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Extending computing facilities from local to the cloud: hybrid solutions for computing clusters

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Private and public cloud infraestructures had become a reality in the recent years. Science is looking at this solutions to extend the amount of computing and storage facilities for the research projects that are becoming bigger and bigger. This is the aim of Helix Nebula Science Cloud (HNSciCloud) a project lead by CERN in which we submitted two use cases for the astrophysics projects MAGIC and CTA. Both use cases had the purpose to create a hybrid environment to provide a powerful tool based on the Data Analysis as a service (DAaaS) paradigm.

In order to fulfill different requirements, we considered three scenarios: the first one, in the context of MAGIC, we implemented an analysis orchestrator by using the native cloud APIs, in order to send jobs to both cloud providers. The second one was by configuring DIRAC-VM in order to extend DIRAC computing environment for CTA to the cloud. And the last one was to extend the computing facilities at PIC by adding HTCondor cloud nodes transparently to the local farm, using PIC native tools like network, puppet and htcondor tuning.

Desired length

15

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