Open Access to Hybrid Clouds with DIRAC

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DIRAC project has been involved in some use cases in the EGI Fedcloud for testing purposes. It has demonstrated the ability to aggregate different IaaS providers in an interoperable and transparent manner to support SaaS in smart science. Recently, DIRAC for EGI pilot portal is deploying an open access to eInfrastructures for several use cases. In addition to traditional EGI Grid resources there is the possibility to connect with EGI Fedcloud, which is the simplest deployment option for some of the use cases because they particular platform requisites can be easily integrated in a virtual machine. Furthermore, technical collaborations between DIRAC and commercial clouds opens the possibility of using DIRAC as a cloud broker of an hybrid nature, which depending on user requirements can choose private cloud, federated cloud or commercial cloud in a transparent manner.

Wider impact and conclusions

The technical possibility of operating hybrid clouds opens an opportunity window for a new computing model, where resource allocation can be provided in pay-per-use basis and the illusion of unlimited availability. This possibility can coexisting with resources owned by EGI Fedcloud, and can be useful in some particular cases, for example a high power peak demand which can not be attended by federated installed capacity, because reasons of time constrains.

Description of work

VMDIRAC is the cloud extension of DIRAC. Recently, v1r0 is out, and it has been tested to connect OpenNebula, OpenStack and Amazon EC2 IaaS providers. It is the result in the code consolidation to reach a production level engine. Therefore, DIRAC is ready to operate cloud hybrid clouds.

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