Contribution ID: **357**   Type: **Poster**

Optimizing the resource usage in Cloud based environments: the Synergy approach

Thursday, October 13, 2016 4:30 PM (15 minutes)

Managing resource allocation in a Cloud based data center serving multiple virtual organizations is a challenging issue. In fact, while batch systems are able to allocate resources to different user groups according to specific shares imposed by the data center administrators, without a static partitioning of such resources, this is not so straightforward in the most common Cloud frameworks, e.g. OpenStack.

In the current OpenStack implementation, it is only possible to grant fixed quotas to the different user groups and these resources cannot be exceeded by one group even if there are unused resources allocated to other groups. Moreover in the existing OpenStack implementation, when there are no resources available, new requests are simply rejected: it is then up to the user to later re-issue the request. The recently started EU-funded INDIGO-DataCloud project is addressing this issue through 'Synergy', a new advanced scheduling service targeted for OpenStack.

In the past we solved the same problem by adopting the batch systems and today, with Synergy, we adopt the same approach by implementing in OpenStack the advanced scheduling logic based on the SLURM fair-share algorithm. This model for resource provisioning ensures that resources are distributed among users following precise shares defined by the administrator. The shares are average values to be guaranteed in a given time window by using an algorithm that takes into account the past usage of such resources.

We present the architecture of Synergy, the status of its implementation, some preliminary results and the foreseen evolution of the service.

Tertiary Keyword (Optional)

Secondary Keyword (Optional)

Computing middleware

Primary Keyword (Mandatory)

Cloud technologies

Primary author: ZANGRANDO, Lisa (Universita e INFN, Padova (IT))

Co-authors: FANZAGO, Federica (Unknown); VERLATO, Marco (Universita e INFN, Padova (IT)); SGARA-VATTO, Massimo (Universita e INFN, Padova (IT)); Dr LLORENS, Vincent (CNRS)

Presenter: ZANGRANDO, Lisa (Universita e INFN, Padova (IT))

Session Classification: Posters B / Break

Track Classification: Track 7: Middleware, Monitoring and Accounting