

## **Workshop on Job Scheduling Strategies for Parallel Processing – JSSPP**

### **Workshop Theme**

The JSSPP workshop addresses all scheduling aspects of parallel processing. Large parallel systems have been in production for about 20 years, creating the need of scheduling for such systems. This workshop was created in 1995 to provide a forum for the research and engineering community working in the area. Initially, parallel systems were very static. Machines were built in fixed configurations, which would be wholesale replaced every few years. Much of the workload consisted of parallel scientific jobs. These jobs were static, running on a fixed number of nodes. Systems were primarily managed via batch queues. The user experience was far from interactive; jobs could wait in queues for days or even weeks.

A little over 10 years ago, the emergence of large scale, interactive, web applications began to drive the development of a new class of systems and schedulers. These systems would run “services”, which would essentially never terminate (unlike scientific jobs). This created systems and schedulers with vastly different properties. Moreover, this created an enormous demand for computing resources, resulting in a commercial market of competing providers. At the same time, the increasing demands for more power and interactivity have driven scientific platforms in a similar direction, causing the lines between these platforms to blur.

Nowadays, parallel processing is much more dynamic and connected. Many workloads are interactive and make use of variable resources over time. Complex parallel infrastructures can now be built on the fly, using resources from different sources, provided with different prices and quality of services. Capacity planning became more proactive, where resources are acquired continuously, with the goal of staying ahead of demand. The interaction model between job and resource manager is shifting to one of negotiation, where they agree on resources, price, and quality of service. These are just a few examples of the open issues facing our field.

### **Workshop Organizers**

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