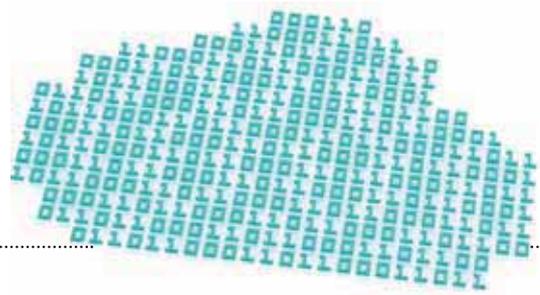# A cloudy future for IT

By Jason Connolly, Next Generation IT

Virtualisation and Cloud Computing are buzz words in IT. Local businesses want to know if there is more to this technology than just hype, if it's relevant and what the benefits are.

So what is virtualisation?

Today's powerful server hardware was originally designed to run only a single operating system, but virtualisation breaks that bond, making it possible to run multiple operating systems (servers) and applications on the same computer at the same time, increasing the utilisation and flexibility of the hardware.

The market leaders in virtualisation are VMware. Its approach to virtualisation inserts a thin layer of software directly onto the server hardware. This software layer creates virtual machines and contains a virtual machine monitor or "hypervisor" that allocates hardware resources dynamically and transparently so that multiple operating systems can run concurrently on a single physical computer without even knowing it.

Am I not better to stick with physical servers?

Virtualisation technology has now become both affordable and widely adopted. This technology provides a cost-effective, high performance system with significant advantages over the traditional single application/single server approach. This consolidates the number of physical servers required, minimising costs, but also providing increased flexibility to rapidly adapt and expand the system to meet the dynamic demands of a business environment. For example, a new business application can potentially be added to the existing system, without the need to purchase an additional server. In this case, the deployment time for the new server can be as little as 30 minutes, versus about a week for the traditional method. What are the benefits of virtualisation? Increased flexibility and performance - the resources of the system, such as processors, memory and disks, can be dynamically assigned to each virtual server as required, giving ultimate flexibility and performance.

Focusing investment - 99% of all disaster recovery events relate to the failure of IT hardware rather than more serious disasters.

We have found that investment is better focused on making live systems robust and high performance, rather than potentially wasting money on unused DR equipment that would bring no business benefit. Virtualisation enables us to build highly resilient and high performance clustered systems for a fraction of the cost of traditional methods. Two or more physical servers can be employed, with the work load-balanced across them. In addition to higher performance, in the event of either server failing, all the applications will continue to run on the remaining server(s), without loss of data or service.

Disaster Recovery – to enable our clients to meet regulatory requirements, we provide space on our hosted virtual DR environment for our clients' backup systems. In the unlikely event of a disaster, we can quickly start up a copy of their entire virtualised system, complete with their data. Clients are then able to access their systems via the Internet from their DR facility, or any internet connected PC. This is a fraction of the cost of purchasing duplicate server hardware and software for DR.

VIRTUAL MACHINES

App OS | App OS | App OS

ESX SERVER

Physical Server

Virtualisation also enables us to take a complete snapshot of the system-state prior to any patching or upgrades. Patching can be quite a risky procedure, as sometimes rogue patches break the systems. But with a snapshot to quickly roll back to, this effectively mitigates this risk.

Future proofing - virtualisation provides the flexibility and capability to grow the system to meet future needs. New servers and additional storage and memory can be added to the cluster, with much less engineer time. Software upgrades are easier to carry out, and new virtual servers can be provisioned in hours rather than days. Furthermore, these systems provide the ability to setup test networks on the same hardware, which will be particularly useful for implementing future new applications as required.

Does virtualisation just apply to large businesses?

Virtualisation has been successfully implemented into businesses of all sizes. Our experience is that virtualisation enables smaller businesses to take advantage of the technologies that previously only larger businesses could afford. On a single server, a small business can utilise a file server, email server, line-of-business database, accounting system, payroll, document management, remote access server and web server.

Is virtualisation expensive?

Virtualisation need not be expensive, provides excellent value for money and will save organisations money overall. The payback is rapid and the added benefits to the business are strong. A virtualised system will cost less to support, and will last longer than a traditional system.

Should I go on the shared cloud?

Most shared internet based cloud systems take advantage of virtualisation to provide access to IT resources on a 'pay as you go' basis. Usually the virtualised system is shared with many organisations to provide lower running costs, flexibility to grow and other advantages such as access to systems via any internet connected PC. The business case for the cloud can be compelling, particularly for businesses with a handful of employees. However all of these advantages can be achieved by small to medium size businesses with their own 'private cloud' using virtualisation.