Condor accounting status

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28 Nov 2019

Topics

- Condor can refer to the batch system or the CE; I'll cover both. HTCondor (or Condor) means the batch system. HTCondorCE (or just HTCCE) refers to the CE.

- I'll show the combinations of CEs and batch systems that we're thinking about.

- I'll mention the status of these combinations, who is responsible for accounting interfaces, and how we have integrated the latest combination, HTCCE + HTCondor.

- I'll talk about SW engineering considerations.

- And I'll talk about further work that will be needed as things arise.

HTCondor accounting methods (client side)

- At least 3 CEs support the use of HTCondor as a batch system. All systems are treated the same at the server/repository/portal end. Client methods differ.

CE	Accounting method	Provider(s)
CREAM (ends 20 Dec 2010)	APEL client DB and parsers.	WLCG/RAL, Adrian et al.
ARC	JURA	NorduGrid dev team
HTCondor CE (HTCCE)	APEL client DB and parsers, extended with HTCCE data extraction scripts.	WLCG/RAL, Adrian et al. HTCondor devs, Ste et al

Status of CREAM and ARC

- CREAM: It's got 1 year to run, and no-one is going to migrate to it now. Anybody still using it is already set up; no further comment required?

- JURA: Responsibility rests with the ARC people. Has interfaces to various accounting systems incl. APEL. We use it at Liverpool, but on ARC 5 (one major version behind newest.) Well documented at the NorduGrid website.
    - www.nordugrid.org/documents/jura-tech-doc.pdf

Status of HTCondor CE

- HTCCE is the latest to be integrated.

- We used the existing, standard APEL client DB and parsers as a basis, and extended it, also adding support for optional scaling factor field (a ~ 2 line change.)

- The standard parsers include:

    - One parser for all CEs that reads generic CE information (the BLAH parser) and

    - Another specific parser for (in our case) HTCondor (the batch parser).

Status of HTCondor CE

- To extend the interface, we wrote two new "data extraction scripts", one for each existing parser. These are plain bash scripts that pull the accounting data from the HTCCE records in the format required by the parsers (note that in general, condor has powerful report formatting features.)

- Daily cron jobs extract the data, parse/read it into APEL client DB, process the data, write out the accounting records and send them to central APEL repository etc.

Further work on HTCondor CE

- The work done so far is only to support the HTCCE/HTCondor combination.

- But HTCCE can support N other batch systems beyond HTCondor. The CE (Blah Script) data extraction script is generic. But the batch system one is specific.

- Be prepared to assist any site that wants "HTCCE/JohnDoeBatchSystem" combination.

- We'd need to write custom, batch system specific extension as needed.

- Testing is a challenge (we would need to set up the "HTCCE/JohnDoeBatchSystem" combination, which is usually a significant piece of work.)

S/W Eng notes for HTCCE support

- We thought about how to develop and release this extension.

- There is an existing, well established engineering process for APEL client, so we left that unchanged.

- And we designed the new work as an extension to it, i.e. an additional RPM that is applied "on top of" the existing material, and which contains the data extraction scripts.

- Since the data extraction scripts are tightly bound to HTCondorCE and maintained by the HTCondor devs, we decided to develop and release the data extraction scripts as a HTCCE "contribution" called:

  - htcondor-ce-apel-3.3.0-1.el7.noarch.rpm

Documentation

- The scheme for HTCCE/HTCondor setup is documented here:

    - https://twiki.cern.ch/twiki/bin/view/LCG/HtCondorCeAccounting

- Various tests were done to show it's OK.

- I'm doing another test soon to cover November.

- Brian Lin (HTCondor dev) tells me that the RPM for the data extraction scripts is now released as a normal part of the HTCCE release procedure.

Summary

- CREAM (with HTCondor) will be discontinued soon.

- ARC with HTCondor batch system (or anything else) uses the JURA system, so that is "a handover" as far as I am concerned.

- HTCCE with HTCondor batch system now can use the APEL client DB and parsers, extended with the HTCCE data extraction scripts.

- It's tested and documented and the components are released as part of the standard procedures.

Summary

- We're well positioned to extend the HTCCE APEL accounting interface to include alternative batch systems as the need arises. In my view, it would not be productive to try to cover the combinations in advance because we do not know what will be taken up in future.

- Thanks. Comments and discussion ….