_W.png _W.bb _W.png”

Contribution ID: **265** Type: **Oral presentation to parallel session**

Data Federation Strategies for ATLAS Using XRootD

Tuesday, 15 October 2013 16:31 (20 minutes)

In the past year the ATLAS Collaboration has accelerated its program to federate data storage resources using an architecture based on XRootD with its attendant redirection and storage integration services. The main goal of the federation is an improvement in the data access experience for the end user while allowing for more efficient and intelligent use of computing resources by monitoring and optimizing for observed data access patterns. Along with these advances come integration with existing ATLAS production services (PanDA and its pilot services) and data management services (DQ2, and in the next generation, Rucio). A system which tests functionality of the federation has been integrated into the standard ATLAS and WLCG monitoring frameworks and a dedicated set of tools provides high granularity information on its current and historical usage. We use a federation topology designed to search from the site's local storage outward to its region and then more globally. We describe programmatic testing of various federation access modes including direct access over the wide area network or staging in of remote data files to local disk. To support job brokering decisions, a time-dependent cost-of-data-access matrix is made taking into account network performance and other key site performance indicators. The system's response to production-scale physics analysis workloads, either from individual end-users or ATLAS analysis services, is discussed.

Summary

Primary author: GARDNER JR, Robert William (University of Chicago (US))

Presenter: VUKOTIC, Ilija (University of Chicago (US))

Session Classification: Data Stores, Data Bases, and Storage Systems

Track Classification: Data Stores, Data Bases, and Storage Systems