21st International Conference on Computing in High Energy and Nuclear Physics **CHEP2015** Okinawa Japan: April 13 - 17, 2015

Contribution ID: **419**                                           Type: **poster presentation**

# Integration of XRootD into the cloud infrastructure for ALICE data analysis

Cloud technologies allow easy load balancing between different tasks and projects. From the viewpoint of the data analysis in the ALICE experiment, cloud allows to deploy software using Cern Virtual Machine (CernVM) and CernVM File System (CVMFS), to run different (including outdated) versions of software for long term data preservation and to dynamically allocate resources for different computing activities, e.g. grid site, ALICE Analysis Facility (AAF) and possible usage for local projects or other LHC experiments.

We present a cloud solution for Tier-3 sites based on OpenStack and CEPH distributed storage with an integrated XRootD based storage element (SE). One of the key features of the solution is that CEPH has been used as a backend for Cinder Block Storage service for OpenStack and in the same time as a storage backend for XRootD, with redundancy and availability of data preserved by CEPH settings.

For faster and easier OpenStack deployment the PackStack solution, which is based on the Puppet configuration management system, is applied. CEPH installation and configuration chains are structured, converted to Puppet manifests and integrated into Packstack. This solution can be easily deployed, maintained and used even in small groups with limited computing resources and small organisations which usually have lack of IT support.
The proposed infrastructure has been tested on two different clouds (SPbSU \& BITP) and integrates succesfully with the ALICE data analysis model.

**Primary authors:** ZAROCHENTSEV, Andrey (St. Petersburg State University (RU)); Mr BATKOVICH, Dmitrii (St.Petersburg State University); KOMPANIETS, Mikhail (St. Petersburg State University (RU)); SHADURA, Oksana (National Technical Univ. of Ukraine "Kyiv Polytechnic Institute); YURCHENKO, Volodymyr

**Co-author:** RYABINKIN, Eygene (National Research Centre Kurchatov Institute (RU))

**Presenter:** RYABINKIN, Eygene (National Research Centre Kurchatov Institute (RU))

**Track Classification:** Track7: Clouds and virtualization