

# Networks in ATLAS

*Tuesday, 11 October 2016 12:15 (15 minutes)*

Networks have played a critical role in high-energy physics (HEP), enabling us to access and effectively utilize globally distributed resources to meet the needs of our physicists.

Because of their importance in enabling our grid computing infrastructure many physicists have taken leading roles in research and education (R&E) networking, participating in, and even convening, network related meetings and research programs with the broader networking community worldwide. This has led to HEP benefiting from excellent global networking capabilities for little to no direct cost. However, as other science domains ramp-up their need for similar networking it becomes less clear that this situation will continue unchanged.

What this means for ATLAS in particular needs to be understood. ATLAS has evolved its computing model since the LHC started based upon its experience with using globally distributed resources. The most significant theme of those changes has been increased reliance upon, and use of, its networks.

We will report on a number of networking initiatives in ATLAS including the integration of network awareness into PANDA, the changes in our DDM system to allow remote access to data and participation in the global perfSONAR network monitoring efforts of WLCG.

We will also discuss new efforts underway that are exploring the inclusion and use of software defined networks (SDN) and how ATLAS might benefit from: Orchestration and optimization of distributed data access and data movement. Better control of workflows, end to end. Enabling prioritization of time-critical vs normal tasks Improvements in the efficiency of resource usage

## **Tertiary Keyword (Optional)**

Distributed data handling

## **Primary Keyword (Mandatory)**

Network systems and solutions

## **Secondary Keyword (Optional)**

Distributed workload management

**Session Classification:** Track 3: Distributed Computing

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