



Citrix XenDesktop: The Best Desktop Delivery System For Today's Demanding Business Needs

Whether you're considering your first virtual desktop solution or trying to salvage an existing implementation, Citrix XenDesktop™ is the clear choice on the market that offers the performance, scalability and manageability required to meet your business needs.

www.citrix.com



In a head-to-head comparison with VMware View, XenDesktop provides a host of benefits that View doesn't offer — including clearly superior performance over any network and up to 10X lower bandwidth utilization. XenDesktop enhances IT visibility with built-in service level assurance tools for proactive problem resolution, scalable single image management and role-based application delivery for streamlined management.

In this whitepaper, we provide a point-by-point comparison between the technologies and benefits offered by Citrix XenDesktop and VMware View that you should consider before choosing a VDI provider.

Only Citrix XenDesktop™ can offer all of these benefits in a complete desktop delivery system:

High definition user experience for high performance over WAN and LAN connections

Heterogeneous device support for any thin client, PC, or MAC®

Built-in service level assurance

Single image management to reduce TCO and improve flexibility

Advanced application management, based on Citrix XenApp™ for Virtual Desktops

Open architecture for flexibility and choice in virtual infrastructure

High Definition User Experience

To meet user expectations in an enterprise-wide rollout, a PC-like user experience must be delivered to end users wherever they are — at headquarters, in a branch office, at home or on a public wireless network. User experience includes everything from screen, mouse and keyboard responsiveness to streaming multimedia performance and desktop availability.

Citrix XenDesktop delivers the best quality user experience over any network

XenDesktop incorporates Citrix HDX™ technologies that give users a rich “high-definition” experience on any network with enhanced support for multimedia, audio and video. Citrix HDX includes 6 key technologies featured in XenDesktop:

- **HDX MediaStream** — Accelerates multi-media performance by sending compressed stream to end point and then playing it locally.
- **HDX 3D** — Optimizes the display and performance of professional and desktop graphics by using software and hardware based rendering, both in the datacenter and on the end point device.
- **HDX Plug-n-Play** — Enables simple connectivity for MP3 players, digital cameras, smart phones, scanners and other local devices,
- **HDX Realtime** — Enhances real-time communications by leveraging technologies at the endpoint and in the datacenter. This enables users to connect audio peripherals such as microphones and dictation hardware at the endpoint device.
- **HDX Broadcast** — Ensures reliable, high performance network connectivity to hosted virtual desktops and applications over any network, even with high latency and low bandwidth
- **HDX IntelliCache** — Optimizes performance and network utilization for virtual desktops and applications by locally caching the bandwidth intensive data and graphics.

“With XenDesktop we can guarantee that the users will get a complete Windows XP experience, with all their applications, **exactly like having a local PC** — even over geographical distance.”

Telefonica O2 Germany

VMware View delivers poor performance

VMware View™ provides unacceptable performance over any network with 100ms or more of latency, commonly seen in branch office, remote user and offshore user scenarios. To improve WAN performance, VMware relies upon proprietary third-party display protocol technologies (such as Sun® ALP or others that are still under development), which will imply higher integration and licensing costs, unnecessary system upgrades, and on-going maintenance expense. Even for LAN usage, VMware View delivers poor performance for graphics-rich content such as Microsoft® PowerPoint™ slides.

View an online demonstration of the XenDesktop user experience at:
<http://www.citrix.com/xendesktop3>

Heterogeneous Device Support

The corporate desktop should be made available on any device, whether a repurposed PC, a Linux-based thin client, or a user's personal Macbook™.

Citrix XenDesktop delivers a high quality user experience to any device

Citrix XenDesktop delivers the best user experience on all endpoint platforms including Windows®, Linux® and Mac OS, supporting any partner thin client. This ensures that organizations can leverage any endpoint device, and enables corporate initiatives such as a work-from-home or BYOC programs. Also, contract and temporary employees can securely access the corporate desktop, no matter what device they are using.



VMware View only supports Windows endpoints

VMware's protocol extensions for RDP are only available for Windows XP-based endpoint devices, limiting customers' flexibility and choice. VMware may claim to support other endpoints but these will revert to basic RDP functionality, losing support for USB connected devices, local printing and any local graphics acceleration.

Service Level Assurance

Centralization can limit visibility into how desktops are performing for users. Simply measuring system metrics are not enough; desktop administrators will need the ability to monitor performance of desktop delivery and virtual desktop responsiveness. IT needs to be able to proactively correct any performance problems before the user is forced to contact the help desk.

Citrix XenDesktop has built-in service level assurance

Citrix XenDesktop is the only virtual desktop solution with built-in service level assurance that monitors end user experience.

- **Monitors and measures desktop performance** — Real time alerting and access to machine, network and application performance information for fast problem identification and resolution
- **Identifies problems at-a-glance with alert and dashboard views** — Identifies users, machines and applications most heavily impacted by issues to aid prioritization of support resources

- **Proactively pinpoints poorly performing applications** — Utilizes detailed contextual information about the user actions, error messages and system state to identify the source of application performance issues — eliminating the need to reproduce problems after the fact, reducing resolution times and improving support proficiency
- **Built-in one-click support** — Includes centralized, web-based support to quickly resolve user problems on the fly.

VMware View does not include SLA monitoring

VMware View does not include any user experience monitoring or support capabilities. VMware's recommendation is to seek third-party options, which means additional software and integration costs.

Single Image Management

To achieve significant desktop management cost savings, IT needs the ability to manage all virtual desktops from a single image. IT should be able to update, patch and refresh all virtual desktops by simply applying the changes to the master desktop image.

XenDesktop offers scalable and proven single image management

XenDesktop enables thousands of desktops to run off a single master image through the use of provisioning services. The provisioning server ensures high throughput and performance between the master image and the virtual desktops, enabling the virtual infrastructure to achieve maximum scalability. With provisioning services, IT has the flexibility to host desktops on either virtual machines or blade PCs in the datacenter. Alternatively, you can stream desktops directly to standardized PCs on the LAN, getting the benefits of centralized single image management while leveraging the power of the endpoint. This approach requires minimal up-front investment in server infrastructure.

With XenDesktop, single image management does not come at the expense of personalization. Only XenDesktop offers built-in profile management and role-based application delivery, enabling the solution to dynamically assemble the desktop for each user.

VMware View Composer is inflexible and unproven

In an attempt to deliver similar image management capabilities, VMware View Composer just recently introduced "cloning." There are a number of disadvantages to this approach. Cloning was originally designed for the fast replication of servers and data — not dynamic desktop assembly, nor single image management. The clone management, throughput and performance must be handled by the virtualization infrastructure, which ideally should only be responsible for hosting desktops. At this early stage, it is uncertain how large an impact cloning will have on the overall scalability of the hosting infrastructure. Furthermore, View Composer is locked into the ESX virtual infrastructure, unable to leverage the latest benefits of alternative hypervisors, such as Hyper-V or Xen.

Personalizing the cloned desktop with user's settings and applications comes at the expense of increased storage requirements and management complexity. Applications must either be built into the different base images for each user group — stifling flexibility and leading to image sprawl — or deployed to each clone using third-party solutions, adding complexity and consuming more SAN storage.

Application Management

No desktop virtualization project will succeed without a carefully planned methodology for deploying applications into this environment.

XenDesktop offers role-based application delivery with granular access control

XenDesktop includes proven XenApp for Virtual Desktop technology, enabling IT to centrally manage a single instance of each application workload. This technology has the following key advantages:

- **Delivers apps based on user roles** — Provides each user with a unique set of pre-authorized applications using Active Directory integration, without altering the master desktop image
- **Provides granular, policy-based access control** over apps, based on login credentials and access method
- **Separates apps from the standard OS image** and delivers them using any of the following three methods:
 - App streaming – managed centrally, runs on the virtual desktops
 - App hosting – managed centrally, runs on server infrastructure
 - Local apps – installed on the master desktop image or the virtual machine

This application delivery enables the most efficient, cost-effective use of server infrastructure, placing applications where they will run best and consume the least amount of server resources for lowest hardware acquisition, management and support costs.

VMware View does not have an enterprise class application virtualization system

View is bundled with ThinApp, which is an application packaging utility that lacks any ability to deliver applications, much less define role-based policies. If IT wants to get the benefits of single image management, they must build all applications into the master image or use third-party solutions to deploy the ThinApp packages to each clone. ThinApp has no form of access control, so there is no ability to assign a set of applications to an individual user or department or to allow self-service.

Any update to the ThinApp-packaged applications will require an update to the image which may require an update to the clone. This can result in significant management overhead. Since there is no concept of application hosting, applications may not be offloaded to a separate infrastructure, placing the burden of application load squarely on the virtualization infrastructure.

Open Architecture

In a rapidly changing technology environment, you need choice and flexibility to leverage the latest advancements, without having to continually overhaul the fundamental architecture.

Only Citrix XenDesktop supports any virtual infrastructure

XenDesktop supports Citrix XenServer™, Microsoft® Hyper-V and System Center Virtual Machine Manager (SCVMM) and ESX. With XenDesktop, virtual desktops can be served by any or all of these virtualization environments and may be easily moved from one to the other as required.

VMware View locks you into ESX

VMware View is tightly integrated with its own ESX hypervisor, requiring that virtual desktops be run only on ESX, providing no ability to migrate to other infrastructures.

In Summary

Citrix XenDesktop provides the following advantages over VMware View:

Benefit Summary	Citrix XenDesktop	VMware View
High definition user experience on any network	✓	Office apps on LAN only
Best user experience on all endpoint platforms	✓	-
Built-in service level assurance	✓	-
Manages physical and virtual desktops with a single image	✓	-
Built-in profile management	✓	-
Delivers apps based on user roles	✓	-
Granular, policy-based application access control	✓	-
Scalable Single image management	✓	-
Flexibility and choice of VM infrastructure	✓	-

Conclusion

When it comes to virtual desktop solutions, only XenDesktop has the capabilities to meet all of your needs. You'll realize increased user satisfaction, fewer problems and greater adoption by providing a clearly superior user experience with high definition performance across any network — on any endpoint platform. For IT, visibility into performance is delivered through built-in service level assurance and single image management, enabling your team to identify and solve issues before they become problems. Faster resolution and streamlined management result not only in massive time savings, but also in lower overall cost of ownership.

For more information, please visit: www.citrix.com/XenDesktop



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About Citrix

Citrix Systems, Inc. (NASDAQ:CTXS) is the leading provider of virtualization, networking and software as a service technologies for more than 230,000 organizations worldwide. Its Citrix Delivery Center, Citrix Cloud Center (C3) and Citrix Online Services product families radically simplify computing for millions of users, delivering applications as an on-demand service to any user, in any location on any device. Citrix customers include the world's largest Internet companies, 99 percent of *Fortune* Global 500 enterprises, and hundreds of thousands of small businesses and prosumers worldwide. Citrix partners with over 10,000 companies worldwide in more than 100 countries. Founded in 1989, annual revenue in 2008 was \$1.6 billion.

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