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Adopting SAGA standard in Science Gateways

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Science Gateways are considered as valid and innovative tools to increase Grid adoption and usage. Hiding the complexity of the Grid environment could indeed allow an easy access to e-Infrastructures to large Virtual Research Communities reducing the skills needed today to fully exploit them.

In the Scientific Gateway design, the adoption of international standards should be considered as a mandatory practice in order to protect the investments in the creation of these high level user interfaces from middleware changes and lack of interoperability. In this way, Scientific Gateways can become “doors” to huge e-Infrastructures made of resources coming from different kind of grid infrastructures and connected via standard interfaces. For the above considerations we have decided to integrate in a series of Scientific Gateways we are developing, referring to different initiatives and scientific domains, the Simple API for Grid Applications (SAGA) Core API, a high level, application-oriented, software library for Grid application development specified by the Open Grid Forum. SAGA allows to create a unique interface towards different middleware stacks and makes Scientific Gateways able to exploit resources coming from different Grid worlds.

Since our main requirement was to create generic modules allowing us to quickly develop new Scientific Gateways, we have decided to design and develop a software module able to interconnect the Scientific Gateway presentation layer and the underlying Grid infrastructures. In this way, creating a new Scientific Gateway can be reduced to the development of the presentation layer. This core module of our Gateways provides an interface towards the presentation layer and an interface, based on SAGA, towards the Grid Infrastructures. As SAGA implementation, we have adopted JSAGA (<http://grid.in2p3.fr/jsaga/>). The architecture of the portlets developed will be presented as well as some use cases.

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