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CernVM - a virtual appliance for LHC applications

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CernVM is a Virtual Software Appliance to run physics applications from the LHC experiments at CERN. The virtual appliance provides a complete, portable and easy to install and configure user environment for developing and running LHC data analysis on any end-user computer (laptop, desktop) and on the Grid independently of operating system software and hardware platform (Linux, Windows, MacOS). The aim is to facilitate the installation of the experiment software on an user computer and minimize the number of platforms (compiler-OS combinations) on which experiment software needs to be supported and tested thus reducing the overall cost of LHC software maintenance. Two ingredients are necessary for CernVM. The first one is a thin virtual machine that contains 'just enough Operating System' to run any application framework of the four LHC experiments. The second is a file system (cvmfs) specifically designed for an efficient 'just in time' software distribution and installation. The CernVM project, which has started at the beginning of this year is funded for period of four years under the recently approved R&D program at CERN.

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