

Summary Cost Model and Performance Working Group

First impressions:

- Very good progress on “ready to run” – workloads
- Metrics are moving forward from collecting ideas to tools/chain for measuring them
 - Interesting options of using information/tools that come with the batch system (Condor)
 - Networks need to be more in the focus
- Measurements in testbeds is necessary, but comparison with production essential
- “What-If” Scenarios need to be explored (local data/remote/caches/..)

Hot Topic

- Mapping of resource profiles to local costs
- Exercise with 4 sites showed that there are massive differences what sites consider as cost.
- Many confusions on goal of a cost model for sites
 - What is it for?
 - How to take into account things that are free...
 - Comparing sites makes no sense....
 - Understanding how many events/year a infrastructure can process given the characteristics of workloads and sites. Guiding purchases and developments.
- Importance of complete costs
 - Power infrastructure, racks etc.....
- Lively discussion → expect progress !!!
- Warning that we should not go down the path to estimating total cost

Common Resource Needs Model

- More tunings knobs
- More parameters from the application metrics need to be added
- Networks
 - Have to be in the model
- Some corrections have to be made
 - Impact on μ on reco and analysis
- To evolve into something where we can do “What-If” for exploring the future
- But today we need to understand what we do today

Still Vague

- HL-LHC Workloads ...
 - Modeling the unknown unknown
- Some ideas
 - Micro Kernels representative for new approaches
 - Machine learning etc.
 - Assembling various : "Reco" "Analysis" etc. from these
 - Same for data storage model (local, distributed, etc.)
 - Over time refine this until the future arrives and we can use the HL-LHC versions of the workloads.
 - Needs quite some more thinking, but we should start now

Next steps?

- Continue the path we are on for the Metric
- Clarify better the goal of the cost model
 - But continue the work that has started
- Refine the Common Resource Calculation Model
 - Start with today's situation
- Start exploring ways to model variants of the future workloads
 - Set of micro kernels
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