LARRY ELLISON, chief of enterprise database giant Oracle, stood in front of thousands of customers at Oracle OpenWorld in San Francisco last month and told them they would eventually all migrate to enterprise computing grids. He repeated himself in the style of a preacher: “If you were to ask me what percentage of our users will be using grids, I’d say everybody.”

Then he paused to search eyes in the audience, daring a response.

It's not clear what he saw, but he didn't try to make the point again.

Oracle has been very vocal in promoting the technology, which promises high-computing power on low-cost non-proprietary hardware.

While it has gained acceptance in academic and scientific research environments, however, mainstream enterprises are reluctant to put it to the test.

IDC storage research director Graham Penn estimates only a handful of enterprises in Australia have installed grid computing technology.

"Some of the universities, of course, are playing with it, and occasionally you get it in a financial modelling environment but you're not typically seeing it all in a commercial environment."

Grid computing has been given a number of technical and marketing aliases, such as utility computing, clustered computing and on-demand computing.

These have generated some confusion among potential users.

Most industry experts are content to strip away the marketing-speak and adopt a simple definition: lots of computers working together to act as one.

Scientific and engineering professionals began using grid computing in the early 1990s.

The ground work for wider adoption in commercial computing didn't begin until late in that decade.

Under pressure to support the emerging e-commerce sector, in which business outcomes had been unpredictable, the computing industry sought ways to match the sums its customers were investing in technology more closely with their levels of business activity.

Oracle first released its grid technology, called RAC (Real Application Cluster), in 2000 with the Oracle 9i database.

It partnered with computer maker Dell to develop grids made up of low-cost Intel-Linux operating platforms.

Sun Microsystems and IBM, which previously relied on proprietary Unix-based hardware for revenue, came up with their own versions of grid computing.

IBM developed its On Demand strategy of running applications across heterogenous hardware environments on its xSeries of servers, which include the Intel-IBM Power 5 platforms.

Sun developed grid software that allowed AMD Opteron-based systems to be pooled.

It released a pay-per-use grid, so organisations could buy processing time as they would electricity or gas.

The latest version of Oracle's database, 10g, has been certified to multiple databases and applications for up to 100 processors or nodes.

IBM computing business development executive Andrew Brockford says grid computing developed a lot of industry hype.

It may have been "oversold", he says.

"Like a lot of emerging technologies, there's a lot of hoopla and there's a lot of discussion that has been divided.

"Perhaps the concept of the grid has been somewhat oversold by both business and academia," Brockford says.

Sun Microsystems server specialist Robert Becker says the technology can't replace traditional single-servers in every instance. "The reality is that, yes that works for some customers, but a lot of customers went down that path, even here in Australia, and it just did not pan out the way Oracle said it would," Becker says.

Two of Sun's big Australian customers spent a lot of money on failed grid computing projects, he says.
Oracle, which has Qantas as a grid database customer, says Sun's comments are FUD, industry parlance for fear uncertainty and doubt.

Oracle Asia-Pacific vice-president Roland Slee says grid technology isn't "good news" for players that stand to lose in a move from proprietary single-server systems.

"It is very controversial technology because, traditionally, managing large databases required that you have a large computer," Slee says.

"Computers have a high cost and they are also high-margin.

"By virtue of their affordability, grids are very attractive to customers, so they're not always good news for everybody in the marketplace."

The take-up of Oracle's grids in Australia has been impressive with more than 60 customers using RAC deployments of low-cost Linux-Intel server platforms.

Oracle's partner, Dell, is less bullish when it comes to discussing the technology.

"It's fair to say we've seen large-scale grid demonstration projects take place in universities and research institutions, but the take-up of grid technologies in enterprise data centres was always going to follow a different pattern," Dell Asia-Pacific enterprise marketing and alliances manager Justin Boyd says.

Penn says it is a case of "horses for courses".

Grid computing has had some success in financial modelling, but it is more likely to be used in research and academic environments that have lots of spare hardware at hand to experiment with, he says.

It's a courageous CIO who's prepared to try to retrofit the technology to the company's critical business processes, Penn says.

"You've got to be reasonably brave if you're going to be a pioneer; if you're going to change the way you're doing things," he says.

Grid projects work best when the applications run on them can easily be broken into small chunks, he says. "In some cases that's easy because there are millions of very small chunks and it's not a problem," he says.

"If a lot of data has to flow through the networks, maybe you've got to have big pipes."

Brockford says the uptake of grid computing is higher where applications lend themselves to the technology.

However, Sun says it's a straight case of horses for courses. "For certain types of workloads and for larger organisations you need larger vertical servers with more CPUs because there's just no way they can scale to those computing outcomes," Becker says.

Slee says he hasn't come across any situation where Oracle's grid computing can't be applied.

Oracle recently added the NSW Office of State Revenue to its customer list. Slee says the OSR replaced a $1.5 million Unix-based set-up with a $150,000 grid system and doubled its processing performance. Oracle says deployments of its RAC in pure research settings are in the minority, and most of its education customers use it for commercial applications.

Most deployments of Oracle's grid technology locally are in the government sector, followed by finance and telecommunications.

Martin Power, chief information officer of Holmesglen TAFE college in Victoria, has been managing an Oracle grid since 2002.

One of the key advantages of grid system architecture is the ability to provide resources to applications as they are required, he says.

"Where you have a single server and it hits its peak, you just wait until it finishes," he says. "In a grid model you can add extra capacity to that particular function for the time it requires."

Brockford says there is potential for financial institutions to use grids' provisioning ability to cope with peaks and troughs in demand on systems.

For portions of this story concerning Larry Ellison, Andrew Colley flew to Oracle OpenWorld, San Francisco, as a guest of Oracle.

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