it ...

  ✔ Nathan Stone ready to help ...

Really Feasable ???

- **Single handed Progress**
  - True64 (Digital Unix)
  - Got all layered software installed and working
  - Qt, ROOT & CERNlib
  - 50% of root4star (first try with cxx/f77 options)
  - The best compiler and debugging tools I know of for sure

Worth a closer look ...

The present ...

- **Computing per say seems fine ...**
- **Lots of new Software/Tools delivered** (*Jeff Porter*)
  - **Shift Signup**
  - **Electronic ShiftLog** **Thanks Soeren for the support**
- **New QA** (*Herb, Lanny, Gene*)
- **A few new (or relatively new) worth mentioning**
  - **Software coordination**
  - **Trigger Detector** (*Akio Ogawa*)
  - **SSD** Jerome Baudot
  - **EEMC** Jan Balewski
  - **Simulation Leadership** (**Maxim Potekhin**)

And the future ... ITTF

Specific points to STAR management (October)

- **Extra Manpower needed (1 FTE)** Zbigniew Chajecki
- **Code/Institution responsibility still to be adressed**

Not a new Issue ... long term support MUST also be taken and identified Jim Thomas/Jerry Hoffmann

Project MUST be taken seriously by all
We have the means to succeed, let's just do that !!!
We must give it time and priority ...

Overview and deadlines (*Claude Pruneau*)

More Software ...

- **Reconstruction / Calibration** (*David Hardtke*)
- **ANALYSIS : BEWARE !!! Triggers ..** (*Jamie Dunlop*)

Thanks to Jeff & Jeff, Jon Gans, Gene, ...

- **ROOT-Qt efforts & Event Display** (*Valeri Fine*)
- **dE/dx completely re-assessed** (*Yuri Fysiak*)

- **Sub-Systems**

Tremendous progress from the FTPC group
(*Joern Putschke & Frank Simon*)

Major milestones for the EMC (*Alex P. Suaide*)

Maturing SVT (*Marcelo Munhoz*)

Conclusion(s) ...

- Does not seem too bad a-priori ; lots of activities, some usual problems hard to kill (embedding for example ...)

- However, S&C is in crisis from my stand point
  -0.6 FTE within a year ... but about +30% activity increase and no knowledge overlap
  Knowledge disappearing (TPC is a typical example, ...) and surprising lack of fresh blood
  Budget issues not helping to keep experts ...

- Already seeking external manpower ...