What goes around comes around.....

As part of our look at Greener and more sustainable IT Jason Meers takes a look at repurposing IT..... Save time and money by converting your old PC's and laptops into thin clients.

IT seems that every 10 years or so the computer industry re-invents itself and gives us new names for older technologies with a new spin on them. In the 60's and 70's we had multitasking and time-sharing of central computing resources with individual terminals for each user and mainframe virtualisation. In the late 80's and early 90's companies like Citrix had started to produce new versions of "remote terminal" software such as Multiview, WinView and Winframe. This was closely followed by Metaframe and Presentation Server which also competed with Microsoft's Terminal Services and new products from VMWare in the form of VMWare Workstation and GSX Server. The new generation of software such as Citrix XenApp, Microsoft Remote Desktop Services/Remote App and VMWare VDI/View/ThinApp and Citrix XenServer, Microsoft Hyper-V and VMWare ESX/vSphere has blurred the lines even further between server virtualisation, desktop virtualisation and application virtualisation. So what does this mean for the IT department?

Consolidation of storage, servers, desktops and applications

Most IT departments will have evaluated, if not already deployed and NAS (Network Attached Storage) or SAN (Storage Area Network) solutions to consolidate their storage. Many will be well on their way to virtualising a large percentage of their servers onto a platform such as ESX/vSphere, Hyper-V and XenServer or KVM, OpenVZ or Solaris Containers in the Linux/Unix world.

An even larger percentage will likely have some form of "Remote Desktop" or "Remote Access" technology in place for their users. Citrix proudly advertise that "Citrix customers include 100 percent of the Fortune 100 companies and 99 per cent of the Fortune Global 500", and as all modern versions of Presentation Server and XenApp sit on top of Microsoft Terminal Services/Remote Desktop Services the same can be said for Microsoft.

For most people application virtualisation or application streaming will be new, untested technology, however this is likely to change over time as the benefits of central installation, configuration and patching and the ability to run conflicting or incompatible applications at the same time that would otherwise be impossible to do on a traditional "fat client" PC become apparent.

So where does this leave the traditional one-user, one-desk, one-pc model?

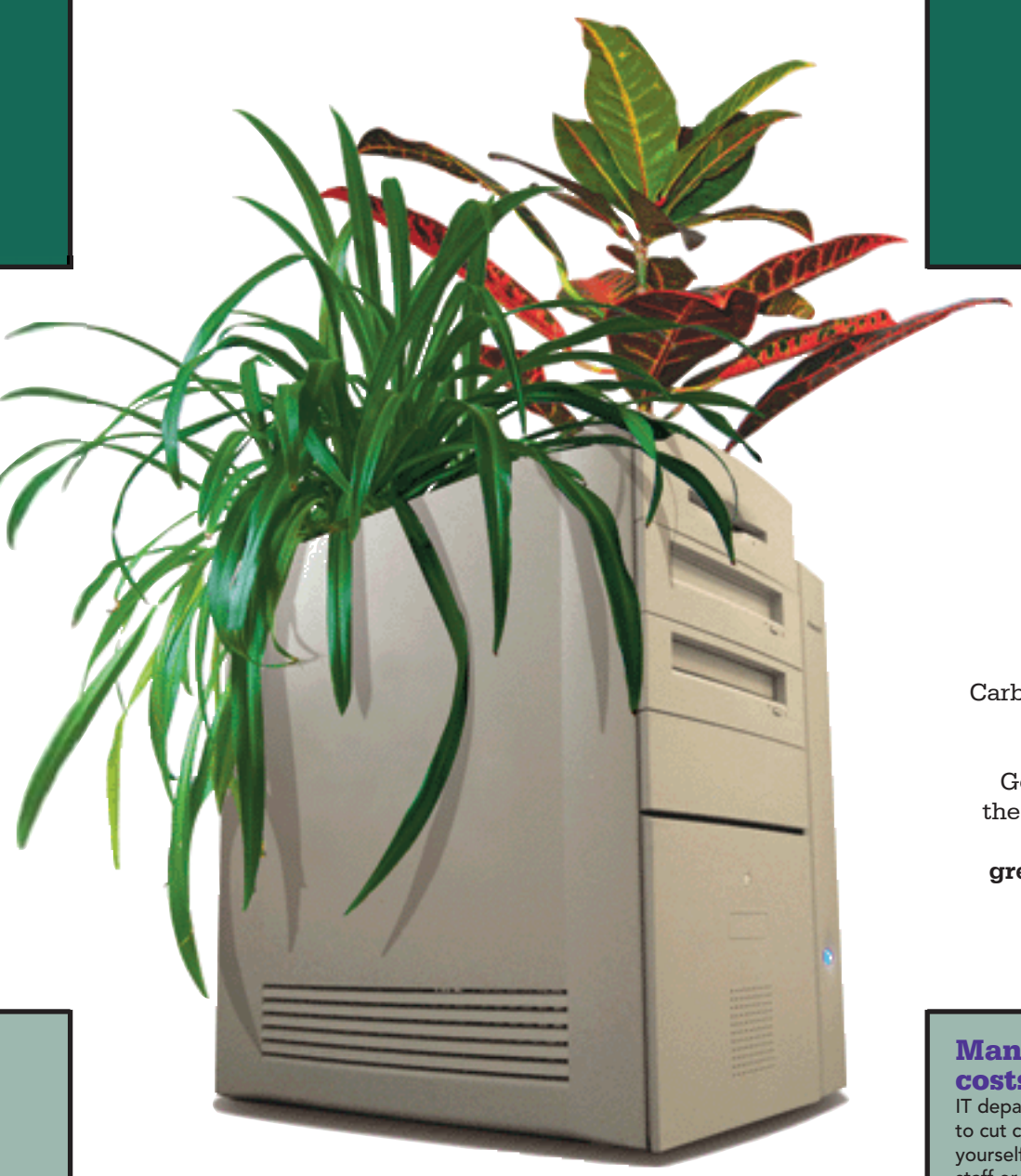
Well it's certainly not going to die overnight, and for some specific applications such as CAD/CAM, computer simulation, mathematical and engineering modelling, multimedia and video creation and editing a "fat client" is the most sensible choice. For everyone else who just uses office applications, email, a web browser and other business applications a "thin client" is almost always a better option in terms of management, maintenance, security, upgrades, migrations and running costs. It is easy to forget just how power hungry an modern PC or laptop can be.

Why use a thin client?

A modern server can support anywhere between 50 and 500 users depending on the type of applications used and the speed of the storage and network it is connected to. In this scenario the IT department could replace 50-500 individual visits to PC's or 50-500 remote control sessions/push installations and replace it with one hop onto the server to patch or update settings on the server which would automatically propagate out to the clients who use multiple copies of the same application installed on the Terminal Server, Citrix server or VMWare View "gold image" . This patching can be done outside of business hours and users don't need to leave PC's or laptops switched on all night or all weekend for the IT department to push out changes, updates or signatures.

Security

Depending on the software used the thin client can be made a read-only device that is not susceptible to windows viruses, malware and spyware and may never need another visit once installed. As long as the server is running an up-to-date security suite all of the thin clients connected to it are protected. If you are running XP embedded or using a version of Internet Explorer installed locally that needs to be able to save files and plug-ins locally on the thin client you may need to consider the security implications first, however if you thin client is using a true "read-only" version of Windows CE, XP embedded or Linux and does not allow access to any local storage devices or removable media almost all of your desktop security headaches can be addressed. The other very important thing to consider is that if you can eliminate the ability to store any data locally you no longer have to worry about backing it up, securing it or encrypting it. A stolen thin client contains no useful data once removed from site.



The author

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Green issues

We all know that we should 'be more green'. It's very well saying it, but most businesses won't actually do anything about it unless they can see tangible benefits. Recent figures show that 75% of the energy consumed by the PC over its lifetime will have been used during the manufacture of the PC itself, and not the running of it, so scrapping a PC is just about the most environmentally unfriendly thing you can do with it. Replacing an old PC with a new, supposedly more efficient model will actually generate a bigger carbon footprint than keeping the old one for a few more years. For every 3 watts of electricity a computer uses another 1 watt is required by the air conditioning system to get rid of the heat it generates. A typical desktop PC uses between 65 – 300 watts, a laptop typically 60 -120 watts though it is not uncommon to see modern PC's with 600 -1000 watt Power supplies. A quick look on the Dell and HP sites shows that an average budget desktop PC comes with a 250 – 300 watt powers supply that is roughly 88% efficient. Obviously the PC isn't using 250 watts all of the time but this compares miserably to a purpose built thin client with a 20 watt power supply or a re-purposed Pentium II, III or P4 desktop converted into a thin client (with a piece of free software such as Enegi Computings OnePlanet Desktop).

Replacement cost

Replacing, upgrading and migrating desktops can be very expensive. Most organisations would rather replace the whole desktop with a new operating system and applications that upgrade hardware or migrate the operating system, data and applications. It is often seen as a less risky option than a live migration or upgrade. In large organisations it is not uncommon to only have just completed one migration before another one is due. Teams of engineers can spend days, weeks and months installing, configuring and managing desktops which adds no perceivable value to the business other than the computers keep working in exactly the same way as they did yesterday. From an IT strategy point of view and from an IT development point of view all of this is wasted effort, a large percentage of time is spent keeping things going instead of improving the overall experience or reducing the cost in time and effort of providing these services in the first place. The phrase "work smarter not harder" comes to mind here, especially as many departments have had seen massive cuts in staff and budget. It is now paramount to do more with less, or more importantly get more out of what you already have.

Management and support costs

IT departments are under increasing pressure to cut costs or reduce headcount. So ask yourself which would you rather keep, your staff or your equipment? Most people would say staff but be concerned that the existing equipment they have might not be capable of running the latest operating systems, applications and security products. The truth is that most desktops PC's have very low utilization rates, much worse than servers. So if everybody agrees that virtualising servers is a good idea why not do it with desktops. If your concern is that it would be too expensive to go any buy new thin clients to run a pilot think again. A modern, purpose built thin client typically has a 500Mhz to 1.5 Ghz processor, between 32Mb and 512Mb of RAM, a 10/100 or gigabit network card, a video card and possibly some local storage if you don't want to boot the client over the network using DHCP and PXE. I would bet that at least 90% of all the machines that you have scrapped or are going to scrap this year meet that minimum specification.

Conclusion

With the new wave of desktop virtualisation products, the ever present threat of budget cuts and staff cuts, the millions of machines in businesses that are not capable of running Vista and Windows7 natively, and the availability of software solutions such as Energi Computings OnePlanet Desktop that can be used to convert on old desktop PC or laptop into a thin client, shouldn't you be looking at desktop virtualisation and thin clients?