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Data Challenge 2024 - CMS activities

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To verify the readiness of the data distribution infrastructure for the HL-LHC, which is planned to start in 2029, WLCG is organizing a series of data challenges with increasing throughput and complexity. This presentation addresses the contribution of CMS to Data Challenge 2024, which aims to reach 25% of the expected network throughput of the HL-LHC. During the challenge CMS tested various network flows, from the RAW data distribution to the “flexible” model, which adds network traffic resulting from data reprocessing and MC production between most CMS sites.

The overall throughput targets were met on the global scale utilizing several hundred links. Valuable information was gathered regarding scaling capabilities of key central services such as Rucio and FTS. During the challenge about half of the transferred volume was carried out via token based authentication. In general sufficient performance of individual links was observed and sites coped with the target throughput. For links that did not reach the target, attempts were made to identify the bottleneck, whether in the transfer tools, the network link, the involved storage systems or any other component.

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