

Introduction

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Topic chairs

There has been a considerable discussion in the past years on the similarities and differences between Clouds and Grid Computing. This included extreme positions whether Clouds are a pure marketing hype, or whether Grids became obsoleted by failing a wide commercial adoption as a resource sharing platform. Now, we can assess that neither is true nor necessary. Grids and clouds share many similarities as they both address questions concerning access to resources in a large-scale distributed environment. Thus, there is significant overlap between the two areas in the ways that infrastructures may evolve. Grids became a common production infrastructure especially in the scientific domain including cluster and HPC resources. Clouds became a common provisioning paradigm in service infrastructures with many public/commercial providers or private clouds within data centers. It is very successful in creating a layered architecture that separates the infrastructure access from applications through virtualization. Infrastructure as a Service can be utilized to run arbitrary applications. Similarly, applications can be broken down to several software services which run on such virtual infrastructures. Grids target a similar space by combining resources from different providers in a networked infrastructure.

Both domains cannot only co-exist, but also benefit each other. The core research challenges are very similar and include, for example, topics like resource management, scheduling, SLA management, security or workflow management.

The topic 6 of Euro-Par addresses such core research topics Grid Cluster and Cloud Computing. The call for participation asked for contributions on Grid and Cloud middlewares, applications and platforms. In the following, you will find contributions which focus on different aspects.

We saw an increased interest in the aggregation and federation of Grids and Clouds which requires suitable models and protocols to interoperate between systems. This includes questions on migration of virtual machines between cloud providers as well as the consideration of virtual clusters on top of Clouds. Such approaches need suitable solutions for efficient data management.

Similarly, Quality-of-Service and Service-Level-Agreement gained attention in the scientific and industrial domain. The set of selected papers include work in the area of SLA management for Cloud environments in which a rule based approach is proposed to manage such agreements.

Efficiency of infrastructure management remains a key topic. This includes aspects of Green computing by considering carbon efficiency of nodes. The load balancing and scheduling has been subject to research for many years. However,

this aspect is still very relevant due to the complexity at hand. This year's contribution include autonomic self-management aspects, as well as optimization mechanisms through load-balancing

The number of submission to this topic reflected the high interest in this area. The selection process was very competitive and we are happy to achieve a very good coverage of different perspectives. All papers were reviewed by at least three, usually four, independent reviewers. The selection process was not easy as many papers provided very good research insights and interesting approaches.

We would like to thank all the reviewers, for their time and effort, who helped us in the selection process. At the same time, we would like to thank all authors who help to maintain Euro-Par as one of the premier scientific conferences at which innovative ideas for Grid, Cluster and Cloud computing are presented.