

Increasing
Your VDI
Project's
Return on
Investment
Using
Workspace
Virtualization

RINGCUBE™

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OVERVIEW

Most organizations find that client computing comprises a significant portion of their IT budget with little real return on investment. Between hardware, software, maintenance and management costs, client computing constitutes 25-40% of most organization's total annual IT expenditures. Enter VDI, or virtual desktop infrastructure, a solution for server-based virtual desktop computing that improves control and manageability by giving users easy access to a "standard" desktop. Gartner predicts approximately 50 million user licenses for hosted virtual desktops will be purchased by 2013.

However, one of VDI's most persistent challenges is the inability to scale across an organization to its various types of employees. Most organizations choose to implement dedicated pooled VDI deployments in order to keep storage and infrastructure costs low, thereby forgoing the ability to personalize users' desktops. This approach works best for structured task workers, such as call center operators, who use standardized desktops that don't require any customization. Most IT Directors and Desktop Architects assume that rolling out VDI to their task workers is as far as an implementation will ever go in their organization.

But what if it was possible to increase the scalability of VDI? What if you could give VDI to your employees that require customized desktops, even those that are rarely connected to your network, without dramatically increasing storage or infrastructure costs? And what if this scalability could occur without negatively impacting your existing IT infrastructure?

This scenario is possible with workspace virtualization – it is the answer for increasing VDI scalability and realizing greater economies of scale for VDI implementations. Not only does workspace virtualization solve the user personalization issue, but it integrates with your existing infrastructure while minimizing storage and infrastructure costs. Workspace virtualization drives down the overall cost of your VDI project by lowering the project's cost per user, and dramatically increases your VDI return on investment.

VDI IMPLEMENTATION CHALLENGES

Let's take a closer look at VDI challenges that organizations typically experience.

Lack of Personalization

VDI's lack of scalability to workers that require customized desktops means the vast majority of VDI installations are never rolled out past structured task workers. Unfortunately, the result is you can't take advantage of economies of scale to broaden your VDI deployment to employees that need customized desktops, such as knowledge workers.

There are other options for personalizing desktops, but they also have distinct disadvantages. A minority of organizations implement assigned desktop models that allow personalization, but the trade-off is enormous infrastructure costs to support increased data storage requirements.

Most organizations implement a pooled VDI deployment model, where the same image structure is used for all users. The images are returned to their original condition every time a user logs on. Any changes that the user made during the session, such as changing wallpaper or customizing background colors, are lost when they log out. It's a ideal solution, from an IT management standpoint, for structured task workers who don't need image customization to perform their jobs, but a poor one for users who require highly personalized desktops.

No Support for Department-Level or User-Installed Applications

The pooled VDI model also doesn't support department-level or user-installed applications that are often key to employees' productivity. Software engineers, for instance, commonly need Microsoft Visual Basic or another programming tool, and they normally configure the application to fit their work style. Users often download applications such as personal productivity tools, and customize them to their needs. It isn't possible to support this degree of customization with the dedicated pooled model, so most organizations forgo migrating employees that need specialized applications to VDI. There's simply no means to support the specialized software tools users need to do their jobs unless the organization chooses an assigned desktop model. But, again, the unacceptable tradeoff is high infrastructure costs.

High Storage and Infrastructure Costs

For organizations that do choose to implement the assigned desktop model, they'll have the ability to give their users personalized desktops and department-level applications, but it comes at a high datacenter storage and infrastructure cost. The assigned desktop model's persistent personalization necessitates more expensive datacenter storage and makes the management of the VDI infrastructure infinitely more complex since more virtual machines must be maintained.

Assigned desktops aren't a popular model: Gartner has spoken with over 400 organizations about pooled hosted virtual desktop deployments (or VDI) since 2007 – less than 1% of these had deployed or intended to deploy pooled images in which personalization was allowed to persist.

No Support for Mobile Users

Network connectivity is another hurdle. With traditional VDI environments, which have been architected for a LAN environment, supporting a mobile/remote user is difficult, requiring that user to have sufficient bandwidth wherever they are. Mobile workers, who may be intermittently or rarely connected to the network, aren't good candidates for VDI. This limits a VDI rollout's scale as yet another group of key employees can't be included.

Poor Integration with Existing Infrastructures

There are third-party solutions to tackle some of these VDI challenges such as profile management tools or legacy virtualization technologies. However, they often add overhead to your network and are extra work for your IT team to support and install. Many of these solutions work on top of popular VDI solutions like VMware View and Citrix XenDesktop, but they may necessitate major configuration changes in your infrastructure setup or render some features in your VDI solution unusable.

Many of these solutions will not work with your existing provisioning or systems management tools' console, which means your IT team will have one more piece of software to learn and manage. With so many moving parts in your network, VDI add-ons that don't integrate seamlessly with your existing infrastructure are an unnecessary time drain for IT teams.

WORKSPACE VIRTUALIZATION OVERVIEW

The emergence of workspace virtualization solves many of these VDI challenges. According to Gartner, workspace virtualization is "an emerging technology category, which decouples the user's workspace – applications, data, and personalized settings – from the underlying operating system, simplifying the creation, provisioning, and management of end-user computing environments which are mobile and can be customized by the end-user without requiring a second operating system."

Workspace virtualization saves a user's desktop environment in a persistent layer called a virtual workspace. This means a non-persistent virtual machine (VM) pool can be utilized with lower storage cost savings. It's the ideal scenario of cost savings and simplified management combined with the ability to offer users a highly customized desktop experience.

BUYER'S GUIDE

Not all workspace virtualization solutions are the same. Here are key factors to evaluate in a workspace virtualization solution:

- Supports rolling out VDI across your organization to employees that require highly customized desktops and mobile workers
- Supports the pooled VDI desktop model which means lower storage and infrastructure costs
- Offers 100% persistent personalization of users' settings
- Supports persistency for department-level and user-installed installed applications
- Supports mobile and offline workers
- Seamless compatibility with VMwareView and Citrix XenDesktop
- Offers dramatic storage and infrastructure savings
- Seamlessly integrates with your organization's existing application provisioning solutions
- Supports all functionality in your VMware View or Citrix XenDesktop solution – shouldn't require trade-offs in functionality or complicated infrastructure configuration
- No special training required of your IT staff; the solution shouldn't necessitate more than their existing Microsoft Windows expertise
- Vendor has world-class, in-depth knowledge of VDI and workspace virtualization

VDESK VDI EDITION

If the factors listed in the Buyer's Guide are important to your organization, you'll want to learn more about RingCube Technologies' vDesk VDI Edition. It is a high-performance enterprise workspace virtualization solution that increases VDI projects' return on investment by expanding the rollout of VDI desktops across your organization. No longer is your VDI implementation restricted only to structured task workers; you can now include employees who require highly personalized desktops. By broadening the VDI rollout to a larger percentage of your employees, you lower the overall cost of your VDI project which results in a higher return on investment.

100% Persistent Personalization

Employees that require highly personalized desktops can now have them with vDesk VDI Edition's 100% Persistent Personalization. Not only does vDesk VDI Edition virtualize a user's complete desktop environment, including applications, data, profile and settings, but it also supports department-installed applications – something that many competing virtualization solutions can't do.

Each user receives a vDesk VDI Edition workspace, which they use to personalize their desktop. The workspace saves the user's installed applications, data and settings, without the need for an underlying operating system. This dramatically reduces file size and storage requirements, while enabling each user to create their own unique desktop.

Support for Department-Level and User-Installed Applications

Unlike profile management tools, vDesk VDI Edition also supports department level and user-installed applications that are often critical to employees' productivity. Many groups of employees use specialized applications such as accounting departments using financial applications and sales teams utilizing contact management solutions. vDesk VDI Edition supports these department-level applications in the user's workspace. Applications downloaded and installed by users are also supported. This even includes applications that require drivers and security services such as endpoint security, databases, and PC management software.

Support for Mobile Workers

Since VDI doesn't support offline usage, including mobile workers in a VDI migration hasn't been an option. vDesk VDI Edition supports offline use so these employees can now be part of your VDI rollout. In fact, vDesk VDI Edition gives users a choice: they can run their virtual desktop at the office or on unmanaged PCs at home or at a client site. This broadens your VDI migration to additional employees and further lowers the total cost of ownership.

Seamless Integration with VDI and Application Provisioning Solutions

Your workspace virtualization technology shouldn't require changes to your existing infrastructure or time-intensive training for your IT department. Unlike other virtualization technologies, vDesk VDI Edition works seamlessly with VMware View and Citrix XenDesktop by supporting their image management capabilities and preserving their ability to reduce storage costs. It easily integrates with application management and provisioning tools so your existing management structure is maintained. vDesk VDI Edition also doesn't require specialized training for your IT team – their existing Microsoft Windows knowledge is sufficient to install and maintain it.

TECHNOLOGY OVERVIEW

Exactly how does vDesk VDI Edition increase user productivity, lower desktop management costs, and eliminate the performance and resource overhead of legacy virtualization solutions? It starts with unique workspace virtualization technology that simplifies the creation, access, and management of Windows desktops.

Unlike traditional VDI dedicated pooled deployments, where users lose their customizations and personal applications when the administrator alters the base virtual machine (VM), deployments including vDesk VDI Edition retain those changes. This means administrators can easily and centrally manage their base VMs while providing users with the customization and personalization they demand.

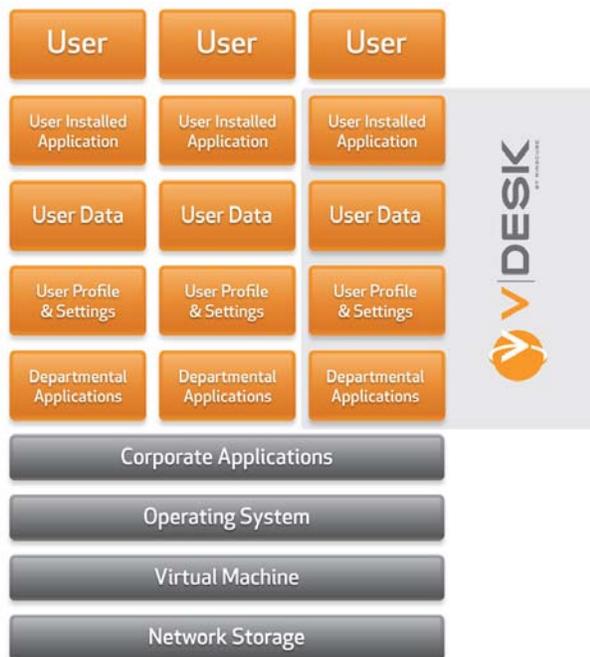


Figure 1 - vDesk VDI Edition Workspace Components

vDesk VDI Edition provides this separation through a technology called the vDesk Workspace Virtualization Engine (WVE). vDesk's WVE, in use today by over 1.3 million users, redirects all changes made to the user's VM into a separate workspace container. That workspace container is grafted to the base VM to provide a unified experience. In this way, users can seamlessly access applications provisioned by their administrator in the base VM.

In addition, locally-administered applications (such as those provisioned and managed by local IT departments) can also be provisioned into the user's environment. If permitted, the user can also install their personal applications. The end user experiences no difference in usability – WVE ensures all changes made and all applications installed are stored in the workspace container, as shown in Figure 1.

Should a conflict arise between changes made by an administrator (for example, when the administrator updates the base VM with Windows patches or application updates) and

changes made by a user, vDesk VDI Edition provides a simple way for an administrator to reconcile the changes. This minimizes user downtime and IT workload. vDesk VDI Edition also allows an administrator to easily migrate users between VM pools, should the need arise.

Physically, a vDesk VDI Edition user workspace doesn't need to be stored with the dedicated pool VM. This frees up an enterprise's high-speed disks for VM storage – the vDesk VDI Edition user data can be directed to a less expensive storage solution, like a file server. Figure 2 illustrates sample Before and After configurations of a complete vDesk VDI Edition deployment.

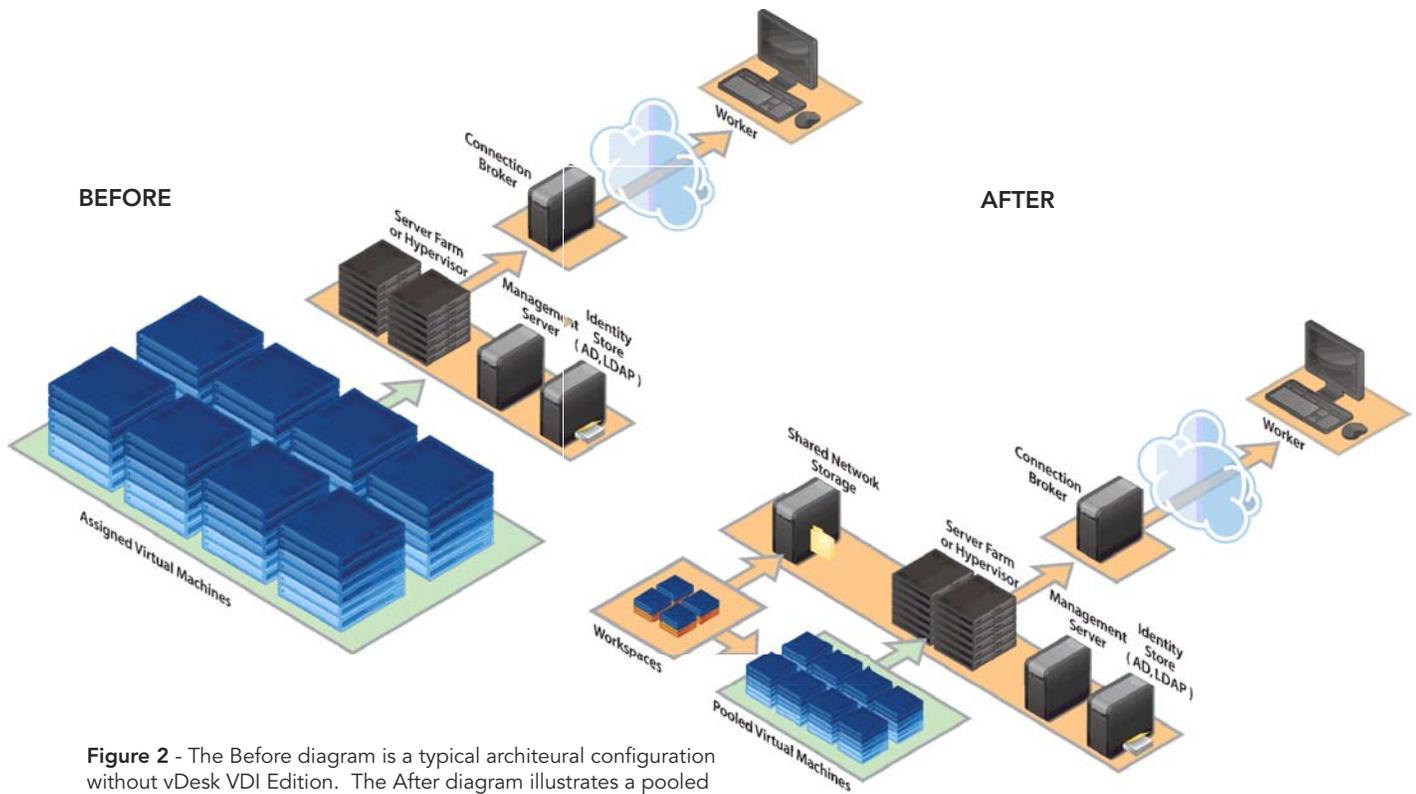


Figure 2 - The Before diagram is a typical architectural configuration without vDesk VDI Edition. The After diagram illustrates a pooled deployment configuration with vDesk VDI Edition

SUMMARY

The promise of VDI is great – lower IT management costs, a more secure network – but considering that only a fraction of most organization’s workers are a good fit for it, the resulting return on investment isn’t as high as it could be. Workspace virtualization technologies help break down that barrier.

vDesk VDI Edition is a high-performance enterprise workspace virtualization solution that makes VDI accessible to workers who require personalized desktops. Not only does it support 100% persistent personalization, but it is the only workspace virtualization solution that meets enterprises’ cost, management, and security requirements to deploy desktop virtualization throughout your entire enterprise. The result is a lower total cost of ownership for VDI projects and a higher return on investment.

LEARN MORE ABOUT VDESK VDI EDITION

Visit our website at www.ringcube.com to learn more about how we can help you lower VDI’s total cost of ownership and increase your VDI project’s return on investment.



About RingCube Technologies, Inc.

RingCube is the leading provider of workspace virtualization. The company's innovative virtualization solution, vDesk, enables users to securely access their complete desktop computing experience from any Windows PC anywhere in the world. With vDesk, organizations can increase user productivity, lower desktop management and support costs, and eliminate the performance and resource overhead commonly found with legacy virtualization approaches. The company is privately held and based in Mountain View, CA. For more information, please visit: www.ringcube.com

RingCube Technologies, Inc. | 100 W. Evelyn Ave., Suite 210 | Mountain View, CA 94041 United States
 Main: 1-866-323-4278 | International: 650-605-6900 | Fax: 408-605-6901

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