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Improving WLCG Networks Through Monitoring and Analytics

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WLCG relies on the network as a critical part of its infrastructure and therefore needs to guarantee effective network usage and prompt detection and resolution of any network issues, including connection failures, congestion and traffic routing. OSG Networking Area in partnership with WLCG has focused on collecting, storing and making available all the network related metrics for further analysis and discovery of issues that might impact network performance and operations. This has been facilitated by the already existing network of the perfSONAR instances that have been commissioned to operate in production. In order to help sites and experiments better understand and fix the networking issues, WLCG Network Throughput working group was formed, which works on the analysis and integration of the network-related monitoring data collected by the OSG/WLCG infrastructure and operates a support unit to help find and fix the network performance issues.

In this talk we'll describe the current state of the OSG network measurement platform and summarise the activities taken by the working group, focusing mainly on the throughput issues that have been reported and resolved during the recent period with the help of the perfSONAR network. We will also cover the updates on the few higher level services that were developed to help bring the platform to its full potential as well as describe the currently ongoing analytical activities related to networking and their results. Finally, we will discuss and propose possible R&D areas to help improve our networks in general as well as prepare the infrastructure for the foreseen major changes in the way networks will be provisioned and operated in the future.

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