

## Grid Computing and Distributed Systems Laboratory

DEPT. OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING  
THE UNIVERSITY OF MELBOURNE, AUSTRALIA

The **Grid Computing and Distributed Systems (GRIDS)** Laboratory is a software research and innovation group at the University of Melbourne, Australia. The Lab is actively engaged in design and development of next-generation computing systems and applications that aggregate by dynamically leasing services of distributed resources depending on their availability, capability, performance, cost, and users' quality-of-service requirements.

As part of its flagship Gridbus Project, the lab is developing Grid computing technologies that power the emerging e-Science and e-Business applications. The GRIDS lab carries out its research and innovation in collaboration with national and international application scientists and industries. Our research sponsors include: Australian Research Council, DIISR, Sun, Microsoft, IBM, and Platform. The Lab's innovations are commercialized through Manjrasoft Pty Ltd.

### THE GRIDBUS PROJECT

The Gridbus project is engaged in the creation of open-source specifications, architecture and a reference Grid toolkit implementation of service-oriented grid and utility computing technologies for e-Science and e-Business applications. The Gridbus software is being used in Grid-enabling a number of applications in science, engineering, and commerce.

#### **The research probes include:**

- Service-Oriented Grid Architecture
- Market Oriented Resource Management.
- Grid Service Broker
- .NET based Grid Framework (Aneka)
- Grid Workflows and Scheduling
- Service Level Agreements & Resource Allocation Systems (Libra).
- Grid Simulation Toolkit (GridSim).
- Resource Usage Accounting (GridBank).
- Grid Application Development Environments
- Grid Market Directory (GMD).

- Application Targets include: Drug Discovery (*WEHI*), Neuroscience (HFI & *Osakai*), Kidney Modelling, Catchment Hydrology (eWater CRC), Brain Imaging (Dartmouth Medical School), and Financial Investment Risk Analysis (*Spain*).
- Open SensorWeb Architecture
- InterGrid – Internetworking Islands of Grids
- Content Delivery Networks
- Cloud Computing

### CORE GRIDBUS TEAM @ MELBOURNE

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