

# CPU related issues

LHCb - Tier I  
WLCG London July 2010

# CPU Normalization

- Need to be able to know normalized consumed CPU work for a particular job
  1. Ask the batch system
  2. Use our own scale
- Some issues accessing this info

**2010-07-05 15:46:42 UTC** WorkloadManagement/JobAgent/LSFTimeLeft DEBUG: 82727539 lhbplt01 RUN grid\_lhcb ce125  
lxbp0929 **gridjob27002** 07/05-16:32:16 default **001:10:00.00** 39572 1436484  
9014,9047,9051,9217,9218,9344,9348,9354,9441,9463,9464,10553,10658,10659,10661,10664,10752,10755,10660,10665 07/05-16:32:33 -

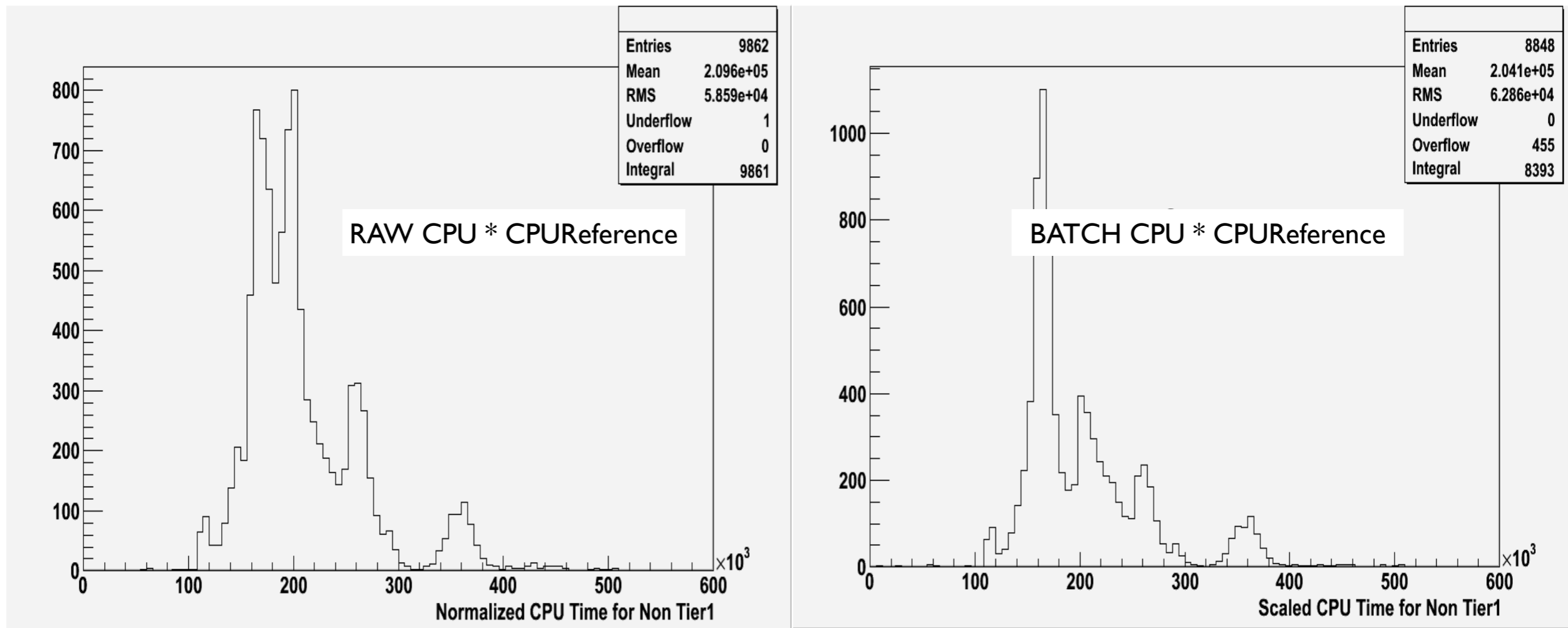
**2010-07-05 16:57:35 UTC** WorkloadManagement/JobAgent/LSFTimeLeft DEBUG: 82727539 lhbplt01 RUN grid\_lhcb ce125  
lxbp0929 **gridjob27002** 07/05-16:32:16 default **001:10:00.00** 629216 2817980  
9014,9047,9051,9217,9218,9344,9348,9354,9441,9463,9464,10553,10658,10659,10661,10664,10752,10755,26066,26067,26080,26083,262  
71,26280,10660,10665 07/05-16:32:33 -

**2010-07-05 16:12:15 UTC** WorkloadManagement/JobAgent/LSFTimeLeft DEBUG: 82733361 lhbplt01 RUN grid\_lhcb ce132  
lxbp0738 **gridjob18890** 07/05-16:57:17 default **001:03:27.00** 626408 2791932  
9793,9829,9833,10009,10010,10136,10140,10146,10233,10255,10256,10336,10480,10481,10483,10486,10620,10623,10669,10670,12397,  
12400,12600,12609,10482,10487 07/05-16:59:07 -

**2010-07-05 17:22:58 UTC** WorkloadManagement/JobAgent/LSFTimeLeft DEBUG: 82733361 lhbplt01 RUN grid\_lhcb ce132  
lxbp0738 **gridjob18890** 07/05-16:57:17 default **001:09:17.00** 643340 2813900  
9793,9829,9833,10009,10010,10136,10140,10146,10233,10255,10256,10336,10480,10481,10483,10486,10620,10623,24210,24211,24216,  
24219,24405,24414,10482,10487 07/05-16:59:07 -

# Normalized / Scaled CPU time

- Results from analysis of production 7012 (MC reconstruction).
- Normalized CPU time and Scaled CPU time don't give the same results for different CPU models.

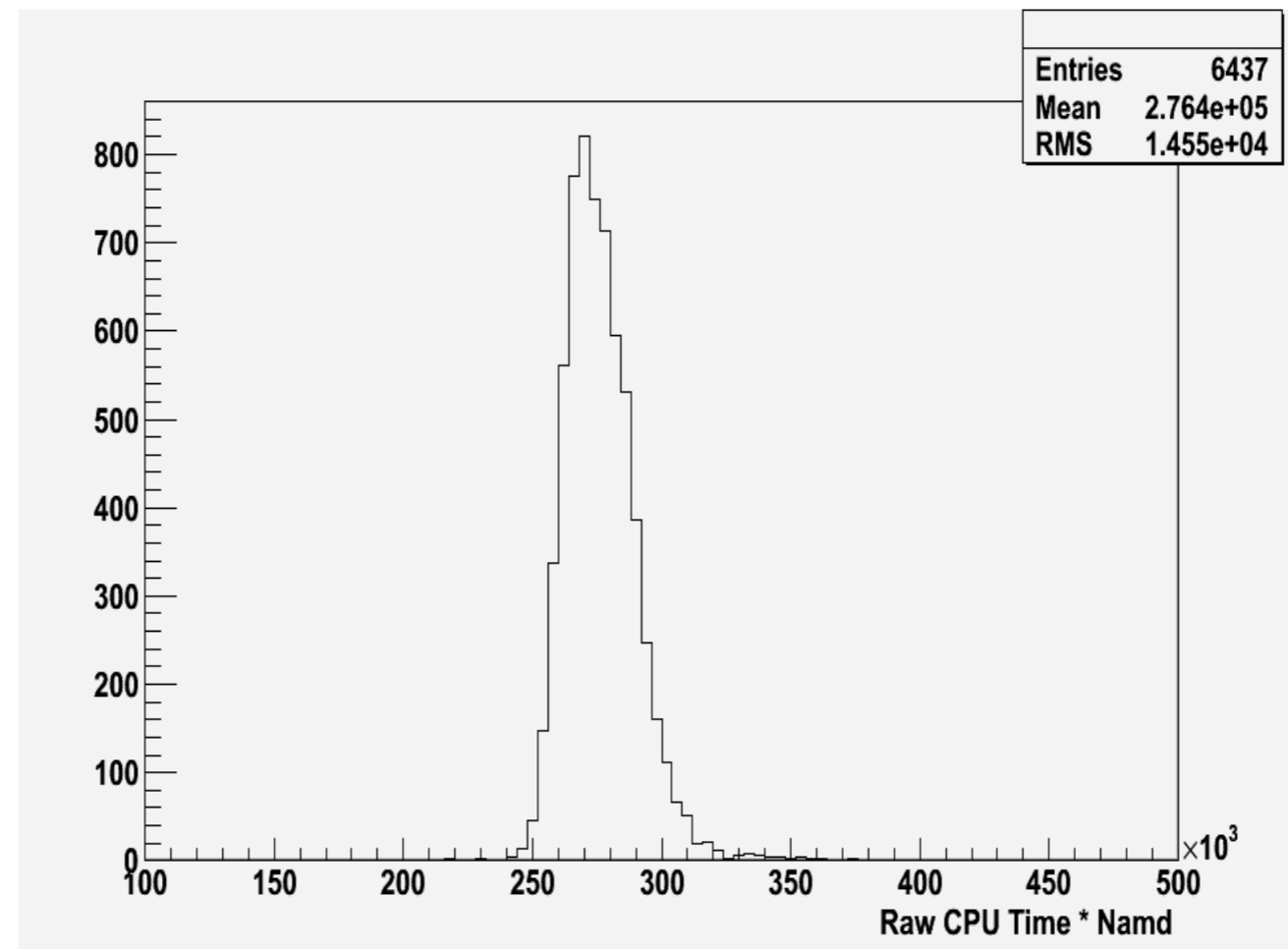


# namd test

- Consider CPU namd tests as a reference

'<http://www.spec.org/cpu2006/results/cpu2006.html>'

- Divide RAW CPU by namd measurement produce better “NormalizedCPU”:



# Queue length

- Using “large” data files (3 GB) requires “large” queues, trying to fit in:
  - 12.5 days \* HS06 ~ 1 CPU day
- Since we handle priorities and quotas for users, production, sam,...:
  - 1 short queue for the “lcgadmin” Role (write access to shared area)
  - 1 single long queue for the pilot Role (everything else)