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Technology Insight notes describe emerging technologies, tools, or processes as well as analyze the tactical and strategic impact they will have on the enterprise.

A View into VMware View 3

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VMware and Citrix are ahead of the pack when it comes to providing software for connecting end users with virtual machine-based desktops hosted on a server. With its product View, VMware is moving toward a more comprehensive approach to supply virtualization and remote access services to the end user. As competition heats up in desktop virtualization, get the lowdown on what VMware has to offer.



Executive Summary

VMware View is the leading choice for desktop virtualization software, followed closely by Citrix XenDesktop. VMware has significantly broadened and updated its offering. This note unpacks the components of View and looks deeper at a number of key features including:

- » How View Composer and dynamic desktop creation streamlines the process of virtual desktop deployment, while also reducing the amount of centralized storage required for desktop virtualization from previous VMware products.
- » How the integration of ThinApp means that View also provides access to streamed virtualized applications. The View connection broker can also manage connections to other remote resources such as blade PCs or workstations in the data center.
- » How the experimental Offline Desktop feature bodes well for Virtual Desktops in disconnected mobile scenarios – an area that desktop virtualization does not currently play well in.

Desktop virtualization is still in the growth stage, as most enterprises are in the planning, piloting and early implementation phases. Competition, particularly between VMware and Citrix, will heat up as more enterprises explore desktop virtualization.



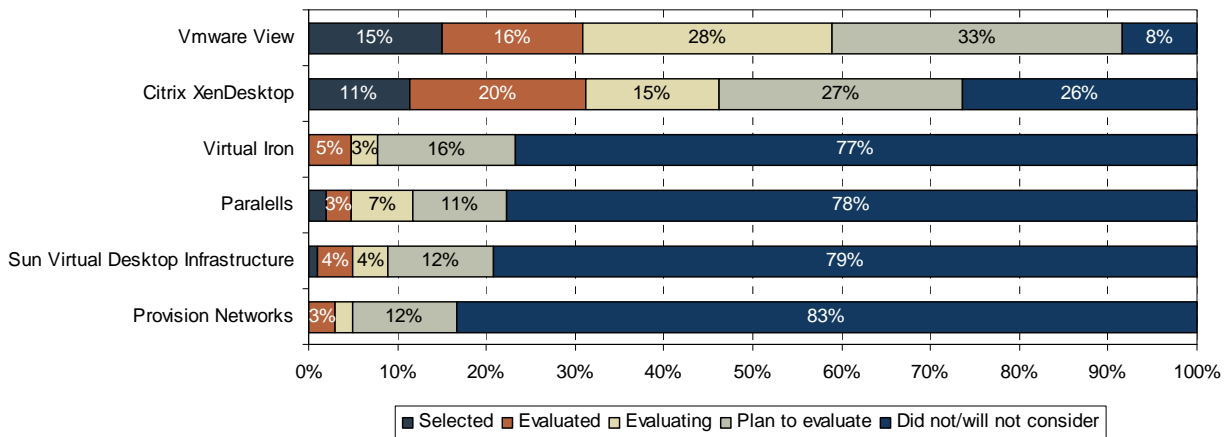
Technology Point

VMware View is a comprehensive virtualization product. It combines the former Virtual Desktop Infrastructure (VDI), Virtual Desktop Manager (VDM), and elements of VMware ACE for offline checking out of virtual machines (VMs) for disconnected laptops and desktops. In addition to virtual desktop management and connection brokering, the Premier edition of Virtual View also includes VMware's ThinApp for access to application virtualization. View can also connect users to remote PCs and blade workstations.

The only other vendor that aims to be as broad and comprehensive as VMware is Citrix, with XenDesktop and XenApp. Citrix also promises access to virtual desktops as well as virtualized applications and remote hardware, such as a blade PC. Among those who are planning and implementing desktop virtualization, VMware and Citrix are significantly ahead of other options in terms of corporate choice.

Figure 1. Vendors Evaluated and Selected for Desktop Virtualization

Source: Info-Tech Research Group



As seen above in Figure 1, over 75% of organizations participating in Info-Tech's Impact Research Report on virtualization don't consider vendors outside of VMware and Citrix. Where VMware has had strength in virtual machine hosting, including virtual PC hosting on workstations and servers, Citrix has more depth on the application hosting and delivery side. Citrix has also promoted its solutions as more storage friendly. In View, VMware addresses its areas of perceived weakness.

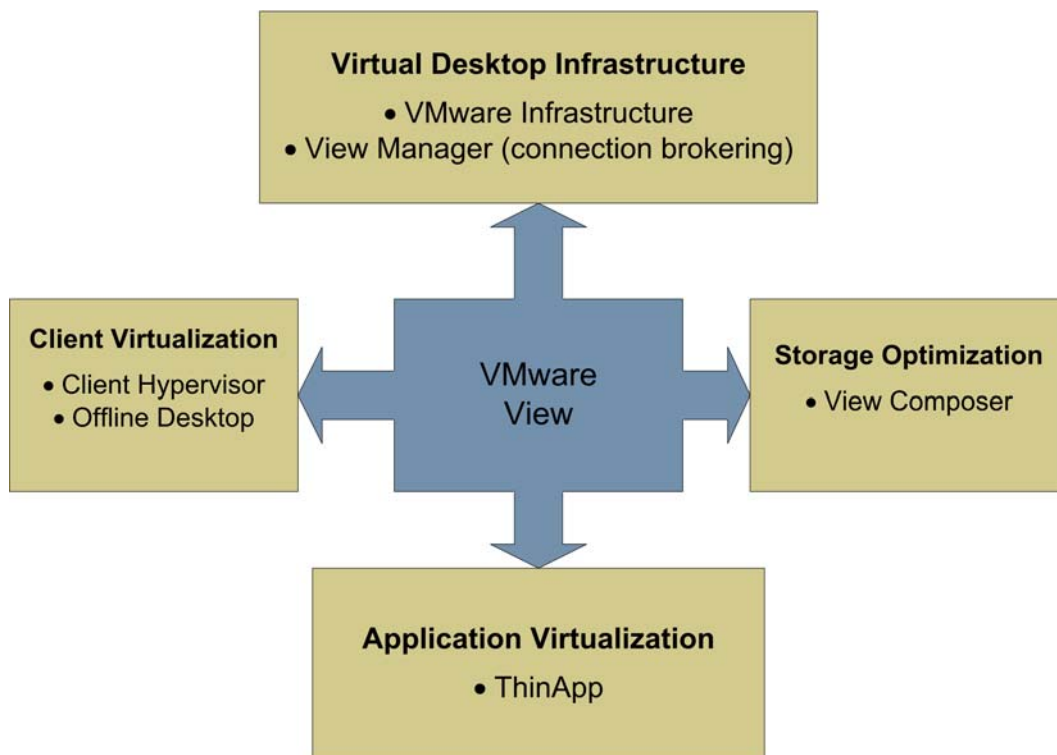


What It Is & How It Works

VMware View 3 is comprised of four major components, some of which are new and some that have undergone a product name change, as indicated in Figure 2:

Figure 2: Components of VMware View

Source: VMware



1. **VDI**, or Virtual Desktop Infrastructure, consists of VMware Infrastructure 3 (VI3) and VMware View Manager 3 (VM3).
 - » **VI3** is the most established component and also the foundation of the VMware View offering. It supports centralized backup and recovery, automatic failover, dynamic load balancing, and eliminates the issue of single point of failure.
 - » **VM3** (formerly Virtual Desktop Manager 2) is the desktop management solution that handles the management, provisioning, updating and patching, and deployment of virtual desktops.



2. **View Composer (formerly Scalable Virtual Images)** reduces the amount of time administrators take to manage the potentially thousands of virtual desktop images by working with what VMware calls “like desktops.” Many VDI deployments consist of hundreds of the same desktop image that have to be managed separately. Composer works with desktop templates rather than individual images to reduce administration time. Read more about View Composer below in Key Considerations.
3. **VMware Thin App** is the application delivery component of the virtualization suite. The operating systems, user data and settings, and applications are maintained separately, so administrators are managing one instance rather than hundreds. ThinApp keeps all of these elements separate which eliminates compatibility issues and allows applications and operating systems to play well together.
4. **Client Virtualization via Hypervisor and Offline Desktop.** These advancements could become big game changers (see below in Key Considerations); however, they are currently available for experimental use only.

Key Considerations

There are a few features and functions that are especially significant in this release and require a closer look.

View Composer

The challenge with previous versions of VDI is that administrators had to create a virtual desktop image for each user, which requires a lot of central storage space. View Composer creates complete desktop images from separated and isolated applications, operating systems, and user data and settings.

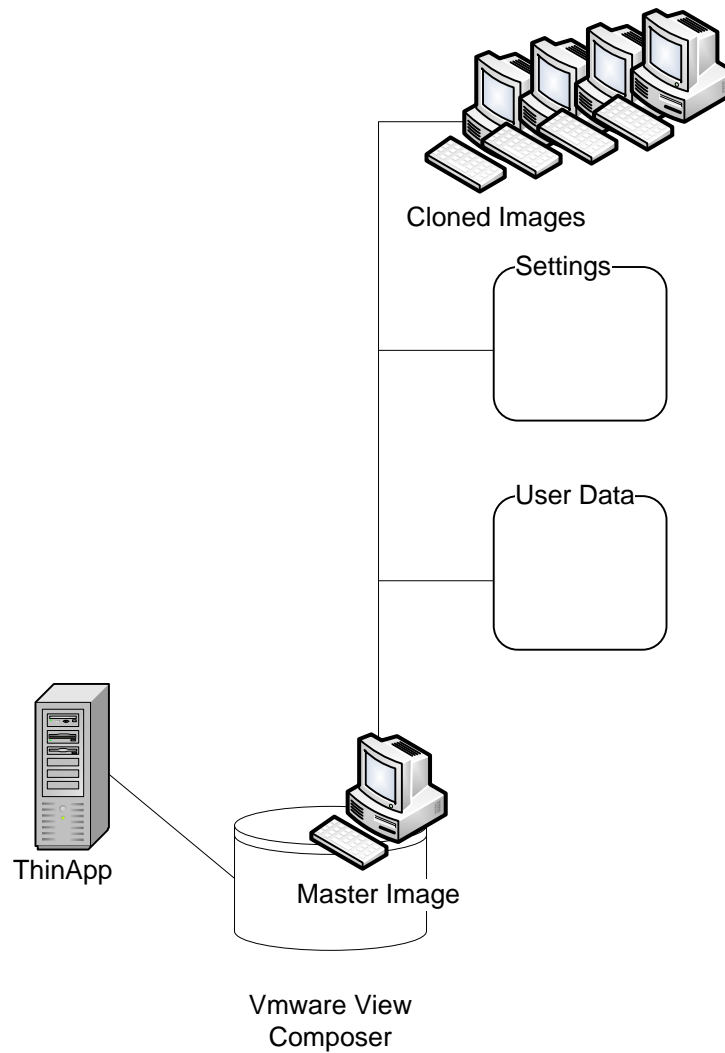
One master image is cloned using VMware’s Linked Clones technology. This cloning is a similar concept to thin snapshots in storage, where only changed data is copied for the snapshot rather than the entire volume. In this way, storage requirements and management are both minimized.

According to VMware’s numbers, storage can be reduced by up to 70% from the previous requirements for VMware VDI. Any OS or application updates or patches are applied to the master image and then pushed out to each cloned image without effecting unique user settings.



Figure 3. VMware View Composer

Source: VMware



With Composer and image cloning (see Figure 3), IT can create a master image and then have a thin clone of that file for each user. The clone includes the personal configuration information and any data changes or additions the user has made. In addition to this, because IT staff are dealing with fewer unique desktop images, the deployment of these images is streamlined significantly.



VMware ThinApp

Enterprises that choose to integrate ThinApp will also gain access to virtualized application delivery. ThinApp isolates and insulates the applications so they work on the desktop regardless of unique operating systems or patches that could interfere with operation. ThinApp works with View Composer to avoid any compatibility issues, and with View Manager 3 to allow these applications to be delivered to the end user.

VM3 provides enhanced connection brokering to VI3 virtual machines, as well as Microsoft Terminal Services sessions, Blade PCs, and remote physical PCs. All of these elements – reduced compatibility issues, delivery of images and applications to any number of end points, and central management of all desktops – results in a reduction in desk-side support time.

Offline Desktop

Desktop virtualization does not yet adequately meet the needs of truly mobile users or those who have high media processing requirements. However, the Info-Tech Impact report “[The Rise of Virtual Desktop Infrastructure](#)” has shown a number of developments to suggest that hybrid solutions for these use cases will be available in 2010. Offline Desktop is one of these potential solutions

Offline Desktop moves complete virtual desktops onto any client device. There are a couple of advantages here: users can leverage local processing power for more intensive computing, and mobile users can take their virtual desktops with them – complete with the security policies set by the administrator. When the client device is again connected to the network, the image will be synchronized with the master image.

Currently, this is offered only for experimental use, which essentially means that enterprises can use it at their own risk and VMware will not necessarily support it. Offline VM management would benefit greatly from a bare metal PC hypervisor to allow for smoother operation without the overhead of a hosted operating system (in the same way that bare metal hypervisors benefit servers).

VMware has bare metal PC hypervisors as part of its roadmap, but the market will not see them for another six to twelve months. The final goal will be for PC VMs to run at near native performance when they are hosted on a PC or laptop.

Key Takeaways

1. **Consider what needs to be virtualized.** Many enterprises might get all they need with the entry-level \$150 package. Extra money will have to be spent to implement application delivery and the currently unsupported and experimental Offline Desktop. See Table 1 below for pricing.



Table 1. VMware View Pricing

Source: VMware

Edition	Features	Price Range (USD)
Enterprise	» VI3 Enterprise » Virtual Center » View Manager	\$150 per concurrent user
Premier	» Enterprise Features, plus: » View Composer » ThinApp » Offline Desktop (experimental)	\$250 per concurrent user

- Investigate the alternatives.** Part Three of Info-Tech’s Impact report “[The Rise of Desktop Virtualization](#)” takes a closer look at success in desktop virtualization. In this section, Info-Tech sees that 75% of organizations don’t consider vendors outside of VMware and Citrix. One of the reasons for this is most find it natural to go with the vendor they use for server virtualization. VMware is less expensive than Citrix in terms of scalability; however, Citrix has a lower-priced entry-level solution, and many businesses may be able to start there. Enterprises interested in learning more about Citrix should review the ITA Premium research note “[Citrix XenDesktop Enters the Ring](#)”.
- Make sure to read Info-Tech’s Impact Reports on Desktop Virtualization implementation.** Info-Tech’s Impact research report “[The Rise of Virtual Desktop Infrastructure](#)” contains three distinct reports which cover current implementation and trends, assessment of Desktop Virtualization’s appropriateness for the enterprise, and implementation tips and mitigation of potential pitfalls. To calculate TCO, refer to the associated ITA Premium, “[Virtual Desktop Infrastructure TCO per Desktop Tool](#).”

Bottom Line

VMware and Citrix are ahead of the pack when it comes to providing software for connecting end users with virtual machine-based desktops hosted on a server. With its product View, VMware is moving toward a more comprehensive approach to supply virtualization and remote access services to the end user. As competition heats up in desktop virtualization, get the lowdown on what VMware has to offer.



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