Contribution ID: **75** Type: **not specified**

Linking EUBrazilCloudConnect and EGI Federated Cloud

Thursday, 12 November 2015 15:30 (20 minutes)

EUBrazilCloudConnect (EUBrazilCC) - EU-Brazil Cloud infrastructure Connecting federated resources for Scientific Advancement (2013-2015) aims to develop a state-of-the-art Cloud Computing environment that efficiently and cost-effectively exploits the computational, communication and data resources in both the EU & Brazil with selected interoperable and user-centric interfaces, which involve the support to complex workflows and access to huge datasets.

EUBrazilCC strongly focuses on interoperability. It has adopted mainstream standards in clouds and integrates with different services in EGI at the level of the infrastructure, the platform components and the use cases.

Regarding the infrastructure, UFCG has developed fogbow, a lightweight federation middleware for on-premise cloud providers. Fogbow's API implements an extension of the OCCI standard. To create a VM in a fogbow federation a client issues a request with the resource specification (eg. VM flavour, image, requirements, etc.) and receives a handle for this request. Eventually the request is fulfilled and the client can use the request handle to have access to the pertinent information to access the VM (eg. IP address). In this way, fogbow can be used to deploy VMs across multiple EGI Federated Cloud sites. Fogbow can also make use of vmcatcher to prefetch VMIs registered in the EGI appDB. EUBrazilCC uses VOMS for the authorisation and has registered a VO in the EGI databases (eubrazilcc.eu). All the services in EUBrazilCC uses VOMS for authentication.

EUBrazilCC incorporates several tools for the brokering of resources and the deployment of customised Virtual Appliances. Among those tools, two of them are already used within EGI Federated cloud, Infrastructure Manager (IM) and COMPSs, providing a seamless integration of both infrastructures. In this way, IM can be used to deploy and install the same configuration in different infrastructures, using the same configuration specification and based on a common basic instance. COMPSs can also elastically deploy a virtual infrastructure adapting the number of resources to the actual computational load and run the same workload in hybrid environments composed of public and private providers, provided that compatible VMIs are available in the target infrastructure.

Finally, interoperability is also aimed at the level of the applications. EUBrazilCC will register the VMIs of the applications in the EGI appDB. Currently, there are VMIs for the Leishmaniasis Virtual Lab and the eScience Central workflow engine that uses it, as well as for COMPSs and for the mc2 platform for developing scientific gateways. All of them can be deployed in EGI Federated Cloud.

Summary

The rest of the software stack from EUBrazilCC comprises PDAS –Parallel Data Analysis, a data analytics framework developed by the Euro-Mediterranean Centre for Climate Change and CSGrid, a framework to homogenise the access to cluster-based infrastructures. Three use cases are developed on top of them addressing epidemiology, medical simulation and climate change.

Primary author: Dr BLANQUER, Ignacio (UPVLC)

Co-authors: LEZZI, Daniele (Barcelona Supercomputing Center); BRASILEIRO, Francisco (Universidade Federal de Campina Grande)

Presenter: Dr BLANQUER, Ignacio (UPVLC)

Session Classification: Community clouds