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Watt Counts: ARM Compute & Energy Accounting in the WLCG

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In the push for sustainable solutions in High Energy Physics (HEP) computing, our WLCG Tier2 site at ScotGrid Glasgow has adopted ARM-based servers, achieving full production integration with increasingly positive results. Today we run significant workloads on ARM, including ATLAS production tasks, and our findings indicate a measurable reduction in energy consumption compared to traditional x86 servers. This talk will present the energy savings achieved so far and an outlook for the near future.

We will also outline recent efforts to standardize power-efficiency metrics across HEP centers by developing a unified HEP-Score/Watt output format in collaboration with the HEPiX Benchmark Working Group, to facilitate consistent data aggregation and reporting on energy efficiency.

Additionally, drawing inspiration from ATLAS PanDA CO2 reporting, we provide an example of power usage accounting at our site. Leveraging runtime data from Prometheus and power statistics, we calculate the energy consumption per Virtual Organization (VO), showing a potential approach to site-level CO2 accounting.

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