



Data Center ► **Virtualization**

# Everything you always wanted to know about VDI but were afraid to ask (no, it's not an STD)

15

All you need to make virtual desktops go



28 Apr 2014 at 09:47, [Trevor Pott](#)



86

12

184

**Feature** So you know your way around a data center just fine, but you've been told to roll out VDI – aka that highly riveting technology, virtual desktop infrastructure. This is your first time juggling virtualization on this scale. What do you need to worry about? How will you test and benchmark it?

**Our sysadmin blogger Trevor Pott presents this handy cut-out-and-keep guide, complete with four scenarios for you to work with.**

In any VDI setup there are four major elements that will determine the performance and user-friendliness of your system: the graphics; your network bandwidth; your servers' resources; and the storage of all that data. If any one element is out of balance with the rest, your virtual desktop beast will fail the user.

As well as these elements, VDI has three basic flavors in the Windows world: [Remote Desktop Services](#) (RDS, formerly known as Terminal Services); Windows Server VDI; and Windows Client VDI. In the latter two approaches, each user gets one virtual machine all to themselves: one user per operating system instance.

In an RDS scenario, multiple users log onto a single Windows Server instance and share that installation. Multiple RDS servers can exist in the VDI pool, but the differentiator with RDS is that concept of multiple users logged on to a single copy of the operating system.

This multiuser concept has real-world significance. An application installed on the RDS server is available to all users and must be licensed as such. An anti-malware sweep against the OS will affect all

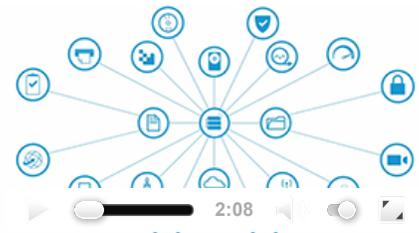
### More like this

Vdi

Scroll up for more information



Everybody knows that improving your technology should increase business productivity. Are you ready to build a modern IT infrastructure?



Start here

Brought to you by HP & Intel®



Scroll down for more information

### Most read



**Hurrah! Doctor Who brings us a bootstrap paradox treat in *Before the Flood***

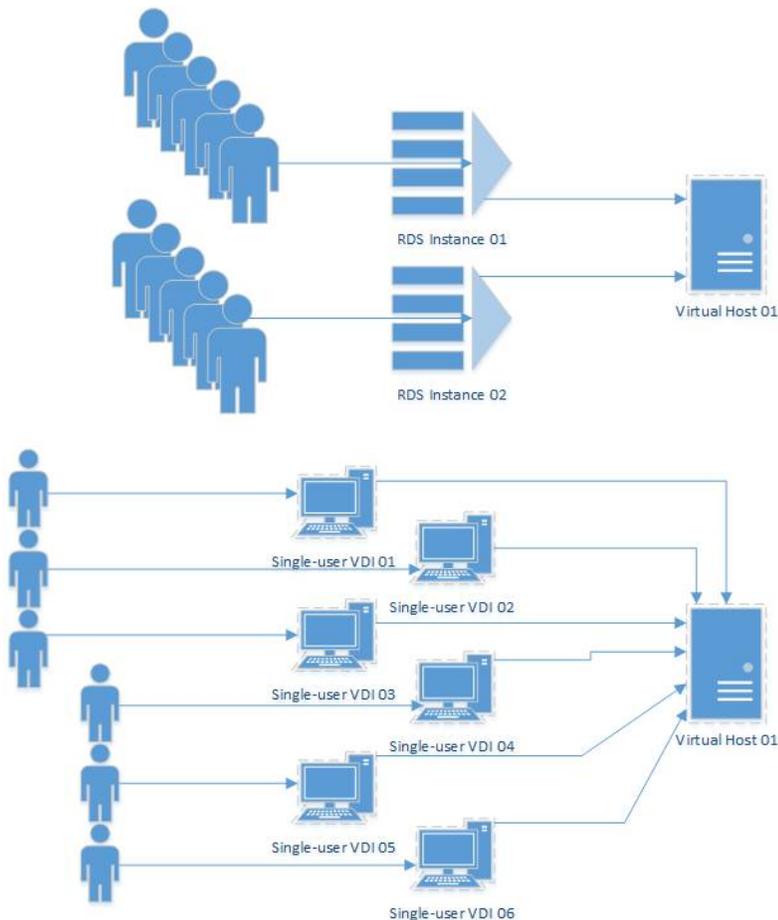


**The Emissionary Position: screwing the motorist the European way**

Top boffin Freeman Dyson on climate change,

users, and it is possible for one heavy user to degrade the experience for all other users. (Though Server 2012 and Server 2012 R2 do have quite a few nice new technologies to thwart processor hogs.)

Perhaps most critically, you may have applications that are not exactly multiuser friendly. One user crashing an application can break it for all other users, and if someone manages to crater the OS, they take it out for everyone.



Your VDI has a flavor ... which is it? (click to enlarge illustrations)

The alternative "one user per operating system" model employed by Windows Server VDI and Windows Client VDI uses more space and resources per user, but eliminates the possibility of one person ruining it for the rest.

Unfortunately, licensing Windows for the aforementioned three basic types of VDI differs substantially from flavor to flavor, and you should investigate which approach is right for you. Since today we're discussing the engineering side of implementing VDI, this article won't go into the nitty-gritty of licensing (although this PDF should be your first port of call). Instead, we'll roll onto the elements that make up a decent VDI stack.

### Graphics: Don't get squeamish about the graphic detail

Generating on-screen graphics is most often the single biggest drain on any VDI setup. It is also the most frequently overlooked consideration and the least understood by those new to the field.

Everyone should know that the general-purpose processors in PCs offload graphics work to dedicated GPUs: the most basic graphics processors in today's desktops can rapidly render 2D and 3D scenes on large (or multiple) monitors.

This spares the general-purpose CPUs from having to juggle graphics plotting and the compute workload of your daily dozen, thus maximizing performance all round.



interstellar travel, fusion, and more



If Dell and EMC really do merge, expect massive, bloody consolidation



BBC bypasses Linux kernel to make streaming videos flow

### Spotlight



By the numbers: The virtualisation options for private cloud hopefuls



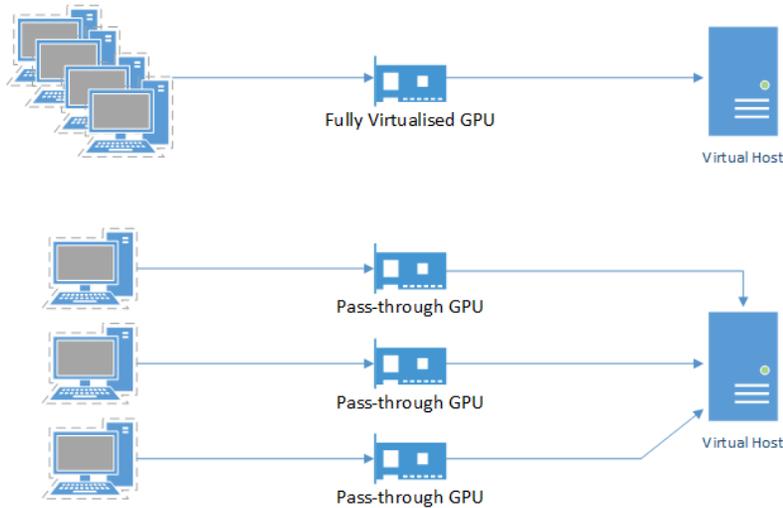
Breaking up EMC is a dumb idea, says VMware CEO Pat Gelsinger



Vision? Execution? Sadly, omission and confusion rule Gartner's virtuous quadrant



Don't panic, biz bods: A guide to data in the post-Safe Harbor world



Thanks to VDI, multiple virtual machines can play *Crysis* by sharing one video card

Without [GPU virtualization](#), VDI deployments must not only handle the usual CPU demands of applications, they must create virtual GPUs out of CPU resources for each VDI instance you provision. Even the most powerful x86 servers can be quickly felled by a handful of VDI users streaming video from their virtual machines, something that happens more often than you may think.

The number one element that is going to affect your score in VDI synthetic benchmarks is graphics generation. Even if every element of your deployment is well balanced, if you are relying on your server CPUs to provide graphics for your VDI instances, your score is going to be pretty bad.

This doesn't mean that the real-world results will be bad. This is where understanding your users and their workload comes in. Are your users going to be doing a bunch of word-processing and spreadsheet work with no video, animations, and so forth? If yes, you can get away without the GPU virtualisation. Are your users going to be doing a lot of image-heavy work or watching training videos?

**Sponsored:** [2015 Cost of Cyber Crime Study: United States](#)

Next page: **Bandwidth: Feel the thickness**

Page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [Next](#) →

[Tips and corrections](#)

[15 Comments](#)

## More from The Register



### Citrix mounts Acropolis, offers support for Nutanix citizenry

No need to beware of geeks bearing gifts, this time



### Parallels parallels Citrix, VMware with mobile app delivery slurp

2X software acquisition to take junior virtualiser into Citrix's lair



### \$1.6bn VMware defence deal challenged by AWS, Citrix and Nutanix

Exclusive deal would see Vitzilla own US defence IT for up to five years

[4 Comments](#)



### Dell hooking up with EMC and going public again? Come off it



### The do-it-all storage giant is dying: Clouds loom over on-prem IT



### Your storage environment will be toast in... 8... days



### The Steve Jobs of supercomputers: We remember Seymour Cray



## Sponsored links

[Find & fix SQL Server performance issues. Get 26 free tips](#)

[Sign up to The Register to receive newsletters and alerts](#)

### Citrix warns that Windows 10's Edge browser borks Receiver

As it should, seeing as it relies on ActiveX

[21 Comments](#)

### Citrix wants a buyer, fast

'All of me, why not take all of me?' sings virtuous vendor

[11 Comments](#)

### Citrix really needs to get its act together, and soon

[SYSADMIN BLOG](#) Blood-sucking asset stripper may yet be fatal

[27 Comments](#)

## Whitepapers



### The changing face of hacking

Helping you learn more about hackers and how they work. And that can help you better plan and deploy your own defenses.



### 2015 Cost of Cyber Crime Study: Brazil

Discover how enterprise security solutions can help you address the core systems and business process-related activities that drive a range of expenditures associated with a company's response to cyber crime.



### CIOs: What are you forecasting for next year?

We all want to know what the future holds and while we could ask analysts, researchers and marketeers, we'd much rather hear what real world tech leaders are planning.



### Strengthen security with intelligent identity and access management

IBM Security solutions help safeguard user access, boost compliance and mitigate insider threats.

#### About us

- [Privacy](#)
- [Company info](#)
- [Advertise with us](#)
- [Syndication](#)
- [Send us news tips](#)

#### More content

- [Subscribe to newsletter](#)
- [Top 20 stories](#)
- [Week's headlines](#)
- [Archive](#)
- [eBooks](#)
- [Webcasts](#)

#### Follow us

### The Register

Biting the hand that feeds IT © 1998–2015

Independent news, views, opinions and reviews on the latest in the IT industry. Offices in London, Edinburgh, San Francisco and Sydney.