Title: Enabling e-Science with the Nimrod family of tools.

Prof. David Abramson, Monash University

Grids couple geographically distributed resources such as high-performance computers, workstations, clusters of computers, data repositories and scientific instruments. They have begun to provide the infrastructure to support global collaboration in ways that were not previously possible by facilitating the construction of virtual organizations.

Monash University, and the Distributed Systems Technology Research Centre, are Australia's most significant research groups in Grid computing, and have developed a number of innovative software tools aimed at Grid enabling legacy applications. One of these, Nimrod/G, allows users to explore robust design options by supporting parametric execution on the Grid. Nimrod/G operates both as a user level tool, complete with a web based portal, and also as a middleware layer that can be targeted by application programs.

It supports the design and execution of very large computational experiments in which a given application is run on a diverse range of distributed resources. Nimrod/G utilizes the Globus tool kit as well as stand alone schedulers such as PBS. A variant of Nimrod/G, called Nimrod/O, allows scientists to perform robust design, automatically exploring search space across multiple model executions.

This tutorial will provide an introduction to robust design principles and parametric computing. Attendees will learn how to perform parametric search on Clusters with a tool called EnFuzion, as well as how to use Nimrod/G and Nimrod/O on the Grid.

This course is designed for scientists and engineers who can utilize distributed high performance distributed computers in their daily work.