



## 5 Little-Known Secrets to Slash VDI Costs

New licensing options and technical advancements can dramatically cut the cost of delivering virtual desktops. Whether you're re-architecting an existing VDI implementation, scaling a production deployment, or planning your first rollout, learn the lesser known secrets that will save you real money.



# #1: Use Windows Server as a Desktop OS

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Microsoft's rules for licensing Windows virtual desktops center around two main concepts:

- Software Assurance (SA) is a volume licensing program that provides Windows customers with 24x7 technical support, deployment planning services, end-user and IT training, and the latest software releases.
- VDA grants end users license to access virtual desktops running a Windows 7/8/10 operating system from devices that do not already have a licensed copy of Windows. VDA is now priced at \$100 per user per year, a change from the past when it was licensed per device. VDA requires SA.

The \$100 per user per year VDA fee can apply whether you're using Citrix, Microsoft, or VMware for VDI, and can add up pretty quickly. But there is a way to avoid it.

## How to Do It

One of the ways that Desktop as a Service (DaaS) providers get around Windows client licensing rules and avoid purchasing VDA is to run a Windows Server operating system modified to look like a Windows client OS instead. You can do the same thing for on-premise VDI.

To do this, you'll need to purchase Windows Server Datacenter edition, which allows you to deploy as many instances of Windows Server as you want. After that, you only need to purchase a Microsoft Remote Desktop Services (RDS) Client Access License (CAL) for each user to access the VM (unlike VDA, RDS CALs are perpetual, so you buy them once and pay annual maintenance). Then you can use the Desktop Experience feature in Windows Server 2012 R2 to make each server VM look like a desktop (read the Microsoft Remote Desktop Services blog ["Desktop Experience in Windows Server 2012 R2"](#) for details).

## How Much You'll Save

Windows Server Datacenter will cost you a little more than \$6,000 per server, and each RDS CAL retails at \$100. But this will still be far less than purchasing VDA, since you're amortizing your server cost over many users, and the RDS CAL is perpetual, not paid yearly.

A white paper from Microsoft MVP and virtualization consultant Falko Gräfe explores this in detail. In ["Decoding Microsoft's VDI Licensing Arcanum,"](#) he finds that the Server OS desktops cost nearly 60% less over a 6-year period than the Client OS desktops with VDA. The example cited in the paper shows that a Windows Server user will cost \$633 over 6 years compared to a Windows desktop user with VDA, which will cost more than \$1,600 over the same time period.

## #2: Deploy VDI on Hyper-V

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There was a time when VMware had to make the argument about why to virtualize workloads instead of use physical hardware. Now, virtualization is such a staple within the data center that the question has changed to, “How can we save money on the virtualization stack?” IT mag TechRepublic explores how VMware vSphere has gone from a product that reduces costs to a baseline expense that enterprises are looking to eliminate in “[Why VMware may fall victim to virtualization cost cutting.](#)”

This so-called “VMware Tax” is one of the reasons VDI costs so much. However, as TechRepublic explains, new and improved alternatives now offer a better value.

### How to Do It

Many organizations are starting to deploy VDI on an all-Microsoft stack:

1. Microsoft Hyper-V for virtualization infrastructure in place of VMware vSphere.
2. Microsoft RD Connection Broker (part of RDS) or Citrix XenDesktop VDI Edition for desktop connectivity in place of VMware Horizon View.
3. Microsoft’s partner Unidesk for management in place of VMware’s tool portfolio of Linked Clones, View Composer, Mirage, App Volumes, ThinApp, Persona, and Immidio.

As detailed in the eBook [“6 Reasons Why VDI with Hyper-V and RDS is Ready for Take Off,”](#) new features like Dynamic Memory make Hyper-V as capable as vSphere for hosting virtual desktop workloads. RDP enhancements such as RemoteFX have brought Microsoft’s protocol on par with PCoIP. Lastly, Microsoft’s partner Unidesk has extended Microsoft VDI with simple, scalable provisioning, app delivery, Windows patching, and personalization, while also replacing manual and PowerShell-based management of RDS collections with easier, more efficient GUI-based management.

### How Much You’ll Save

The following table offers a VDI price analysis for a 500-user example using data from the [VMware Store](#), [Citrix Store](#), and [Unidesk Pricing Tool](#). The all-Microsoft solution is about 50% less than an equivalent VMware solution.

Substituting Citrix XenDesktop VDI Edition for Microsoft RDS adds only a little more cost and may be more attractive to longtime Citrix customers who trust the HDX protocol and are comfortable with the Citrix user interface.

Connectivity with 1 year maintenance (500 Users)	<b>vmware</b> Horizon Enterprise \$206,500	<b>vmware</b> Horizon Advanced \$151,250	<b>citrix</b> XenDesktop VDI Edition \$51,000	<b>citrix</b> XenDesktop VDI Edition \$51,000	<b>Microsoft</b> VDI \$48,400
Management with 1 year maintenance (500 Users)	Linked Clones, View Composer, Mirage, App Volumes, ThinApp, Immidio included with Horizon Enterprise for VDI management	<b>unidesk</b> \$59,500 Unidesk replaces Horizon VDI management tools, so only Advanced Edition is needed	<b>unidesk</b> \$59,500 Unidesk extends Citrix XenDesktop VDI Edition with simple, scalable management	<b>unidesk</b> \$59,500 Unidesk extends Citrix XenDesktop VDI Edition with simple, scalable management	<b>unidesk</b> \$59,500 Unidesk extends Microsoft RD Connection Broker with simple, scalable management
Hypervisor	<b>vmware</b> vSphere \$0 vSphere for Desktops included	<b>vmware</b> vSphere \$0 vSphere for Desktops included	<b>vmware</b> vSphere \$32,500 \$65 per user for vSphere for Desktops	<b>Microsoft</b> Hyper-V \$0 Hyper-V included with Windows Server 2012 Datacenter	<b>Microsoft</b> Hyper-V \$0 Hyper-V included with Windows Server 2012 Datacenter
Software Total	\$206,500	\$210,750	\$143,000	\$110,500	\$107,900

For more details on this 500-user comparison, read the Unidesk [“VDI Price Analysis”](#) blog.

## #3: Use Free Hyper-V Server Edition to Host Desktops

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If you decide to use Hyper-V for VDI, you'll have to choose which version of Windows Server will host your management roles, connection brokers, and the virtual desktops themselves.

Microsoft offers several editions:

- Windows Server 2012 R2 Datacenter is the top of the line, and enables you to run as many virtual server machines as you want on Hyper-V.
- Windows Server 2012 R2 Standard limits you to two server VMs.
- Hyper-V Server 2012 is a free stand-alone product that has [all the features of the Hyper-V role found in the above editions](#). What you don't get are any guest virtual instance rights for server OSes or any GUI-based management interfaces.

Since the majority of your Hyper-V servers will be used to host your virtual desktops, picking the least expensive edition will save you the most money.

### How to Do It

Hyper-V Server should be your choice for hosting virtual desktops that are already licensed for Windows 7/8/10. First, it's free. Second, it doesn't have other roles and is running in Server Core configuration without any GUI, so its resource footprint is smaller than a full Windows Server installation. Lastly, having no GUI can be more secure.

Here's how customers are designing their Hyper-V hosts for VDI:

1. n (small number) Windows Server 2012 R2 Datacenter hosts for the RD Connection Broker or Citrix XenDesktop connectivity roles and Unidesk management appliances.
2. N (bigger number) Hyper-V Server 2012 hosts for the actual Windows 7/8/10 desktops.

### How Much You'll Save

Your savings will depend on how many Hyper-V hosts you'll need. A common rule of thumb is to deploy a new Hyper-V server for every 100 virtual desktops. If you have 1,000 desktops, that would be 10 hosts.

At approximately [\\$6,000 MSRP for Windows Server Data Center 2012 R2](#), you would save about \$60,000 by deploying your 10 hosts on Hyper-V Server 2012.

## #4: Move VDI Management to Less Costly IT Resources

Managing desktops of any kind has always been a pain for IT. Managing virtual desktops has been an even bigger pain. Administrators have had to cobble together a collection of independent tools and technologies for application delivery, Windows patching, desktop provisioning, image management, storage optimization, break/fix, and personalization.

The complexity of this “siloe” management approach and the sheer number of consoles that must be mastered are why many Citrix XenDesktop and VMware View deployments require Tier 2 and 3 IT admins for day-to-day management.



Shifting day-to-day management of VDI to your helpdesk or Level 1 IT admins can significantly cut your costs.

### How to Do It

The availability of Unidesk for simple, all-in-one VDI management has enabled Citrix XenDesktop customers like [Health Network Labs](#) and [Sacramento County Superior Court](#) and VMware View customers like [Dayton Superior](#) and [STV, Inc.](#) to move VDI management back to



IT generalists and helpdesk staff.

By using Unidesk's single pane of glass console in place of disparate VMware tools and technologies such as Linked Clones, View Composer, App Volumes, ThinApp, Mirage, Persona, and Immidio, or Citrix's equivalent of vDisk, PVS, MCS, Personal vDisk, and Profile Management, everyone in IT can become a VDI management expert.



## How Much You'll Save

Cost savings will vary based on your environment, but here are 2 quick examples from the customer case studies cited above (note the cost savings does not even account for moving these responsibilities to less experienced IT staff):

1. **Windows image management savings.** Without Unidesk, you'll be patching Windows many times every month. With Unidesk, you'll be patching once. Let's say you have 10 gold images, each taking 3 hours to prep, test, and rollout, and you do that 12 times a year on Patch Tuesday. If the IT admin's salary is \$30 per hour, that's \$10,800 a year. Unidesk will [reduce your 10 images to 1 OS layer](#), saving you about \$10,000 every year.
2. **Application delivery savings.** Without Unidesk, you'll spend an average of 2-3 hours trying to virtualize each of your applications. With Unidesk [application layering](#), you'll only need 15-20 minutes per app. Let's say you have 100 apps, each taking 3 hours to package, test, and rollout, and you update them twice a year. If the IT admin's salary is \$30 per hour, that's \$18,000 a year. Unidesk will [reduce the 600 hours spent on application packaging to 60](#), saving you about \$16,000 every year.

## #5: Reuse Those Old PCs

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We'll end with a no-brainer. Buying new thin or zero clients to replace all of your PCs will reduce your energy costs and hardware break/fix costs over time. But in the short-term, you'll have to shell out more money for those new clients and Microsoft VDA, and possibly pay a disposal fee for each PC as well.

Why not squeeze a little bit more life out of your old PCs, and stagger your thin client replacement purchases?

### How to Do It

That's what [Tulare County, California](#) has been doing as they've scaled VDI, which is now 700 desktops in to a planned 2,000 desktop deployment. The county's physical PCs are being repurposed as thin clients for budgetary reasons. Real thin clients are purchased in batches as the PCs die.

Many vendors offer software for repurposing PCs as thin clients. You can also do it yourself - Tulare County has modified the Windows startup process to boot directly into their connection broker, so the end users' only option is to login to their virtual desktops.

### How Much You'll Save

Reusing PCs will save you:

- The \$200-500 cost of a new thin or zero client
- The \$100 per user per year Microsoft VDA cost (assuming the PCs you are reusing are already licensed for Windows and are covered under Microsoft SA)
- The \$20-80 PC disposal fee.

Excluding energy and break/fix savings, this could amount to as much as \$700 per user per year.



## Summary

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Hopefully you found these budget-saving VDI tips to be useful. Have any of your own? Share them with us at [info@unidesk.com](mailto:info@unidesk.com) and we'll include you in [our blog](#).

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