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Performance evaluation and capacity planning for a scalable and highly available virtulization infrastructure for the LHCb experiment

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The virtual computing is often run to satisfy different needs: reduce costs, reduce resources, simplify maintenance and the last but not the least add flexibility.
The use of Virtualization in a complex system such as a farm of PCs that control the hardware of an experiment (PLC, power supplies ,gas, magnets..) put as in a condition where not only an High Performance requirements need to be carefully considered but also a deep analysis of strategies to achieve a certain level of High Availability.
We conducted a performance evaluation on different and comparable storage/network/virtulization platforms.
The performance is measured using a series of independent benchmarks , testing the speed an the stability of multiple VMs runnng heavy-load operations on the I/O of virtualized storage and the virtualized network.
The result from the benchmark tests allowed us to study and evaluate how the different workloads of Vm workloads interact with the Hardware/Software resource layers.

Summary

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