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Integrating the Network into LHC Experiments: Update on the ANSE (Advanced Network Services for Experiments) Project

Monday, 14 October 2013 15:00 (45 minutes)

The LHC experiments have always depended upon a ubiquitous, highly-performing network infrastructure to enable their global scientific efforts. While the experiments were developing their software and physical infrastructures, parallel development work was occurring in the networking communities responsible for interconnecting LHC sites. During the LHC's Long Shutdown \#1 (LS1) we have an opportunity to incorporate some of these network developments into the LHC experiment's software.

The ANSE (Advance Network Services for Experiments) Project, an NSF CC-NIE funded effort, is targeting the creation, testing and deployment of a set of software tools (network services and an associated API) suitable for use by the LHC experiments. This library will explicitly enable obtaining both knowledge of the networks and provide mechanisms for interacting with those networks. The project will leverage existing infrastructure from DYNES\cite{dynes}, AutoBahn\cite{autobahn}, perfSONAR-PS\cite{psps}, OpenFlow\cite{OpenFlow}, MonALISA\cite{MonaLISA} and Software Defined Networking\cite{SDN} as well as experiment-specific applications to enable these capabilities.

We will report on the progress we have made to date, present our initial architecture and show some examples of the kinds of functionality we are developing in the context of the ATLAS and CMS experiments.

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Primary authors: TACKETT, Alan (Vanderbilt University); MELO, Andrew Malone (Vanderbilt University (US)); BARCZYK, Artur Jerzy (California Institute of Technology (US)); MUGHAL, Azher (California Institute of Technology (US)); Mr MEEKHOF, Ben (University of Michigan); NEWMAN, Harvey (California Institute of Technology (US)); Mr BATISTA, Jorge (University of Michigan); DE, Kaushik (University of Texas at Arlington (US)); SHELDON, Paul (Vanderbilt University (US)); VOICU, Ramiro (California Institute of Technology (US)); BALL, Robert (University of Michigan (US)); Dr WILDISH, Tony (Princeton University (US))

Presenter: MELO, Andrew Malone (Vanderbilt University (US))

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