Expert Reference Series of White Papers

Top Five Reasons Your Company Needs VMware Horizon View 5.2

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Introduction

VMware Horizon View is a universal client solution that enables users to access their desktops, data, and applications as they've come to expect – anywhere, anytime, and from any device. With the advent of the personal computer, the IT group lost control of desktop computing, and now it's time to seize control of the end user computer again and move it back into the datacenter. VMware Horizon View provides this opportunity. With VMware Horizon View, users get an individualized view of their applications and data on any device of their choosing; virtual desktops do not need the complexity, power, or operational expenses like physical desktops. Data and applications are secure in the datacenter with logical and physical security, plus administrators can quickly respond to application demands, provisioning more resources as needed. Horizon View can provision additional desktops without administrator intervention, reducing manual tasks associated with provisioning for additional capacity and new users. Virtual machines (VMs) are easy to copy, simplifying business continuity planning and disaster recovery. Thin clients consume approximately ten percent of the actual power consumption of a physical desktop. There are five top reasons why your company needs VMware Horizon View 5.2:

- New, advanced hardware support focused on VDI
- Simplified bring your own device (BYOD) solutions
- Tight integration with the VMware Horizon Suite
- New and improved VMware Horizon View 5.2 features
- Market projections

This white paper will cover these top five reasons why a company needs VMware Horizon View 5.2 and some considerations for each point. This paper assumes that the reader has some technical experience with virtual desktop infrastructure (VDI) and VMware Horizon View.

5. New Advanced Hardware Support Focused on VDI

Flash-based storage

The adoption of VDI is prompting a change in the way we build and manage our storage systems. Many organizations, though supporting the idea of VDI integration, have failed to implement this technology, primarily because of performance and cost concerns. The root cause of many VDI deployment failures is storage. Storage systems can be put under extreme stress when trying to fulfill the data requests of hundreds or potentially thousands of virtual desktops. A driving factor for VDI performance is the number of input/output operations per second (IOPS) that the storage system can execute. Slow I/O will cause poor response times and, more importantly, user complaints. Legacy, disk-based storage was not designed to keep up with the economic and performance

challenges of a modern VDI deployment; matching the IOPS of a physical desktop with a virtual datacenter has been one of the major roadblocks to VDI adoption.

The larger storage vendors are addressing the IOPS issue by adapting their current systems with the addition of solid-state drives (SSDs), used for caching, to take care of the I/O operations while still using traditional spindle disks for capacity on the back-end. As flash storage becomes more commonplace, VDI has become a more attractive solution for many organizations. Flash storage provides better performance with consistently low latency and also delivers other features like compression and inline de-duplication, both of which can help lower the cost. Not only are the larger vendors addressing VDI issues, but also there has been a surge of new storage systems: many start-ups that target VDI and other high-IOPS environments. Most of these consist of appliances storage and servers using flash, packaged usually as all-SSD or hybrid SSD, and traditional spindle-based hard drive boxes. These packages are paired with software and operating systems (OSs) that make data processing as efficient as possible to get the most performance out of the spindles.

GPU advancements

In recent history, there have been major advancements with graphics processing units (GPUs) and this is being integrated by VMware to add full hardware graphics acceleration to their VDI products. There are two main ways that this is being implemented. First, the individual desktop VMs are now able to access shared GPUs in the VDI servers, allowing users to run applications that require GPUs (such as CAD, 3-D modeling, etc.). This allows multiple users to share common hardware and ensures that VMs running on a single server can now economically support a higher consolidation of users and desktops while providing native graphics and GPU computing performance. Secondly, the NVIDIA VGX GPU hypervisor is a software layer that can integrate into a commercially available hypervisor, which effectively enables access to virtualized GPU resources. This leverages GPUs in VDI servers to do hardware-based encoding of the graphics streams for the remote protocols. The upshot is that there is now the ability to have high-quality graphics over a lower bandwidth connection without creating an enormous CPU load on the server, since the GPUs can handle graphical computations. This is a tremendous benefit for VDI and graphically challenged workloads. As this technology matures and competition increases from other vendors, prices will drop, making this technology a standard part of any future deployment.

Virtual disk advancements

VMware Horizon View 5.2 leverages a new vSphere capability that implements a new disk format for VMs on VMFS, known as the SE sparse disk, that allows for grain reduction size and a more efficient utilization of allocated blocks, enabling the ability to reclaim previously used space within the guest OS, while allowing View Composer desktops stay small. SE sparse disks reduce storage capacity requirements for persistent desktops.

This new SE sparse disk includes a space reclaim feature to allow for the reclamation of blocks that were previously used but are no longer in use because of operations such as file deletions, temporary files, etc. This process has two steps: the first being the wipe operation that frees up a contiguous area of free space in the VM disk; the second step is the shrink operation, which truncates the area of free space to return the physical storage to the free pool of space. VMware Tools and Hardware Version 9 are required for the VM to use SE sparse disks.

With the introduction of the SE sparse disk, the default grain size is set to 4KB. Grain size is the size of a grain in sectors. Previously in vSphere 5.0, the default grain size for a VM disk was 4KB, but redo logs, which are used

by snapshots as well as linked clones, had a grain size of 512 bytes. This is no longer the case. The redo logs now also have a grain size of 4KB and are tunable. Adjustments can be made based on application or storage array requirements. VMware Horizon View Composer is able to use linked clones for a desktop rollout and can benefit from the new 4KB grain size. This addresses alignment issues experienced with some storage arrays with the 512-byte grain size used by linked clones with the vmfsSparse (redo log) format, thus improving performance.

4. Simplify your BYOD Solution

Everyone in today's world is connected, from the executives to the interns, and everyone wants to be able to use their personal tablets, laptops, and smartphones to work when it is convenient for them to do so. BYOD is a trend in which employees use their own devices on the job. VMware has several solutions to help manage your BYOD environment. VMware Horizon Workspace allows administrators to allocate data, applications, or even desktops to an end user or group, thereby allowing a user to provision services and applications themselves. This product allows for adding new devices, applications, or users without reconfiguring the devices, while offering centralized management for enforcing policies. Horizon View 5.2 with Unity has a fresh gesture-oriented interface that produces a tablet-like experience with Windows mobile environments.

HTML-5 access is a new feature (discussed later in this white paper) that opens up many BYOD possibilities for the end users. This feature can provide a way for an end user to connect without having to be a local administrator on their desktop, a big win for any IT department.

3. Tight Integration with the VMware Horizon Suite

VMware has focused on View for years as its end-user computing initiative. VMware combined the management of virtual desktops, physical desktops, and mobile applications. VMware Horizon Suite updated and renamed a few products that may already be familiar, such as View and Mirage, and has bundled them with a new management product called Horizon Workspace.

VMware Horizon View is VMware's popular VDI solution that has been renamed from simply "VMware View." The product securely delivers virtual desktops as managed services from a central virtualization platform to include an OS, a set of applications, and data. Horizon View can help simplify and automate the management of potentially thousands of desktops while simultaneously increasing security.

VMware Horizon Mirage provides a layered image management tool that supports a Horizon View infrastructures, as well as physical desktops, by dividing the PC into logical layers (the OS, applications, and data) that are owned and managed by either the end user or the infrastructure administrators. Horizon Mirage sends a complete copy of the desktop to the datacenter and keeps it synchronized. This way, if a user goes offline, then Horizon Mirage will perform a synchronization the next time that the user comes back online; this may include updates that the administrators has made to the datacenter managed layers and also end user changes to their profile or data.

VMware Horizon Workspace, previously known as Project Octopus, is a mobile file syncing application that unifies, secures, and controls access to software-as-a-service (SaaS). This product provides a single aggregated

workspace for all end-user devices, to include iPhone, iPad, and Android, while still allowing administrators to apply user-based policies for data and applications, effectively enabling BYOD while reducing end user complexity.

VMware Horizon Suite offers a benefit for every type of end-user device within a company. No matter what device an employee is using or where the employee is located, the same core company applications can be accessed without delay. VMware Horizon Suite makes the management and usability of end-user devices far more manageable for the datacenter administrators, as well as increasing the security of the network.

2. New Horizon View 5.2 Features

There have been several new Horizon View 5.2 features mentioned throughout this white paper, including GPU advancements and the SE sparse disk. There are other new features that help improve the user experience, including media services for unified communications to provide Microsoft Lync 2013 client support. This feature enables a tighter integration between Office applications and Microsoft Lync for full collaboration capabilities like compression of USB webcam traffic and improved performance of USB media. Full support is available for unified communications VoIP and video on both RDP and PCoIP.

Access to desktop and applications via Horizon View is now possible from any modern device using remote protocols from any HTML-5 capable web browser. The installation of any software or plug-in is not necessary; an end user can quickly access their desktop on any device. This provides true install-free access to virtual desktops.

Windows 8 is now fully supported as a guest OS for a virtual desktop aligned with Windows 8 Client Support.

There is no longer an eight-host limit for linked clones using VMFS. The new limit is 32 hosts per cluster, regardless of pool type, linked clone or not. This is a big design change for future deployments of Horizon View. Also, there is now support for up to 10,000 virtual desktops per Horizon View pod within a single vCenter Server instance. Horizon View 5.2 now fully supports the use of the vCenter virtual appliance, eliminating the vCenter dependency on Windows.

A Horizon View plug-in is available for the vSphere Web Client, making it "aware" of Horizon View objects like desktops, pools, and users. This gives the administrator a single pane of glass to easily provide desktop support, reducing console hopping. The Horizon Suite also supports SSO brokering of users to available virtual desktops, based on entitlement policy.

Improvements have also been made to PCoIP support, including image caching now supported on the Teradici APEX card and Tera2 Zero Clients, and also improved image caching compression and management. As for security, OpenSSL was upgraded to a more secure version and weak SSL ciphers were removed. Windows 8 supports a multi-touch (recognition of multiple simultaneous fingers on a touch screen) PCoIP connection on compatible hardware. When running in metro mode from a touch screen-enabled Windows 7 or Windows 8 endpoint, multi-touch remote access can provide a richer user experience.

1. Market Projections for VDI Say There's No Better Time than Now

The past few years have given rise to VDI domination over traditional physical desktops, and the pace of mobile network expansion is driving the market for better audio/video technology and hardware that is capable of increased longevity. Market adoption rates for VDI have never been higher. According to Gartner Research, the worldwide VDI market is projected to continue increasing through the end of 2013 to reach 49 million units, a vast improvement from a mere 500,000 in 2009. This translates to $65.7 billion in VDI revenue this year, which is approximately 40 percent of the global PC market.

So why such an increase in 2013? Many enterprise corporations jumped on the VDI train before now, but the mid-market is currently looking at virtual desktop solutions for their environments. The mid-market typically waits until the product matures to the point that the performance is worth the risk of moving forward. In a study performed by Dimensional Research, 80 percent of the surveyed companies of 5,000 employees or less were considering VDI as a part of their IT strategy for the year. With the momentum shifting in the thought process of computing anywhere at any time, the market-based research and factual evidence, 2013 will be the year for VDI.

Conclusion

With the growth of bring-your-own device and mobility, users are increasingly asking for computing anywhere from any device at any time. Users now expect productivity on the go with a desktop that can be freely accessed and secure. We're no longer a society that sits at a desk to be productive. The VMware Horizon Suite allows the datacenter administrators to satisfy the accelerated mobility needs of the workforce while still maintaining an IT solution that is easily managed and secure.

It is an exciting time to be on the cutting edge of technology with this shift of end user computing moving back into the datacenter.

References

For more information on VMware Horizon View 5.2 and the features mentioned in this paper, see the following documents on VMware's website:

What's New in VMware Horizon View 5.2

VMware Horizon View 5.2 Reviewer's Guide

"Gartner says Worldwide Hosted Virtual Desktop Market to Surpass $65 Billion in 2013" (http://www.gartner.com/newsroom/id/920814)

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VMware Horizon View: Install, Configure, Manage [v5.2]

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About the Author

Rebecca Fitzhugh is a VMware Certified Instructor and Consultant whose primary focus is on VMware virtual infrastructure products and vCloud Director. Prior to becoming an instructor and consultant, she served fiv e years in the United States Marine Corps where she assisted in the build-out and administration of multiple enterprise networks residing on virtual infrastructure. Rebecca currently holds the VCAP-DCA, VCP-DCV, VCP-DT, and VCP-Cloud certifications, as well as various other industry certs.