

Deploying distributed network monitoring mesh for LHC Tier-1 and Tier-2 sites

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Fermilab hosts the US Tier-1 center for data storage and analysis of the Large Hadron Collider's (LHC) Compact Muon Solenoid (CMS) experiment. To satisfy operational requirements for the LHC networking model, the networking group at Fermilab, in collaboration with Internet2 and ESnet, is participating in the perfSONAR-PS project. This collaboration has created a collection of network monitoring services targeted at providing continuous network performance measurements across wide-area distributed computing environments. The perfSONAR-PS services are packaged as a bundle, and include a bootable disk capability. We have started on a deployment plan consisting of a decentralized mesh of these network monitoring services at US LHC Tier-1 and Tier-2 sites. The initial deployment will cover all Tier-1 and Tier-2 sites of US ATLAS and US CMS. This paper will outline the basic architecture of each network monitoring service. Service discovery model, interoperability, and basic protocols will be presented. The principal deployment model and available packaging options will be detailed. The current state of deployment and availability of higher level user interfaces and analysis tools will also be demonstrated.

Primary author: Mr GRIGORIEV, Maxim (FERMILAB)

Co-authors: Mr BROWN, Aaron (Internet2); Mr TIERNEY, Brian (ESnet); Mr BOYD, Eric (Internet2); Mr ZURAWSKI, Jason (Internet2); Mr BOOTE, Jeff (Internet2); Mr METZGER, Joe (ESnet); Dr SWANY, Martin (University of Delaware); Mr ZEKAUSKAS, Matt (Internet2); Mr DEMAR, Phil (Fermilab)

Presenter: Mr GRIGORIEV, Maxim (FERMILAB)

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