# Special Issue:
# Adaptive Grid Middleware

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Grid computing research focuses on building large-scale computing infrastructures by linking computing facilities at many distributed locations. Significant effort has been spent in the design and implementation of middleware for enabling computational Grids. These software packages have been successfully deployed and it is now possible to build clusters beyond the boundaries of a single local area network. However, the challenging problem of dynamically allocating resources in response to application requests for computational services remains unsolved. Adaptive middleware is software that resides between the application and the computer operating system and enables an application to adapt to changing availability of computing and networking resources.

As a continuation from its successful predecessor, the second workshop on *Adaptive Grid Middleware* had been held in conjunction with *PACT 2004* in Juan-les-Pins, France, on September 30, 2004. From the submitted manuscripts, the reviewing committee selected a strong workshop program, out of which a small set of strong papers has been selected for this special issue, which we proudly present here:

- In *Middleware adaptation with the Delphoi service*, Maassen et al. present a platform for providing performance information and predictions, enabling middleware components to adapt their behavior accordingly.
- In *Resource reservations with fuzzy requests*, Röblitz et al. present a scheme for flexible resource reservations that optimizes scheduling decisions based on fuzzy requirement descriptions and actual resource information.
- In *How to bring together fault tolerance and data consistency to enable grid data sharing*, Antoniu et al. close this special issue, by proposing an architecture for fault-tolerant data replication.

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