

Using HEP experiment workflows for the benchmarking of WLCG computing resources

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The HEP-SPEC06 (HS06) benchmarking suite has been used for over a decade in the accounting and procurement of WLCG resources. HS06 is stable, accurate and reproducible, but it is an old benchmark and it is becoming clear that its performance and that of typical HEP applications have started to diverge. After evaluating several alternatives for the replacement of HS06, the HEPIX benchmarking WG has chosen to focus on the development of a HEP-specific benchmarking suite based on actual software workloads of the LHC experiments. This approach, based on container technologies, is designed to provide by construction a better correlation between the new benchmark and the throughputs of the experiment production workloads. It also offers the possibility to separately explore and describe the independent architectural features of different computing resource types. This is very important in view of the growing heterogeneity of the HEP computing landscape, where the role of non-traditional computing resources such as HPCs and GPUs is expected to increase significantly. This presentation will review the status and outlook of development of the new benchmarking suite, and in particular of the efforts to value HPC resources, at the time of ISGC2020.

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