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## Operating the 200 Gbps IRIS-HEP Demonstrator for ATLAS

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The ATLAS experiment is currently developing columnar analysis frameworks which leverage the Python data science ecosystem. We describe the construction and operation of the infrastructure necessary to support demonstrations of these frameworks, with a focus on those from IRIS-HEP. One such demonstrator aims to process the compact ATLAS data format PHYSLITE at rates exceeding 200 Gbps. Various access configurations and setups on different sites are explored, including direct access to a dCache storage system via Xrootd, the use of ServiceX, and the use of multiple XCache servers equipped with NVMe storage devices. Integral to this study was the analysis of network traffic and bottlenecks, worker node scheduling and disk configurations, and the performance of an S3 object store. The system's overall performance was measured as the number of processing cores scaled to over 2,000 and the volume of data accessed in an interactive session approached 200 TB. The presentation will delve into the operational details and findings related to the physical infrastructure that underpins these demonstrators.

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