

Extending SAGA's Data Transfer Capabilities: Interfacing SAGA with GlobusOnline's Data Transfer Service

Zachary Mance^{1,2} & Ole Weinder¹

¹Center For Computation & Technology, Louisiana State University

²Department of Computer Science, Joliet Jr. College

Introduction:

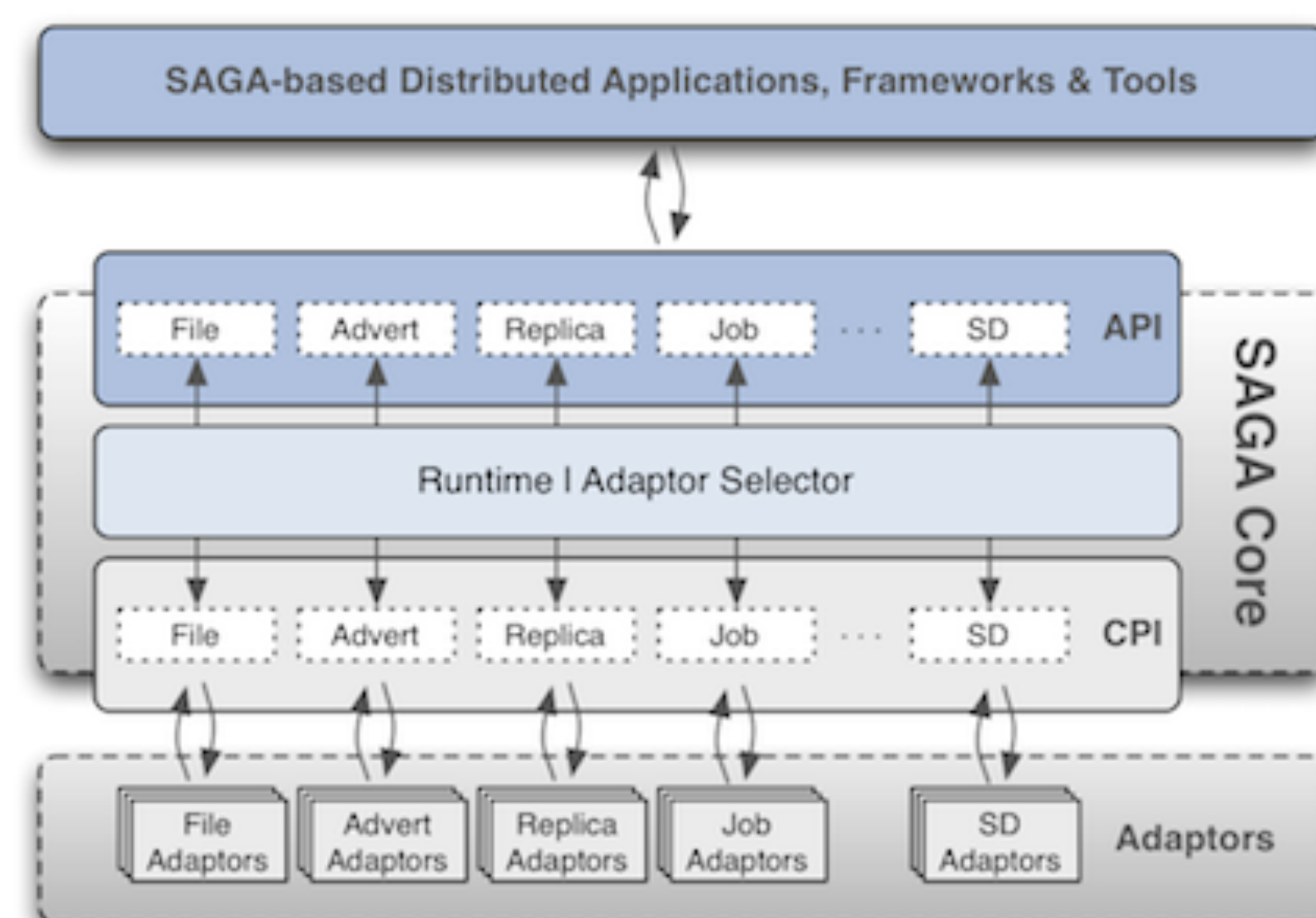
²GlobusOnline offers a reliable file transfer service (RFT), which makes it easy for any user to move any data anywhere. Integrating SAGA with GlobusOnline, will allow developers using SAGA an easy and reliable way to transfer data across any distributed system(s). SAGA users will be able to submit file transfers by selecting two endpoints and the data they would like to move. By allowing the GlobusOnline adaptor to do data transfers, users can spend their time more efficiently and focus on the more important tasks.

Overview of GlobusOnline (GO):

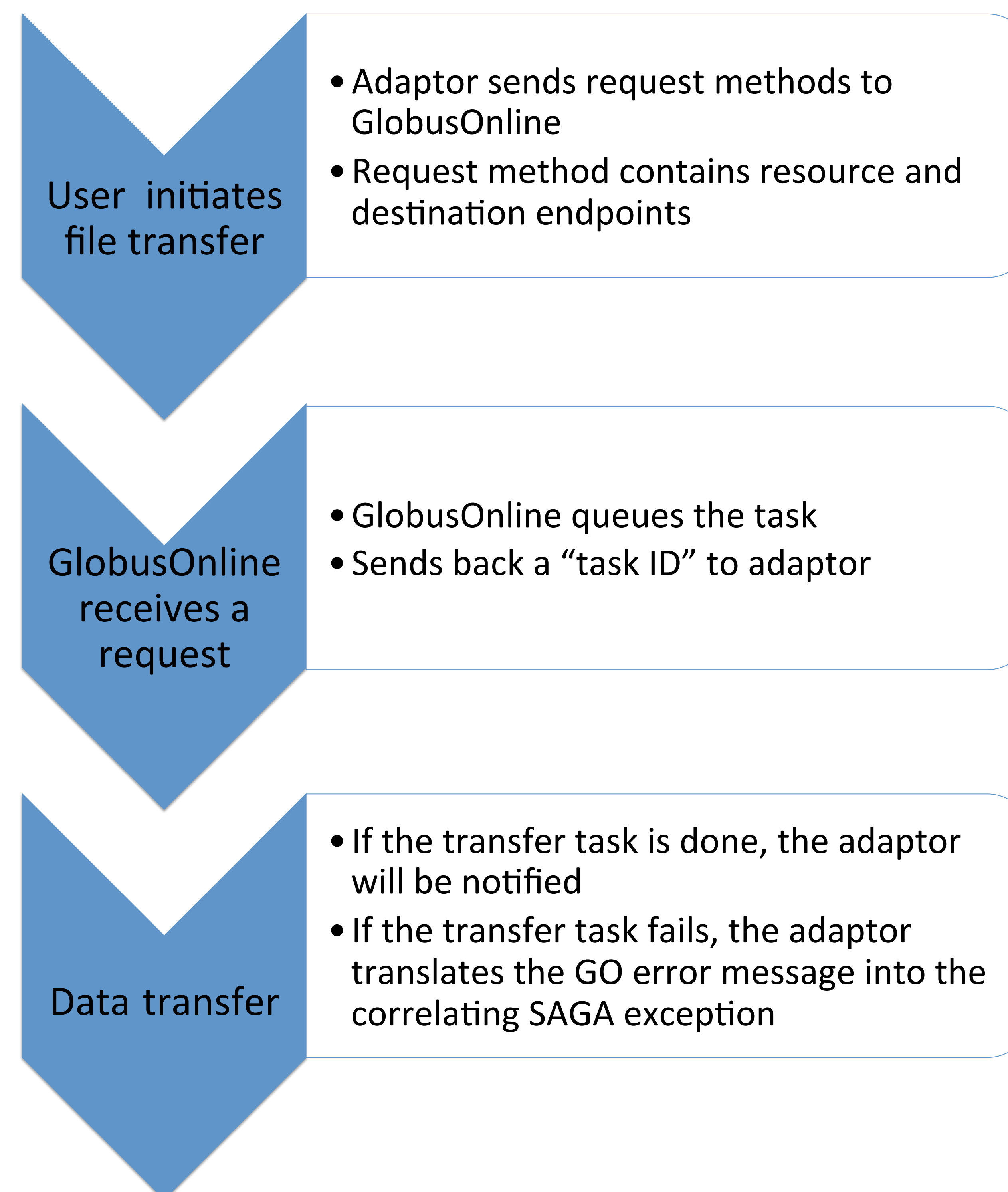
²With a "job schedule" like functionality, GO makes cumbersome file transfer capabilities easily accessible to any researcher with an internet connection. It allows users to spend less time watching for errors, and more time focused on their actual work.

Overview of SAGA:

¹A Simple API for Grid Applications is a framework that helps manage distributed applications in grid environments. The main idea of SAGA is to provide developers with a simple interface to assist in building distributed applications. ¹SAGA's goal is to provide the user(s) with the basic functionality needed to build large distributed applications, while at the same time keeping the underlying detail separate from their applications.



Adaptor Design:



SAGA vs. GlobusOnline:

GlobusOnline's Method

From a developer's view, one way to use GO's API is to use the command line tool cURL to submit a transfer request. With the request method, either a JSON, XML, or HTML object that contains GO specific parameters, needs to be passed along with the request. A JSON example is shown below.

```
{
  "submission_id": "12345",
  "DATA_TYPE": "transfer",
  "sync_level": null,
  "length": 1,
  "deadline": "2011-07-19 00:31:59.653181+00:00",
  "DATA": [
    {
      "recursive": false,
      "DATA_TYPE": "transfer_item",
      "destination_path": "/path/to/destination",
      "source_path": "/path/to/source",
      "source_endpoint": "user#ep1",
      "destination_endpoint": "user#ep2"
    }
  ]
}
```

SAGA's Method

```
F= saga.filesystem.file("globusonline://user@ep1/
data")

F.copy(globusonline://user@ep2/)
```

Adaptor features:

- Addition & activation of endpoints
- List endpoints
- Submission & cancelation of transfer requests
- Monitoring of tasks

Adaptor elements:

- GlobusOnline Transfer API
- cURLpp (c++ wrapper)
- HTTP request methods GET, PUT, & POST

References:

- [1] Simple API for Grid Applications, <http://saga.cct.lsu.edu/>
- [2] GlobusOnline, <https://www.globusonline.org/docs/>