"VDI or Not to VDI"

That is the Real Question

A research paper from Netvoyager plc

Server-based computing and thin client technology have grown and developed over the past 12 months, and an increasing number of businesses across all sectors are investigating and deploying such solutions.

Whilst all the various solutions have their merits, it would be a mistake to think that virtualisation and its proponents alone are the solution.

There are real long-term costs associated with such deployments, and if not considered holistically, it could become a strategic nightmare.

This paper will discuss the benefits of virtualisation, VDI and traditional server-based computing, how to avoid choosing the wrong strategic option to ensure the business and technical deliverable are achieved.

netvoyager

Research : VDI or Not to VDI – That Is The Real Question

Server Virtualisation and Application Virtualisation are very common and understood technologies, and they are widely and successfully implemented. Both technologies are easily accessed using thin client desktop computers.

Generally, Server Virtualisation (VMWare ESX or SWSoft Virtuozzo) is used to consolidate servers to utilise the hardware to their optimum efficiency, reduce data centre real estate, reducing power consumption, finally resulting in the reduction of the cost of ownership of the server infrastructure.

Whereas, Application Virtualization utilising technologies such as Microsoft Terminal Services, Citrix and Ericom deliver application hosting and addresses application compatibility, version control, centralisation of licensing and support and finally deployment issues.

VDI is VMware's designation for the hosting and virtualization of an individual Client OS like Windows XP Professional, Windows Vista or Linux on VMware ESX virtual servers. The objective is to be able to deploy, secure and manage enterprise desktops in the data centre.

There are fundamental differences in approach however, and neither are a panacea or a total solution. Together, they can create a very efficient IT services solution if implemented correctly. If implemented incorrectly, they would create a very complex infrastructure making business and technical benefits disappear and eventually increase the cost of supporting ones own infrastructure.

For those used to deploying server-based computing environments, consisting of Windows Terminal Servers or Citrix, deploying VDI is definitely a similar task. The difference is that instead of managing numerous (but limited set) centralised, multi-user server operating systems, one would be managing potentially hundreds, or thousands of centralised, virtualised single user operating systems.
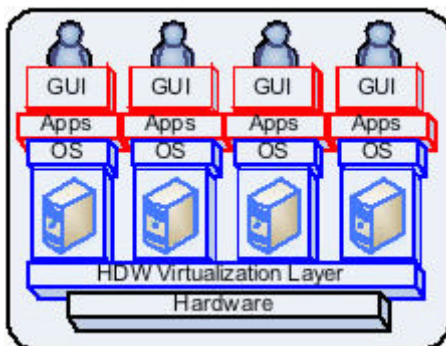

DVI Virtualised Desktop
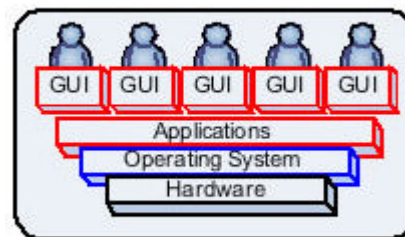
Server Computing Desktop Virtualisation

VDI is not an open technology, but proprietary to VMWare, and the other Virtualisation vendors either have their own implementation or do not have one yet, which is something worth considering before investing heavily in such technology.

VDI is not one product but a technology concept consisting of 5 separate but distinct components.

1. VDI/Broker enabled thin clients (Netvoyager)
2. 3rd Party Connection Broker (LeoStream, Proparo, Provision Networks)
3. Virtualised Remote Desktop Host Image (RDP enabled Windows XP Pro, Vista)
4. VMWare Infrastructure 3 Server
5. VMWare VirtualCentre

The Netvoyager VDI enabled thin clients utilise Leostream to establish a connection with a virtual desktop. Leostream handles the authentication with the enterprise active directory structure and initiates a virtual desktop to start and returns to the thin client the IP address of the virtualised desktop. The rest of the VMWare infrastructure initiates and controls the virtual desktop and hardware resources.
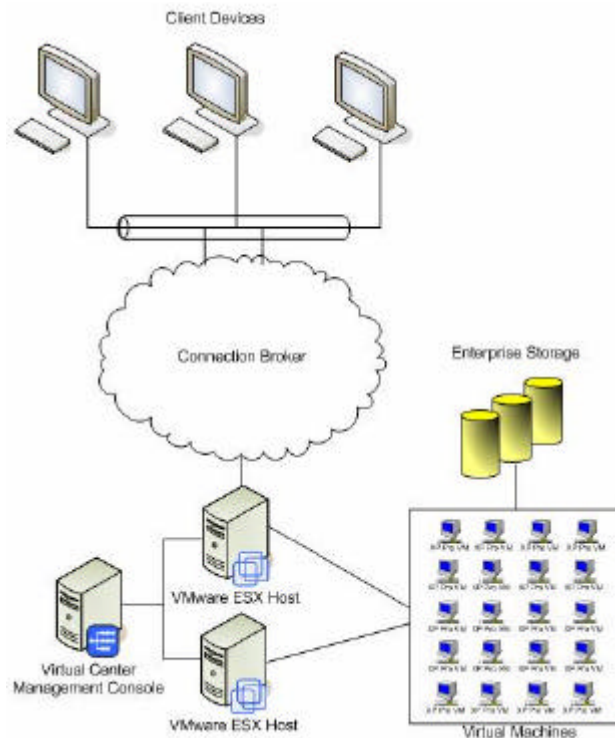
Real Drivers of Using VDI

1. Applications that are not compatible with Terminal Services/Citrix, VDI removes these issues, however most applications nowadays are Terminal Services/Citrix friendly.

2. Applications that require their own IP address for each hosted session, which is not available in Terminal Services but is available using Citrix Application Isolation, but not a very efficient facility at present.

3. When Windows XP or Windows Server 2003 interfaces and facilities are not sufficient for the user, and the user requires a Vista interface and services, which currently are not supported by Terminal Service/Citrix or Windows Server 2008.

4. To provide a remote application developer with a powerful, secure working environment, while protecting the parent company's source code and intellectual property. VDI addresses these issues by providing a remote developer with one or a group of virtual machines that can be used, rebooted, destroyed and easily rebuilt. Basically a complete and isolated system on an individual basis.

5. If you want the ability to holistically move someone's desktop from one server to another, VMWare and VDI allows you to suspend the VM session and move it to another server and resume on the new hardware, however that is a very specific requirement and not a very common one.

Real Disadvantages of Using VDI

1. Remote printing to locally attached PCs is complex and something not well supported

2. Much more complex infrastructure

3. In an organisation where there are 200 users or more, Instead of supporting servers hosting 60-80 sessions each (that is supporting 3 servers), you will be supporting 200 individual virtual machine sessions.

4. Much more server resource intensive than traditional Terminal Services/Citrix implementation

5. PDA Sync not supported

6. Bi-Directional Audio is not well supported

7. The RDP protocol in Windows XP and Vista operating systems were intended for user support purposes and not hosted OS implementations using VDI

8. Not an efficient graphics sub-system

9. Enterprise Class Server Hardware and Storage Networks are required for efficient deployments

10. Permanently user assigned Virtual Machines will require separate patching similar to the physical client machine

11. Requires VMWare skilled staff and not just Terminal Services and RDP knowledge

12. VDI hosted solution does not scale as well as Terminal Services/Citrix solutions

Summary

The question will be which solution to choose that is best for your business and technical requirements, and which solutions still exist a few years from now.

Terminal Services and Citrix have been around for nearly a decade and other companies are offering similar solutions (Ericom, Propalms, Tarantella, NoMachine etc…) whilst many more companies are providing complimentary software that cover resource optimisation to billing and reporting services.

The VDI solution is still in its infancy. VDI is currently driven by one Virtualisation vendor and supported by a handful of thin client device manufacturers, and very little exists in terms of 3rd party software support and features, but no doubt that may grow over the coming years.

The reality is that VDI technology is useful in many scenarios where you have users who need unique or specific requirements, non-terminal-server-compatible applications, but where the users still need the flexibility associated with traditional SBC environments and connecting to applications from anywhere. VDI can play a role in nearly 100% of all companies out there, but only for probably 2-4% of the users at those companies.

Implementing VDI to host 100's or 1000's of desktops does not make technical or commercial sense unless there is a very unique and compelling reason to do so.

As usual, new technology causes a lot of companies to jump on the bandwagon. As usual, new technologies also cause a lot of confusion and may lead to inappropriate implementations.

It usually takes a few years to weed out those vendors with solid products and strategy that will continue to grow with the needs of their customers.