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## A virtual validation cluster for ALICE software releases based on CernVM

One of the most important steps of software lifecycle is Quality Assurance: this process comprehends both automatic tests and manual reviews, and all of them must pass successfully before the software is approved for production. Some tests, such as source code static analysis, are executed on a single dedicated service: in High Energy Physics, a full simulation and reconstruction chain on a distributed computing environment, backed with a sample “golden” dataset, is also necessary for the quality sign-off. The ALICE experiment uses dedicated and virtualized computing infrastructures for the Release Validation in order not to taint the production environment (i.e. CVMFS and the Grid) with non-validated software and validation jobs: the ALICE Release Validation cluster is a disposable virtual cluster appliance based on CernVM and the Virtual Analysis Facility, capable of deploying on-demand, and with a single command, a dedicated virtual HTCondor cluster with an automatically scalable number of virtual workers on any cloud supporting the standard EC2 interface. Input and output data are externally stored on EOS, and a dedicated CVMFS service is used to provide the software to be validated. We will show how the Release Validation Cluster deployment and disposal are completely transparent for the Release Manager, who simply triggers the validation from the ALICE build system’s web interface. CernVM 3, based entirely on CVMFS, permits to boot any snapshot of the operating system in time: we will show how this allows us to certify each ALICE software release for an exact CernVM snapshot, addressing the problem of Long Term Data Preservation by ensuring a consistent environment for software execution and data reprocessing in the future.

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