

## Grid Computing : *idle hands make light work*

The statement that 'idle hands make light work' may seem like a contradiction in terms but when used in the context of grid computing it highlights the massive potential of a technology that is tipped to be the 'next big thing'.



At present Grid Computing is firmly established in the realms of Academia and Research and its impact has been so phenomenal that some have predicted that it will be the biggest revolution in computing since the advent of the Internet. But what is grid computing?

Ryan Quinn, IT Recruitment Consultant with VanRath Search and Selection explains, "Grid Computing is a rapidly emerging technology that borrows from past technical concepts - it isn't hard to see the parallels between the development of Grid computing with that of Web services, XML, and other technical arenas."

"If you think of the Internet as a communications network then Grid computing is a network of computation. These pooled assets are known as virtual organisations. A simplistic analogy of this paradigm would be the downloading of screensavers by multiple users to create super computers during idle periods."

Pharmaceutical Company, Parabon, simulate the interaction between cancer cells and possible treatment drugs using such a tool. Parabon CEO Steven Armentrout, has said

"It allows individuals to directly contribute to cancer research and may lead to important discoveries."

**Grids can be distributed across the globe; they are heterogeneous, (some PC's, some servers, maybe even mainframes). Grids can be autonomous, and can access resources in different organisations.**

Ryan said, "In today's economic climate most IT departments are being forced to do more with less. Budgets are tight and resources are thin, however, what these companies do have is an abundance of idle computing power. Grid Computing would allow companies to tie idle resources together into a pool of potential labour and manage these resources. This in turn allows more work to be done more quickly - possibly even getting products to market faster."

"From a developer's perspective, Grids are virtual organisations using a common suite of protocols. An effort is underway to organise these protocols into the Open Grid Services Architecture.

(OGSA), defined as an architecture because it is built on a well-defined set of interfaces, all based on open standards."

"Open standards and protocols will lead to the building of services. Services are the key to this architecture, as services will allow users to do things on the Grid. A user is said to create an instance of a service. Much akin to a class instance in Object Oriented Programming. Services can be light and transient or deep and require wide support from the Grid."

"Powerful services can hide the complexity of what they actually do, much in the same way as Objects do in Object Oriented Programming. A parallel can be drawn from the fact that when we plug the toaster into a wall and it heats the bread we instinctively dumb down this 'service'. The fact that a fuel was burned, generating electricity and sent via a network or 'Grid' is abstract to the service. Empowering computation by using economic open standard resources is the key to this architecture."

"There are challenges however - at the moment most applications use a processor - on a grid this work is chopped up and sent over the grid. The user or application

needs to be able to get the information back and it has to be intelligible."

"Security is probably the largest factor that needs to be taken into consideration; you don't want anyone hogging grid resources. And adding your system to the Grid has not only to benefit the user, but must protect them from the Grid. The Grid must deal with all these issues and still remain a more performant option than traditional methods of computation."

Ryan concluded, "At VanRath we pride ourselves on staying up to date with the latest technical issues that effect both our clients and candidates. For a confidential discussion concerning current IT opportunities in Northern Ireland please do not hesitate to contact either myself or my colleague Paul Wright, on 0870 744 1000".