Science & Technology Facilities Council

ARC Site Experience

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Outline

- From CREAM to ARC – ‘to ARC or not to CREAM’…
- Current status
- Future plans at RAL

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At the beginning it was CREAM…

- Q1 2013 - RAL Tier-1 has been using CREAM for some years
- June 2013 – internal Change Control request for
  - WN SL5 -> SL6
  - batch Maui/Torque - > HTCondor
  - Cream CE -> ARC CE
- Few reasons for ARC
  - HTCondor not fully supported by CREAM
  - Accounting simpler, no longer need for APEL publisher node
  - Simpler configuration, no need for YAIM
  - ARC simpler than CREAM in general

…then ARC took over…

- Ran ARC and CREAM in parallel during 2013, then CREAM retired
- Along the years RAL (Andrew Lahiff) contributed to the ARC code
- Patches relating to HTCondor tested first at RAL then committed to the NorduGrid repository and included in future releases
  - scan-condor-job tool, APEL accounting plugins
  - Patch for v4.1.0 - bug fix for memory requirements for multi-core jobs
  - Fixed bug in ARC condor submission script for multicore jobs – March 2015
- Overall happy with ARC + HTCondor

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ARC at RAL - Current Status

- 4 (lately 5) ARC-CEs SL6, VMs on WMWare
- Recent upgrade from 5.0.5 to 5.4.3
- No longer in-house patches
- Helped by Florido Paganelli (many thanks!)
- Had to disable GLUE2 publishing - everyone happy
- Had to move from ‘db3’ to ‘sqlite’ – delegation issues
- Warned about potential problems with virtual I/O on ‘controldir’ (/var/spool/arc/jobstatus) - so far so good
- Each ARC @RAL up to 4-5k (peaks of 7k) running jobs

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CE at RAL – Future Plans

- Evaluate migration to ARC6, also to HTCondor-CE
- Currently testing (and debugging) ARC v6.0.0-rcX
- Will soon start testing HTCondor-CE

CE at RAL – Future Plans

- Possible to have ARC6 in production this year, but…
- …very likely to end up with a HTCondor environment
  - By end 2019, or Q1 2020
  - More natural configuration
  - APEL accounting on HTC-CE to be sorted out this year

Final Comments

- ARC proved a very good move for RAL
- Very good experience when in touch with developers
- ARC probably good solution when combined with SLURM, PBS
- HTCondor-CE a better option when combined with HTCondor batch system
- HTCondor-CE + SLURM or PBS – more like an exotic alternative

Thank you!
Any questions?