

TOPIC 6 - CLUSTER AND CLOUD COMPUTING

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DESCRIPTION

While the term Cluster Computing is hardware oriented and determines the organization of large computer systems at one location, the term Cloud Computing addresses the use of such large computer systems. Since Cluster and Cloud Computing complement each other, there are interdependencies between many research questions addressing these topics. In this Topic of EuroPar, we will particularly focus on these interdependencies in addition to the results specifically addressing issues belonging only to one of both areas.

In Cluster Computing, important research topics focus on performance, reliability, and energy efficiency as well as the impact of novel processor architectures. Since Cloud Computing tries to hide hardware and system software details from the users, research issues include various forms of virtualization and their impact on performance, resource management, and business models that address system owner and user interests.

Further, it is interesting to address Cloud Computing on top of several smaller clusters and its advantages with respect to reliability and load balancing on a high abstraction level as well as the consideration of networks.

Finally, the combination of local computer installation together with Cloud Computing, also referred to as “fog/edge” computing has received growing interest in recent time. This concept has led to many research questions, like an appropriate distribution of subtasks to the available systems under the consideration of various constraints.

Since many research studies in this area use experimental evaluation, we expect the authors reporting such studies to provide sufficient study details, if necessary complemented by a possibly web-based supplement, to allow a technical evaluation during the review process and reproducibility and replicability of results if the submission is accepted.

Focus

- Cloud-enabled applications and platforms
- Interoperability and portability in Cloud Computing
- Aggregation and federation of Clouds
- Hybrid, Fog and Edge computing
- Energy efficiency in Cluster and Cloud Computing
- Resource/Service/Information discovery in Clouds
- Resource management and scheduling in Clusters and Clouds
- Cloud programming models, tools, and algorithms
- Dependability, adaptability, and scalability of Cloud applications
- Security and privacy for Clouds
- Workflow management in Clouds and Clusters
- Accounting, billing and business models for Cloud Computing
- Management of resources and applications in Clusters and Clouds
- Quality-of-Service and Service-Level-Agreement in Clouds
- Containers and serverless computing

