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Cloud infrastructure at JINR

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To fulfill JINR commitments in different national and international projects related to modern information technologies usage such as cloud and grid computing as well as to provide the same tools for JINR users for their scientific research the cloud infrastructure was deployed at Laboratory of Information Technologies of Joint Institute for Nuclear Research. OpenNebula software was chosen as a cloud platform. Initially it was set up in simple configuration with single front-end host and a few cloud nodes. Some custom development was performed to tune JINR cloud installation to fit local needs: resources request via web form in the cloud web-interface, cloud utilization statistics, user authentication via kerberos, custom driver for OpenVZ containers. Because of high demand in that cloud service and its resources over-utilization it has been re-designed to cover increasing users' needs in capacity, availability and reliability. Recently a new separate cloud instance has been deployed in high-availability configuration with distributed network file system. As soon as testing and benchmarking phases will be successfully passed all users' virtual machines will be migrated from old cloud instance to the new one. ALso it's planned to add more cloud nodes soon.

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