SAGA http://saga.cct.lsu.edu

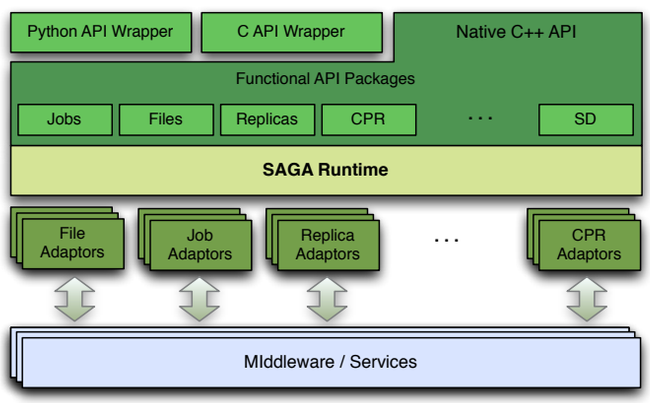
A Simple and Powerful Abstraction Layer

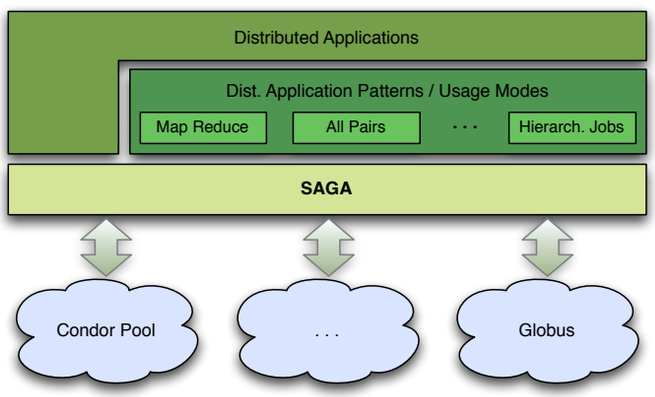
SAGA - the *Simple API for Grid Applications* is a proposed recommendation of the Open Grid Forum (OGF) and defines a high-level programmatic interface for developers of Distributed Applications. The fundamental idea of SAGA is to lower the barrier for applications and application scientists to utilize distributed infrastructure by providing a simple and uniform interface to the most often required functionality in order to construct general purpose, extensible, dynamic and scalable applications.

Reference Implementation

The SAGA team at CCT strives to implement a fully OGF compliant SAGA C++ reference implementation including the runtime system, middleware adaptors and API language bindings for Python and C [l. fig.]. Currently, the implementation comprises the functional packages and middleware adaptors for:

- Job Submission & Management (Globus GRAM. OMII GridSAM, Condor, Fork)
- Filesystem Access (Local Filesystems, Globus GridFTP)
- Replica Management (SQL-based, Globus RLS)
- Advert Services (SQL-based)
- Checkpoint & Recovery Services (Migol)
- Stream Handling & Remote Procedure Calls





Enabling Distributed Application

SAGA has been used to support a wide range of applications types and usage modes [fig. r.]. The SAGA team at CCT is actively involved in the development of prototypes for:

- Applications with novel and agile distributed execution modes. For example, we have re-architected a Kalman-Filter based application to enable it to determine at run time, the optimal resource to launch sub-jobs.
- Adaptive distributed *Replica Exchange* applications which can opportunistically exploit multiple resources concurrently without prior arrangement and dynamically reallocated resources.
- Novel applications written forexplicit deployment on distributed infrastructure, i.e. first-principle distributed applications.