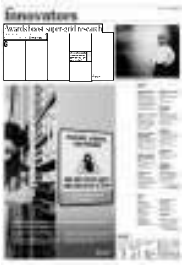
MEDIA MONITORS
INCISIVE INSIGHT



Age
30/08/2005
Page: 2
Section: Next
Region: Melbourne Circulation: 196250
Type: Capital City Daily
Size: 402.77 sq.cms.
Published: MTWTFS-

Awards boost super-grid research

Link-ups aid scientists' studies into the workings of kidneys and the brain, reports **Beverley Head**.

GRID computing technologies that allow faster analysis of complex data and underpin international collaboration received a lift from the most recent round of Australian Research Council grant allocations.

Through its Special Research Initiative e-research program, the council awarded $3.62 million over the next two years. Two grants, worth a total of more than $200,000, were awarded to Melbourne University and will be spent to harness computer grids for medical applications.

This round promotes a stronger e-research network by encouraging local scientific collaboration, international links and the development of high-quality research in emerging areas. Computing grids that link computers over high-speed communications networks give users access to computer cycles-on-demand to analyse knotty problems and are the logical infrastructure for e-research.

Leading the university's grid computing projects is Dr Rajkumar Buyya, fellow of grid computing and head of the Gridbus project, an initiative to develop grid computing and business technologies to support e-science and e-business. Dr Buyya and his team will work closely with medical scientists to understand the problems they need to solve and then develop the infrastructure and tools for their grid.

"It should be possible to halve the time for analysing brain scans using the grid."

One grant, for nearly $125,000, will be spent to develop tools and techniques to allow scientists in Australia working on kidney research to collaborate with teams working on similar projects in New Zealand, the US and France.

"Each centre has different renal models, and they want to use the different models for analysis. Using the grid, researchers want to be able to invoke the remote services for modelling and then analyse those distributed models," Dr Buyya says.

This will demand the creation of tools and techniques allowing international collaboration over a grid.

Besides Dr Buyya and his team, Dr Andrew Lonie of the information systems department at the university, and Professor Peter Harris, of the physiology department, are working on the project.

Dr Lonie says the main thrust is to develop techniques and tools to promote international collaboration. It is part of a much larger kidney simulation project, attempting to understand the operation of the kidney at a cellular level and map that in a computer model.

This is just one element of a massive international initiative called the Physiome project that attempts to build a computer model of human physiology. Dr Lonie says Physiome is a successor to the Genome project, and the "next step in understanding human biology, with the ultimate aim of constructing a quantitative virtual human" that would allow faster and cheaper development of drugs.

"Modelling the kidney is a very complex task and at some time we have to bring everything together," he says.

The team hopes the grid will allow renal models developed in Australia, New Zealand, France and the US to be easily shared and accessed by scientists around the world.

A second grant, for $80,000, will improve technologies for analysis of magnetic resonance imaging brain scans, and Dr Buyya's team will work with the National Neuroscience Facility on this project. He says it takes about 20 hours to analyse a brain scan but he anticipates that it should be possible to bring that down to about an hour using the grid.

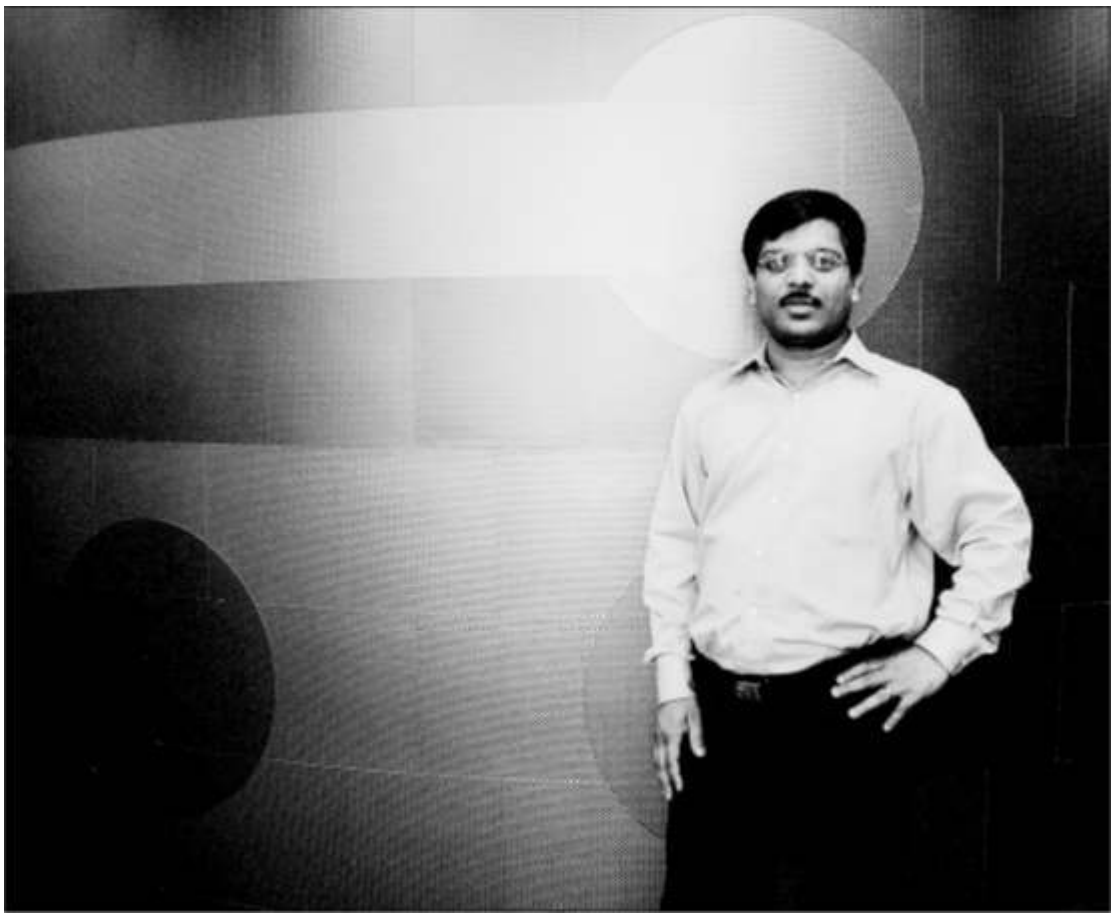
"And it could be just a few minutes if we could use many more computers," he says. The research will analyse the scaleability of grid computers and how easily more computers can be added to the grid.

Middleware will ensure that data sent to a grid is secure and privacy assured.

LINKS
Rajkumar Buyya www.buyya.com
Australian Research Council
www.arc.gov.au

MEDIA MONITORS
INCISIVE INSIGHT

Age
30/08/2005
Page: 2
Section: Next
Region: Melbourne Circulation: 196250
Type: Capital City Daily
Size: 402.77 sq.cms.
Published: MTWTFS-



Dr Rajkumar Buyya, fellow of grid computing at Melbourne University.