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Portal for organization of scientific data processing on heterogeneous computing resources at NRCKI

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National Research Center "Kurchatov Institute"Data Processing Center provides its user community with state-of-art large scale heterogeneous computing resources, such as supercomputers, cloud and grid computing. The requirement to integrate computing facilities as a single computing entity for the end-user has motivated us to develop and to implement the data processing portal.

The ATLAS Production and Distributed Analysis workload management system (PanDA) has been chosen as a base technology for the portal. PanDA has demonstrated excellent capabilities to manage various workflows at scale in the ATLAS experiment at LHC. PanDA instance was installed at NRC KI, adapted to the scientific needs of its user community and integrated with NRC KI computing resources. This integration has required the development of user interface to provide scientists with a single point of access to the computing resources, and file handling system to transfer input/output data between file storages and working nodes.

The portal has demonstrated its efficiency in running bioinformatical scientific applications, in particular for genome analysis. Success of biological application has attracted interest from other compute-intensive sciences, and we plan to expand portal's usage in the nearest future. In this report our accomplishments will be reviewed and then we'll discuss the portal's potential usage.

Author: Mr AULOV, Vasiliy (NRC Kurchatov Institute)

Co-authors: Mr NOVIKOV, Alexander (National Research Centre "Kurchatov Institute"); Dr KLIMENTOV, Alexei (Brookhaven National Lab); Mr POYDA, Alexey (NRC KURCHATOV INSTITUTE); Mr DRIZHUK, Daniel (NRC Kurchatov Institute); RYABINKIN, Eygene (NRC "Kurchatov Institute"); Mr TERTYCHNYI, Ivan (NRC Kurchatov Institute); Mr MASHINISTOV, Ruslan (NRC Kurchatov Institute)

Presenter: Mr POYDA, Alexey (NRC KURCHATOV INSTITUTE)

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