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Monitoring the Delivery of Virtualized Resources to the LHC Experiments

The adoption of Cloud technologies by the LHC experiments places the fabric management burden of monitoring virtualized resources upon the VO. In addition to monitoring the status of the virtual machines and triaging the results, it must be understood if the resources actually provided match with any agreements relating to the supply. Monitoring the instantiated virtual machines is therefore a fundamental activity and hence this paper describes how the Ganglia monitoring system can be used within the cloud computing scope of the LHC experiments. Extending upon this, it is then shown how the integral of the time-series monitoring data obtained can be repurposed to provide a consumer-side accounting record, which can then be compared with the concrete agreements that exist between the supplier of the resources and the consumer. From this, it is not clear though how the performance of the resources differ both within and between providers. Hence, the case is made for a benchmarking metric to normalize the results along with some preliminary investigation on obtaining such a metric.

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