

WLCG recommendations for Batch and CE

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2018-03-21
WLCG GDB at ISGC
Taipei, Taiwan

Poll - What is your site running?

- Batch system:

- Torque/PBS
 - Non-Torque PBS?
 - Maui?
- SLURM
- HTCondor
- SGE
- others?

- CE:

- CREAM
- ARC-CE
- HTCondor-CE
- others?



Current WLCG state

- These numbers are from BDII, so OSG sites in USA aren't represented
 - They would probably push HTCondor and HTCondor-CE up a bit
- For CEs, the current state is
 - CREAM: 92
 - ARC-CE: 32
 - HTCondor-CE: 4
 - ALIEN: 1



Current WLCG state

Number of sites	Torque/Maui	SLURM	HTCondor	USGE/SoGE	LSF
2014-04-13	101	10	10	15	7
2016-01-26	92	14	17	14	6
2017-01-17	84	15	21	10	5
2018-02-26	78	18	25	8	5



Background

- Some of the widely deployed batch systems and CEs have an unfavorable support situation
- Especially Torque/PBS and MAUI
 - MAUI has been unsupported since 2011
 - New features slow to arrive for Torque/PBS (containers, cgroups)
 - The core HPC crowd that used to use it are mostly using SLURM, active HTC sites have moved to HTCondor
- But also long-term support for CREAM in question
 - Maintained, but small effort, major changes unlikely
 - CentOS7 supporting update just released



Batch and CE recommendations

- During last year we (GDB) came up with some recommendations for where to go for sites that would like to batch and CE systems
 - <https://twiki.cern.ch/twiki/bin/view/LCG/WLCGWorkloadRecommendations>
- Strictly optional advice, sites are free to run whatever their experiments and stakeholders are happy with
 - Funding agencies might appreciate working accounting, etc
 - The recommended software has active support



Batch system recommendations

- HTCondor

- For sites with HTC loads, as in lots of jobs up to one node in size
- Especially for very large number of jobs
- A typical dedicated WLCG site looks like this
- Many of the largest WLCG sites have moved to use HTCondor in the last couple of years

- SLURM

- For sites with HPC loads, as in multi-node MPI



CE recommendations

- HTCondor-CE

- makes most sense coupled with HTCondor

- **Caveats:**

- There is no standard solution for accounting yet

- The code developed by PIC may be reusable

- This CE type can be used by all LHC experiment frameworks, but check with other communities your site needs to support

- A generic GLUE-2 info provider provided by CERN-IT has been accepted upstream and will be included in future releases

- ARC-CE

- Works with SLURM and HTCondor

- Also used for lightweight CEs with file staging to local filesystem instead of a close SE



Regional aspects

- HTCondor has regular meetings in USA and Europe
- SLURM user group meetings alternate between North America and Europe
- The Nordugrid conference and technical meeting covering the ARC-CE mostly occurs in Europe

- Would it be interesting for WLCG to help get some of the developers and experts to an Asian meeting?
 - Maybe colocated with Asia Tier Center Forum or next ISGC?





Questions?