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A quantitative evaluation of different methods for instantiating private cloud virtual machines

The RAL Tier-1 has been deploying production virtual machines for several years. As we move to providing a production private cloud, managed using OpenNebula, we have experimented with a range of different ways of deploying virtual machine images on hypervisors. We present a quantitative comparison of a variety of virtual machine image and storage combinations, including monolithic Scientific Linux VMs copied and run locally on hypervisors, the same images run on Ceph shared storage, lean images with volatile filesystems created and run locally as required. We will also examine the same combinations using the micro-CernVM - where the bulk of the operating system is provided by the CernVM filesystem. We will compare performance, with regards to both instantiation time and computational performance for HEP workloads, and also discuss the virtual machine management implications of each combination.

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