



AVVISO DI SEMINARIO

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Sala Garisenda – INFN-CNAF

Via Ranzani, 13/2, Bologna

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Introduction to the CernVM-File System

Abstract. The CernVM-File System (CVMFS) is a snapshotting read-only file system based on HTTP to deliver centrally installed software to grids and clouds in a fast, scalable and reliable way. It is extensively used in the WLCG and gains adoption in various other grid infrastructures.

Contents of a CernVM-File System are centrally maintained on a so-called release manager machine (CVMFS Server) constituting the single read/write location of the system. By separating file system meta-data from actual file contents it creates a CernVM-FS repository that can be distributed as static HTTP content. Clients usually access these CernVM-FS repositories through a FUSE module that downloads individual files on-demand and caches them locally.

This talk is an introduction to CernVM-FS, focussing on the administrative perspective of both the CernVM-FS server and client. We will look at best practices of CernVM-FS client deployments in an existing computing centre and briefly overview the global software distribution setup utilised by the four main LHC experiments. Furthermore we will sketch how CernVM-FS internally handles repository contents and which assumptions on both file system content and distribution setup are made for scalability, performance and reliability.

As an important use case of CernVM-FS, we will take a glance at how CernVM 3 distributes a whole operating system on-demand, which simplifies and speeds up the deployment of virtual machines on cloud resources.