

Virtual reality at your fingertips

Virtualisation has been hidden from many users as it's happened at the server level in the data centre but this could be changing, writes **Neil Ainger**, as desktop virtualisation comes to banks, and users notice their hard drive is no longer next to them but instead in a Virtual Desktop Infrastructure.

The virtualised world has offered banks many advantages in terms of reducing running costs and improving the flexibility of IT architectures. The success of many server virtualisation and data centre consolidation projects is now leading some financial institutions to explore the next frontier and to introduce desktop virtualisation.

Making the move means adopting a Virtual Desktop Infrastructure, encompassing the hardware and software systems needed to support the environment. For some it is a building block towards a functioning cloud computing model, where applications are also virtualised, and an 'on demand' IT architecture becomes truly possible.

There is still a lot of work that needs to be done before such a model becomes possible and some technologists maintain that VDI – itself a VMware term that has obtained generic status – is nothing more than thin client computing repackaged with extra bells and whistles. That isn't a viewpoint that Matt Mould, VDI practice consultant at EMC Consulting (part of the EMC/VMware stable, of course) agrees with, pointing out that the individual provisioning aspect of the virtualised desktop is what's new. "It's a case of a mature concept where the technology has finally caught up with users' desires," he says. "I believe virtualisation is entering another generation, where it is all about having a unit of IT on your hosted desktop. Server virtualisation has already been widely adopted and VDI can fit into this estate easily. It's a useable layer that I think will become a mature technology over the next three to four years."

Common to all virtualised desktops and servers – whether you're following an outsourced model as described above or an internal model – is the hypervisor, the software that runs on servers at the host data centre that supports all the desktops, providing the platform upon which the virtual machines run. The data centre can be run internally or by a third party managed service provider; each virtual desktop gets

its own helping of operating system, alongside the applications a user requires. This differs from the old thin client architectures where multiple users shared one instance of the same OS, so the technology is indeed something genuinely new.

Many vendors, including Citrix, Red Hat, VMware, HP and others, are keen to provide the software and hardware platforms needed to support VDI, spotting a potentially lucrative new market. A growing number of financial institutions, from investment banks and trading houses to retail banks, are either piloting the approach or rolling it out fully.

Citrix, for instance, has already worked with HSBC on one such project and Standard Bank introduced it at its London headquarters at 20 Gresham Street to cut running costs and reduce the heat generated by its IT systems, making the environment more comfortable for its 900 employees in the international corporate and investment banking unit. The bank says it saved £400,000 per year by virtualising its desktops and increased flexibility. It used VMware View's PC-over-IP protocol in the installation, which is a server-centric display protocol built into the product. Other vendors offer different products, such as Red Hat's Simple Protocol for Independent Computing Environments (Spice) platform, which according to Navin Thadani, senior director for the virtualisation business at Red Hat, can handle four monitors, allowing traders to watch Bloomberg TV, participate in phone or IM conferences, and so on.

"End user experience is key when considering whether to stick with a physical desktop or move to a virtual desktop," explains Thadani. "If a trader, for example, cannot watch video, use VoIP or get the connectivity and tools that he or she likes then VDI will never get off the ground. You need to give users what they want and get their buy-in."

The key benefit of VDI is that all of the user applications, processes, and data are kept and run centrally, reducing the operational cost of maintaining a helpdesk and supporting individual

PCs across potentially thousands of desktops. The model also lets users access their desktops on any capable device, such as a notebook, smartphone or thin client monitor. The flexibility of the workforce, who can access their desktops remotely – a considerable benefit in terms of business continuity planning – is therefore enhanced. And this flexibility is mirrored in the IT department who can rollout updates and new products more quickly and easily than ever before, sending out a centralised desktop ‘image’ to each unit.

Other benefits include enhanced security because users cannot plug in possibly malware-infected USB sticks into their standalone hard drives – there simply isn’t a hard drive next to them anymore, plus the security function is now more closely under the control of a professional IT department. It cuts both ways of course, in that the insider threat can theoretically be enhanced by this centralisation of security policy, but the usual protective measures such as strong access controls and staff monitoring can be applied to mitigate this worry. At the very least the majority of ‘ports’ open to attack (i.e. users) and number of ways that malware can be inserted have been significantly cut down.

As Mick Slattery, global lead for workplace enablement services at Avanade, which is Accenture’s joint venture with Microsoft in this space, points out: “Tailoring the right platform and level of service to workers has the ability to reduce cost for the 70-80% of users that are normally ‘over provisioned’ with IT. Those who need additional higher-end, expensive computing capacity, can obtain service on a ‘needed’ basis.” The problem with this of course is that people always want more capacity and they hate the idea of losing control – ask any helpdesk that has to deal with users, especially traders, and they’ll tell you how difficult dealing with the end user can be.

Potential problems

End user resistance to losing their hard drive is potentially one of the biggest difficulties in implementing desktop virtualisation and the VDI model that supports it. “You need to do a data and people audit before a pilot to work out how many desktops are needed, who needs access to what and how to map it,” says EMC Consulting’s Mould. “If you jump over the strategy phrase – and don’t get user buy-in – you might regret moving to VDI. You need to do the preparatory work.”

Another major potential disadvantage of VDI is that it can place a strain on your network and cabling infrastructure and it will increase loads on your data centre, if you pursue an internal adoption model. Wil Cunningham, for example, an independent consultant who oversaw the Edinburgh data centre optimisation project at RBS a couple of years ago that extended the lifespan of the facility, is clear that, personally he “wasn’t in favour of VDI in that instance because it ran counter to the project aim of freeing up capacity and enhancing the facility’s ability to keep accepting data for years to come.”

RBS decided to ‘spend’ some of the spare capacity that the optimisation project had freed up on VDI however, “because they viewed it as a business imperative that could help consolidate their desktops across the various brands in the Group, as well as accelerate disaster recovery times and aid business continuity.” Desktop virtualisation was therefore introduced at RBS, although as Cunningham maintains the load it placed on the data centre was considerable.

Other cons of VDI include the upfront capital expenditure cost, which can be high and banks must be prepared to wait a while for a return on investment if they decide to install virtualised desktops themselves. As Avanade’s Slattery admits, “it is important to note that VDI is rarely the lowest cost option. It requires farms of servers to implement and the licensing can be costly. It’s not typically the right answer for all users in a company. But, for some types of power users and knowledge workers, the benefits can be tremendous.”

The decision over whether to install VDI or not is down to individual financial institutions. One which did make the move is Morgan Stanley, which is rolling out virtualised desktops in a project overseen by managing director, Chris Edmonds, which will eventually reach the 60,000 employees of the bank. A standard platform is being used, consisting of Citrix Xen and Windows 7, running on VMware and NetApp for storage and replication purposes. Every user will get this standardised platform, with many already having done so as the implementation enters its final phase. The project is one of the biggest examples of VDI in the sector so far, but many others are beginning to look at introducing it. “We’re seeing lots of interest,” maintains Red Hat’s Thadani, “and I think desktop virtualisation has a great future. That doesn’t mean that traditional server virtualisation and data centre consolidation projects are slowing down though – there is still room for growth there too.”

Whatever form of virtualisation you decide to pursue, it is certainly the case that this technology – whether it’s on your desktop yet or not – will have an important part to play in making IT architectures more flexible and efficient in years to come. With all the new regulations hitting the industry post-crash, being able to introduce new reporting systems, audit trails, products and procedures quickly is a key advantage and one that a virtualised environment helps to support. According to EMC Consulting’s Mould it is also very much aligned to the move towards cloud computing. “Virtualisation, including VDI, can help you reach the ‘on demand’ IT platform that so many people want and act as a building block,” he says, while stressing that desktop virtualisation is the most piloted technology he’s seen over the last couple of years. If that’s true then you’ll most likely see your hard drive disappearing from your side over the next couple of years as virtual reality hits your desktop and comes ever closer to the user’s everyday experience. Time to do a reality check. **BT**