Evolution of the upgrade LHCb HLT1 throughput

The LHCb collaboration

Abstract

Evolution of the upgrade LHCb HLT1 throughput between autumn 2018 and summer 2019.
Figure 1: Evolution of the upgrade LHCb HLT1 throughput between autumn 2018 and summer 2019. The dates on the x-axis are not fully chronological because various independent nightly tests with overlapping time intervals were integrated in one timeline.

Figure 1 shows the evolution of the upgrade LHCb HLT1 throughput between the autumn of 2018 and summer of 2019. The physics content and logic of the benchmarked HLT1 sequence is described more fully in a dedicated note. The throughput of the HLT1 process is measured on simulated minimum bias events in nominal upgrade datataking conditions, using a reference server node equipped with two Intel Xeon E5-2630 CPUs. The overall farm throughput is projected by assuming that LHCb will be able to purchase 1000 such reference nodes for Run 3. The throughput is measured automatically in nightly tests, and each point refers to one such test. Points which fall outside the general plot trend indicate occasional problems with the automatic measurements. The key changes in the reconstruction algorithms during this period are colour-coded and described in the figure legend.

References