Introduction into HTCondor in Zeuthen

A guide to success ;-)

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HELMHOLTZ RESEARCH FOR GRAND CHALLENGES

DESY.

Bye, bye grid engine

… the end of an era

- Grid Engine (incl. its predecessor CODINE) has been in use for more than 25 years at DESY, Zeuthen

  - Our institute was one of the first customers, and it looks like it is one of the last, as well …

- Grid Engine was recently purchased by Altair
  - But no real user community any longer
  - More or less all other HEP institutes moved to HTCondor during the last years

- Plan is to switch off Grid Engine in Zeuthen by the end of the year
  - If you really need it a few weeks longer, talk to us ...

Welcome HTCondor

… the beginning of a new era?

- HTCondor has been driving the DESY grid clusters for some years already

- HTCondor-9 as the new driver of the interactive batch was announced in February

  - with an „invitation to test" to all ...
  - some minor issues were found so far by a few number of testers
  - a BIG thanks to them!

- This introduction is (shamelessly) stolen from the last HTCondor week:
  - https://agenda.hep.wisc.edu/event/1733/timetable/#20220523
  - You will find more user-specific introduction talks there …
  - Use them, they are really good!

- HTCondor team even provides a Youtube channel, if you prefer watching over reading ;-)
  - https://www.youtube.com/channel/UCd1UBXmZIgB4p85t2tu-gLw/playlists

Differences to Grid Engine

- A physical (WGS) submit host is provided: **htc-submit.zeuthen.desy.de**

  - remote job submission & interaction from all other WGS is working, too
  - DAG jobs need to be submitted directly on the submit host!

- Authentication via Kerberos by default

  - kinit / klist
  - no interactions with batch system without authentication

- For DAG jobs this can/will be a problem
  - use IDTOKENS instead
  - example script on our official docs

- Also use DV service documentation at:
  - https://dv-zeuthen.desy.de/services/htcondor/job_submission/

Default settings

… if not specified differently

- Complete overview on DV service documentation web site:

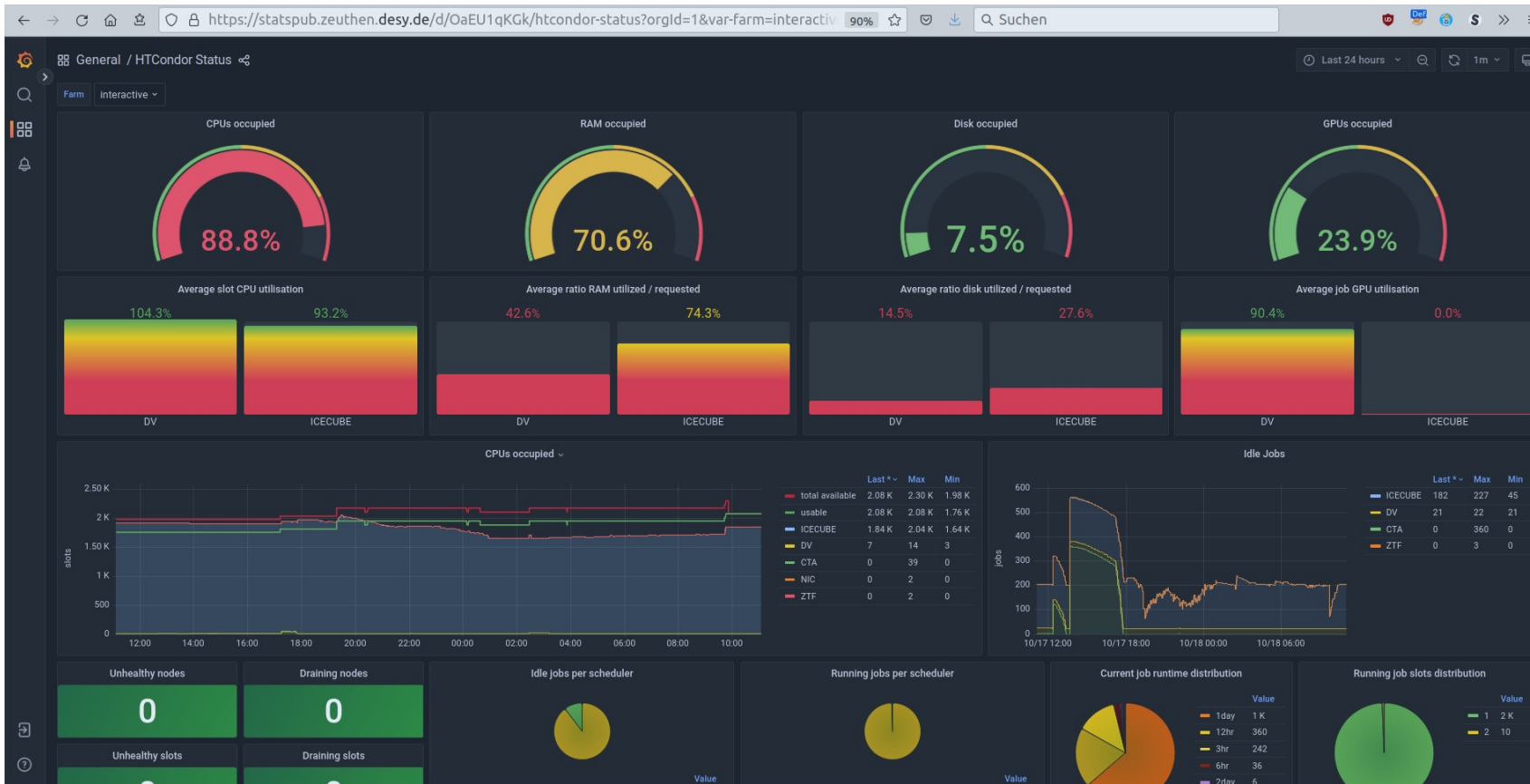 https://dv-zeuthen.desy.de/services/htcondor/job_submission/

Resource	default	comment
Runtime	48 hours	up to 7 days possible, but unsupported job will be put on hold once exceeded
RAM (RSS)	1GB	job will be put on hold if exceeded by factor 2
Disk space in $TMPDIR	1GB	no enforcement atm., subject to change if problematic!

- Jobs being on hold for more than a week will be (silently) removed from queue

A batch system dashboard ...

https://statspub.zeuthen.desy.de/d/OaEU1qKGk/htcondor-status?orgId=1&var-farm=interactive&refresh=1m

- Keep an eye on CPU & Memory utilisation
  - Farm is full if one of them is close to 100%

Dark times for computing

… due to European energy crisis

- Starting January 2023 (at the latest!) we need to heavily safe electricity due to ridiculous price increase

- How much it affects available computing capacity is not yet 100% clear …

  - However, be prepared for the worst
  - A reduction to 20%-40% of the current compute resources is most likely
  - … but even worse scenarious are not unlikely

- It is not a local problem, but a European
  - Due to Zeuthen-specific energy distribution mix (~50% goes into computing) our site is more heavily affected than others, though

That's it folks ...

- Please also read the docs:

  - HTCondor in Zeuthen: https://dv-zeuthen.desy.de/services/htcondor/job_submission/
  - Upstream HTC docs: https://htcondor.readthedocs.io/en/latest/users-manual/index.html