NorduGrid 2016

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Scientific Programme

This year's theme "The way forward in distributed computing: evolution or revolution?" addresses the challenge faced by many scientific communities: how to survive the data tsunami in the shade of the clouds? The conference will cover different aspects and directions of future distributed computing systems. The conference will consist of plenary sessions only, within which four major topics are identified:

Virtualised infrastructures for data and computng

Virtualisation techniques matured into widely used solutions for a large variety of problems, from service hosting to resource provisioning, and so on. Virtualisation has particular appeal in the context of distributed computing and data storage as well. This sub-topic addresses approaches to enabling distributed computing and storage services with the help of virtualisation.

Cluster resource management

In the context of this sub-topic, resource manager is software layer that provides control and offers organised access to the capacity of computational entities, usually set up as a cluster or a data center. ARC interfaces to this software layer. With the appearance of multicore computing units, heterogeneous nodes and the explosion of the number of cores, resource managers face new challenges. Integration with new application provisioning technologies, scaling out to external resources or addressing special (remote) I/O requirements are all pushing for new solutions.

Exploiting supercomputers and distributed infrastructures

The sub-topic addresses the emerging trend of handling supercomputer allocations and underused capacity as constituents of distributed infrastructures. ARC enables several approaches to this end, but it is still a long way to be able to utilise supercomputers in a manner similar to clusters. Computationally-intensive applications are the obvious exploitation candidates, while data-intensive tasks are much more challenging.

New approaches to networked computing

Future extreme computing and extreme scale data processing needs can be addressed by advancing in several directions. One such direction is to make use of networked resources: databases, archives, storage facilities, computing facilities, etc.. In order to reach exascale performance, new approaches are necessary: new technologies, algorithms, methods, tools and services. This sub-topic is open to all sorts of breakthrough ideas that might help reaching exascales without having to build huge supercomputers.