

MOVING VIRTUAL DESKTOPS TO THE CLOUD

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Executive Summary

Physical desktop computer infrastructures no longer make sense for the corporate world. Not only are they expensive, insecure and maintenance-heavy, they also cannot effectively support the changing business IT landscape. The ground-swell of Windows 10 migration plans, expanding virtual workforce, growing popularity of mobile devices and demand for BYOD (Bring Your Own Device) support, and tighter IT budgets all point to the need to reevaluate desktop strategies. By moving virtual desktops and applications to the cloud, companies can realize all the promised benefits of virtualization—centralized management, improved data security and simplified deployment—without the exorbitant cost, limitations or hassles of having to manage it themselves.

This white paper will explore the reasons for changing traditional desktop computing strategies, why cloud-hosted virtual desktops and applications are a compelling solution for many businesses, and how to leverage cloud-hosted desktops and applications for Windows 10 migrations, mobile employees, and seasonal workers.

Desktops: Ripe for Change

Desktop computing has become a millstone for IT departments. While it is essential for delivering must-have applications and services to end users, IT managers are burdened by the tremendous amount of time, complexity and cost inherent in managing and securing physical PCs. And, a progressively tech-savvy user base is becoming increasingly frustrated because their computers don't have the flexibility and capabilities that they have come to expect.

Businesses have been aware of these issues for years, but it is only now that the tipping point for change has arrived. The trifecta of Windows 10, increased use of mobile access devices, and tighter IT budgets has created the perfect storm for desktop computing change.

- **Migration to Windows 10:** With Microsoft dropping support for Windows XP, and the recent release of Windows 10, many companies are exploring a Windows refresh. However, many older PCs are not equipped to run Windows 10—which means that businesses need to purchase new computers in order to migrate workers. Organizations that decide to upgrade existing computers instead of replacing them won't save much money because of the new parts and labor needed for memory, hard disks and/or video adapters.
- **Expanding Mobile Access:** IDC forecasts that mobile workers will comprise nearly three quarters of the total U.S. workforce by 2020.* These workers will be accessing business applications and services from a variety of devices, including increasingly popular iPads, Android-compatible tablets, and smartphones. Companies need a way to enable anywhere, anytime access.
- **Tighter IT budgets:** PCs can consume 7-10 percent of IT budgets, yet provide no competitive advantage. With continued economic volatility, businesses are keeping a closer rein on IT expenditures. Wholesale PC refreshments and Windows 10 upgrades are no longer feasible, and the cost of supporting an increasingly dispersed user base needs to be reduced.

Is VDI the Only Answer?

The need to reevaluate desktop strategies is driving many companies to consider virtual desktop infrastructure (VDI)—and with good reason. VDI has promised to solve many traditional challenges of physical desktops. Because virtual desktops are centralized onto virtual machines that run on corporate data center servers, VDI makes day-to-day tasks such as deploying new desktops and applications, and supporting distributed workers, much easier and less labor intensive. Users access their virtual desktops via PC remoting technology, making it possible for IT to finely control the movement of data into and out of the data center. Because data is not stored on the local device, companies are at much less risk if PCs or mobile devices are stolen or lost.

Even with all of these benefits however, there are some important considerations to take into account before moving forward. These include:

- **Costs:** Although VDI is less expensive than fleets of physical computers, it's important to consider the upfront CAPEX required to start a VDI deployment. When looking at the upfront costs of a VDI deployment, you must take into account the compute, networking, storage requirements for the design, along with the power, cooling and floor space needed for a successful deployment.
- **Complexity:** The technologies needed for VDI (i.e., servers, storage, networking, thin clients and virtualization software) are provided by many different vendors, causing considerable confusion among IT staff about which technologies to adopt. Additionally, VDI technologies are often managed by different internal IT groups, which can make coordinating virtual desktop initiatives challenging. With VDI, organizations also need to ensure they have the right IT skills and experts to manage their virtualization infrastructure.
- **Ramp up:** Although it is much easier to deploy virtual desktops than physical desktops, IT must have capacity to deploy them. This makes it particularly difficult when companies need to scale up quickly to support employees or consultants on time-sensitive or temporary projects. And, because of latency issues, performance is best when users are located near the data centers. However, most companies don't have the geographically dispersed data center footprint needed to ensure optimal, or even adequate, performance.

Why Cloud-Hosted Desktops and Applications Make Sense

Cloud computing has been gaining a tremendous amount of attention because of the flexibility and cost savings it can deliver. Just as virtualization started on the server side and then, once proven, began moving to the desktop, the cloud is now ripe for desktop infrastructure.

By moving desktops and applications to the cloud, rather than an internally deployed and managed data center, businesses can realize all the promised benefits of virtualization desktops—centralized management, improved data security and simplified deployment—while avoiding exorbitant costs, limitations and hassles.

The advantages of cloud-hosted as a service include:

- **Reduced desktop costs** – Because the physical infrastructure powering virtual desktops is outsourced, IT organizations are immediately able to achieve a positive ROI. Not only do cloud-hosted desktops eliminate VDI's upfront CAPEX outlay and three-to-four year depreciation schedule, but businesses also convert desktop computing CapEx into OpEx. Virtual desktops and apps can be subscribed to at a set monthly rate, and businesses only pay for the virtual desktops that are needed. All of this translates into reduced desktop total cost of ownership (TCO), achieved at the beginning of a cloud-hosted desktop deployment—as opposed to a goal that is 18 – 24 months out. Companies can now budget for a set monthly fee without any hidden costs or surprises.
- **Ease of manageability, one-touch support** – The complexities associated with designing, implementing and supporting virtual desktops are gone. Cloud-hosted virtual desktops are easy to buy and implement. The physical infrastructure is already available from the provider, and companies outsource all deployment and operations. This also saves a lot of money that was traditionally spent on physical desktop maintenance, while minimizing the technical expertise businesses need to leverage virtual desktops. Additionally, because desktops are delivered by a provider over a secure network and supported by a Service Level Agreement (SLA), end users can expect better availability of their desktops than can be delivered with physical PCs, which often require a desk-side visit when things go wrong.
- **Device and location independence** – Businesses can embrace their geographically disperse and increasingly mobile workforce by providing device and location independence.
 - *Device independence:* End users can work and access corporate applications and data from any device.
 - *Location independence:* Because providers have multiple locations, proximity to the data center challenges are eliminated. Users can work from anywhere – at home, in a coffee shop, or across the globe.
- **Flexibility** –
 - *No vendor lock-in:* IT no longer has to worry about which virtual desktop-related technologies to select, implementing technologies that may become obsolete, or being restricted to particular vendor roadmaps.
 - *Fast ramp up and down:* Businesses can quickly scale up or down by adding or removing virtual desktops and apps to the monthly subscription in minutes. This enables IT to deliver on many challenging types of projects (both short- and long-term), such as scaling up desktop environments for seasonal work or quickly deploying desktops for offices in new geographic markets.
 - *Geographic agility:* Corporate data center footprints won't constrain virtual desktop deployments. Cloud-hosted desktops can be deployed with global scale. This allows users to gain access to their virtual desktop from just about anywhere, and businesses to expand the regions where they source talent, since they are no longer limited to corporate offices and internal infrastructure reach.
 - *Easy to try and buy:* Because there is no infrastructure or software to deploy, businesses can quickly and easily try cloud-hosted virtual desktops before buying.

Optimal Use Cases for Cloud-hosted Desktops

Businesses can realize a substantial impact on their operations by leveraging cloud-hosted desktops and applications for key scenarios. Following are ideal use cases for desktops and apps in the cloud:

- **Cloud savvy organizations:** Companies that are looking to leverage the benefits of the cloud.
- **Small and medium businesses:** Businesses that don't have the endless IT resources required to deploy and manage physical or virtual desktops.
- **Remote workers:** Whether they are telecommuting, offshoring, or contracting, virtual workers are becoming a larger percentage of the corporate end user population every year. With cloud-hosted desktops, businesses can support geographically dispersed workers in a very cost-effective and secure manner. Contractors can easily access the corporate environment from their personal devices, and employees can access their desktops and apps when they're at home or on the road—even when they don't have their own computer. Overseas workers can be granted access to the corporate network without concern that sensitive data will be at risk from loss or theft since it is not stored locally.
- **Elastic and flexible demands for desktops:** Many companies need desktops for unique tasks or one-off projects. For example, developers need environments for building and testing applications. The flexibility of cloud-hosted desktops and apps enables rapid scaling of desktops and apps to accommodate evolving needs.
- **Windows 10 Migrations:** Instead of having to replace or upgrade desktops in order to run Windows 10, businesses can use their existing hardware. Not only will they save money that would have been spent on near-term PC refreshes, with cloud-hosted desktops they can extend the life of their existing fleet beyond what would have been possible and, when they do decide to replace their rich desktops, they can do so with less-costly and more power-efficient thin client devices.

VMware Helps Customers Succeed in the Cloud

VMware is helping customers across industries leverage cloud-hosted desktops to rethink their desktop strategy to address IT challenges. With VMware's Horizon Cloud Service, customers can easily manage cloud-hosted or on-premises virtual desktop environments from a convenient, easy to use cloud control plane, giving them the freedom to and flexibility to move the cloud on their terms.

Retail Distribution

G&J Pepsi-Cola is the largest privately owned and operated Pepsi franchise bottler with 11 locations in Ohio and Kentucky, more than 1,600 employees, and 300 beverage routes. Eric McKinney, G&J Cloud Services Manager leveraged cloud technologies to streamline the way headquarters communicates information to the field, helping save time, money, and resources.

McKinney is responsible for more than 1,000 endpoint devices, and is a strong advocate of the "cloud first" strategy, which "allows us, as IT, to focus on the business." G&J started out with a VDI solution in its data center but found that though it was a great solution, it was difficult to constantly manage. For an enhanced solution, McKinney worked with VMware and G&J cloud provider, Peak 10, "to get out of the data center business and hand over the managed hosted desktop service to VMware." As a result, G&J shifted its VDI images to the hosted service.

Horizon Cloud enables kiosk users, truck route drivers, merchandisers, and external vendors to log in to a predictable environment where McKinney and the IT team can provision workspaces at a moment's notice. Without adding a lot of cost, G&J has been able to scale quickly. They've gone from 425 users to upwards of 900, with the opportunity to add more users without having to add additional headcount to support. "It's been fantastic...We couldn't be happier. Now we have time to get involved in projects that don't directly deal with IT. It's all about expanding our offerings and services as a whole."

Financial Services

A national financial services company with 85 employees, 60 loan officers, and three call centers spread across the United States was struggling to manage ten small branch locations. The company's IT Director was looking for a better solution to managing all of these remote offices. "These locations weren't large enough to have their own firewall, router, and server so we were at the mercy of Comcast, and Time Warner Cable—this was the catalyst for us to explore VMware solutions." The company needed a more cost-effective solution and went with VMware. "We cut our budget in half by removing local servers from branch locations, deployed Dell Wyse zero clients and cloud-hosted desktops. As a result, you can't tell the difference if you're local or not."

Additionally, before deploying VMware, the company spent \$800-900 per user. Says the IT Director, "Now, the price per user is just half of what it was—\$250 for a zero client plus \$200 for a monitor, with the added benefit of being able to provide employees with an improved user experience."

"VMware has given us a clean, consistent desktop experience; and we're also able to easily monitor and secure the desktops to all of our web services. A year ago, it would have taken a local IT administrator at each of our three locations to manage what we have now. With VMware, that can all be done remotely. We can install Microsoft applications like Visio in just 15 minutes, and before it would have taken a couple of hours. Security-wise, it's a huge improvement...Everyone in the company is a big fan of VMware."

Global Asset Management

Scott Myers, head of Cloud Services, works closely with Cloud Architect Kelly Jones, at Zebra Technologies, a worldwide company that currently holds more than 4,200 asset management technology patents. Less than two years ago, the company acquired Motorola Solutions. As a result of the acquisition, the company was incurring daily transitional service agreement costs that approached six figures. Zebra deployed VMware for its ease of use, cost, operational management capabilities, and ease of meeting compliance. For IT, the triggers to consume desktops from the cloud ultimately came from "a huge undertaking to integrate the two ERP systems," and the "convenience factor" of rapid access to desktops.

Zebra now has its virtual server infrastructure in the same data center where its hosted desktops are located. Jones commented, "We'd start at a few hundred desktops over the next year, to easily pushing upwards of 1,000." As Zebra continues to embrace cloud-hosted desktops, IT's focus has shifted from maintenance mode to "Can you give me capacity fast enough?" Said Myers, "As quickly as we can

commission desktops, they're consumed. Within 24 hours of getting 100 desktops, they're all gone. And just for the record, these were persistent desktops." The rapid adoption quickly validated the investment as employee demand has quickly spread inside the organization.

Education

A Systems Analyst in the Digital Initiatives and Information Technology department at UCLA, Cindy Kimmick helped deploy a large VDI implementation as part of a state-of-the-art library renovation in 2011. With a deployment of 150 desktops, she witnessed that the desktops "ran amazingly fast because desktops and apps are in the data center, on the fast network, rather than on their PCs outside." Her department replaced aging PCs with HP thin clients since they enabled both public and UCLA logon access to a predictable environment, which included applications too expensive for students to purchase.

In 2015, Kimmick learned that the original VDI solution would no longer be supported by the IT vendor. After attending VMworld 2015, Kimmick discovered VMware Horizon Cloud, and was attracted to the solution's ease of use, and was enthusiastic about being an early adopter. Kimmick is delighted with the speed at which VMware Horizon Cloud spins up desktops, and was elated by its simplicity: "It's the hybrid cloud. Being able to use something internal to your organization, or hybrid cloud, with the same management interface is so much simpler for the people administrating and troubleshooting it, and easier to train people how to use it." As they continue to deploy Horizon Cloud, Kimmick is excited that the IT department will be able to focus on initiatives unique to the UCLA library, rather than running a data center.

Conclusion

The desktop market is ripe for change. Windows 10 migrations, new flexible business models, the need to reduce desktop TCO, demand for mobile device support, and increasing adoption of cloud technologies are driving organizations to reevaluate their desktop strategy.

Cloud-hosted virtual desktops eradicate barriers to adoption, delivering a complete desktop from the cloud, providing all the benefits of VDI without any of the upfront investment. Businesses can eliminate the cost and complexity of deploying and managing desktops and applications, while enabling the flexibility that users require. And, by transforming desktops from the CapEx outlay inherent in onsite VDI and physical PC refreshes, businesses benefit from a predictable, easy to budget OpEx-based desktop environment. VMware makes it easy to take advantage of cloud-hosted desktops and applications.

To learn more: www.vmware.com/go/horizoncloud

*IDC U.S. Mobile Worker Forecast, 2015-2020 - <http://www.idc.com/getdoc.jsp?containerId=256194>



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