



Contribution ID: 379

Type: Talk

## Achieving 100Gb/s data rates with XRootD - Preparing for HL-LHC and SKA

*Monday 21 October 2024 17:27 (18 minutes)*

To address the needs of forthcoming projects such as the Square Kilometre Array (SKA) and the HL-LHC, there is a critical demand for data transfer nodes (DTNs) to realise O(100)Gb/s of data movement. This high-throughput can be attained through combinations of increased concurrency of transfers and improvements in the speed of individual transfers. At the Rutherford Appleton Laboratory (RAL), the UK's Tier-1 centre for the Worldwide LHC Computing Grid, and initial site for the UK SKA Regional Centre (SRC), we have provisioned 100GbE XRootD servers in preparation for SKA development and operations. This presentation details the efforts undertaken to reach 100Gb/s data ingress and egress rates using the WebDAV protocol through XRootD endpoints, including the use of a novel XRootD plug-in designed to assess XRootD performance independently of physical storage backend. Results are also presented for transfer tests against a CephFS storage backend under different configuration settings (e.g. via tunings to file layouts). We discuss the challenges encountered, bottlenecks identified, and insights gained, along with a description of the most effective solutions developed to date and areas of future activities.

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**Session Classification:** Parallel (Track 1)

**Track Classification:** Track 1 - Data and Metadata Organization, Management and Access