



TM and © Laurent de Brunhoff

RAL Tier A

Tim Adye
Rutherford Appleton Laboratory

BaBarGrid Workshop
CERN
19th April 2002

Outline

- New RAL Tier A hardware
- Analysis at RAL
- Grid software at RAL

- I won't talk about **BaBar UK Grid**
 - Leave that up to **Marc and the Davids**

New Hardware

- Arrived at end of March
- Disk
 - 35 TB (raw) for BaBar
 - on 18 servers, each with 2 arrays of 12 x 80 GB disks.
 - RH7.2 NFS servers
 - Can also run other jobs, eg. bbcp or cksum
 - First 3 TB now being filled with Kanga data
- CPU...



- 156 dual-CPU PCs (104 just for BaBar), each with:-
 - 2 x 1.4GHz Pentium III Tualatin
 - 1GB RAM
 - 30GB internal disk
 - 100Mb/s ethernet
- 8 x 1 Gbit ethernet for each rack
- Vendor was **Compusys**

CPU Status

- Start with **RH6.1**. Move to **RH7.2** in the summer.
- 10 systems being tested with BaBar code
 - **Kanga analysis** (Stefania Xella-Hansen)
 - Looks good so far:
 - Identical results to existing systems
 - Job speed scales with CPU MHz
 - **SP Production** (Fergus Wilson)
- Installation of rest is “trivial” once we are happy (**soon!**)
 - 202 CPUs for **user jobs**
 - One **frontend**: `babar.csf.rl.ac.uk`
 - One **gatekeeper**
 - One **RH7.2** test machine

Analysis at RAL – now

- “Just like SLAC without the wait”
- Well...
 - Need to obtain a separate **account**
 - Need to **ssh** to RAL (**csf.rl.ac.uk**)
 - Only has **Kanga** data
 - Not like SLAC at all – soon SLAC won't have Kanga data
 - Objectivity analysis only if you generate your own data
 - Some minor differences in local architecture
 - **Mix of RH6.1, Solaris 2.6, 7, and 8**
 - **PBS** batch queues
 - Local CVS mirror (requires explicit **klog**)
 - Default home area on **NFS**
 - BaBar software on RAL AFS
 - Users also have AFS home (explicit klog required to write)

Analysis at RAL – plans

- Want to minimise these differences
 - Put **automatic klog** in user login
 - Start importing **Objectivity** when required
 - and when Akram makes it easy
 - Move to **Solaris 8** (soon) and **RH7.2** (this summer)
- The **Grid** can help us with the others
 - User login -> **Grid certificates**
 - User accounts -> **generic accounts**
 - LSF / **PBS** / BQS differences hidden by Grid job submission system
 - RAL klog no longer required anyway, as user develops her job at home.

Grid Software at RAL

- RAL **Testbed** used for main Grid development
- **Analysis farm** Grid support is still rudimentary
 - Just Globus 1.2
 - Uses interactive frontend as Gatekeeper
- Will allocate one Tier A node as **Gatekeeper**
 - Dedicated machine so OS can be chosen according to DataGrid requirements
 - Remains inside Farm authentication domain to allow it to submit to PBS
- Hope to use **generic accounts**
 - so Grid jobs do not require special registration
- Progress **RSN** – once hardware installation complete

Summary

- RAL Tier A can be used now
 - Lots more CPU and disk coming on line right now
- Want to make analysis experience **really** just like SLAC (except faster)
 - Requires the Grid