# White
# Paper

## Hosted Desktops Rightsized for Desktop Transformation

*By Mark Bowker, Senior Analyst*

**December 2013**

This ESG White Paper was commissioned by Citrix and HP
and is distributed under license from ESG.

# Contents

# Desktop Challenges Create Opportunities for Alternative Delivery Models

The increasing numbers and types of devices used in the workplace make desktop management and delivery a daunting task for IT staffs. The ongoing maintenance and management tasks associated with supporting these various device types directly translate into considerable IT staffing requirements and costs associated with desktop delivery infrastructure, which demands performance reliability and an *uncompromised end-user experience*. Security, cost, and compliance further compound PC challenges as the desktop and application delivery landscape continues to change and introduce new processes, such as "bring-your-own-device" (BYOD) and alternative application delivery models, forcing IT organizations to reevaluate the manner in which digital workspaces are provided to employees.

Many organizations have begun to address these challenges by leveraging alternative desktop delivery models such as virtual desktop infrastructure (VDI), but according to ESG research, increased network bandwidth requirements and poor performance continue to be reported challenges, as shown in Figure 1.[1] These issues being at the forefront of desktop virtualization adoption is not surprising given the centralized nature of the technology, which means that not only are commands no longer executed on local endpoint devices, but also there is an increased dependence on both internal and external network infrastructure to deliver PC environments to end-users.

*Figure 1. Top Five Challenges Current Users Have Experienced with Desktop Virtualization*

**To date, what challenges – if any – have you experienced with your desktop virtualization solution? (Percent of respondents, N=136, multiple responses accepted)**
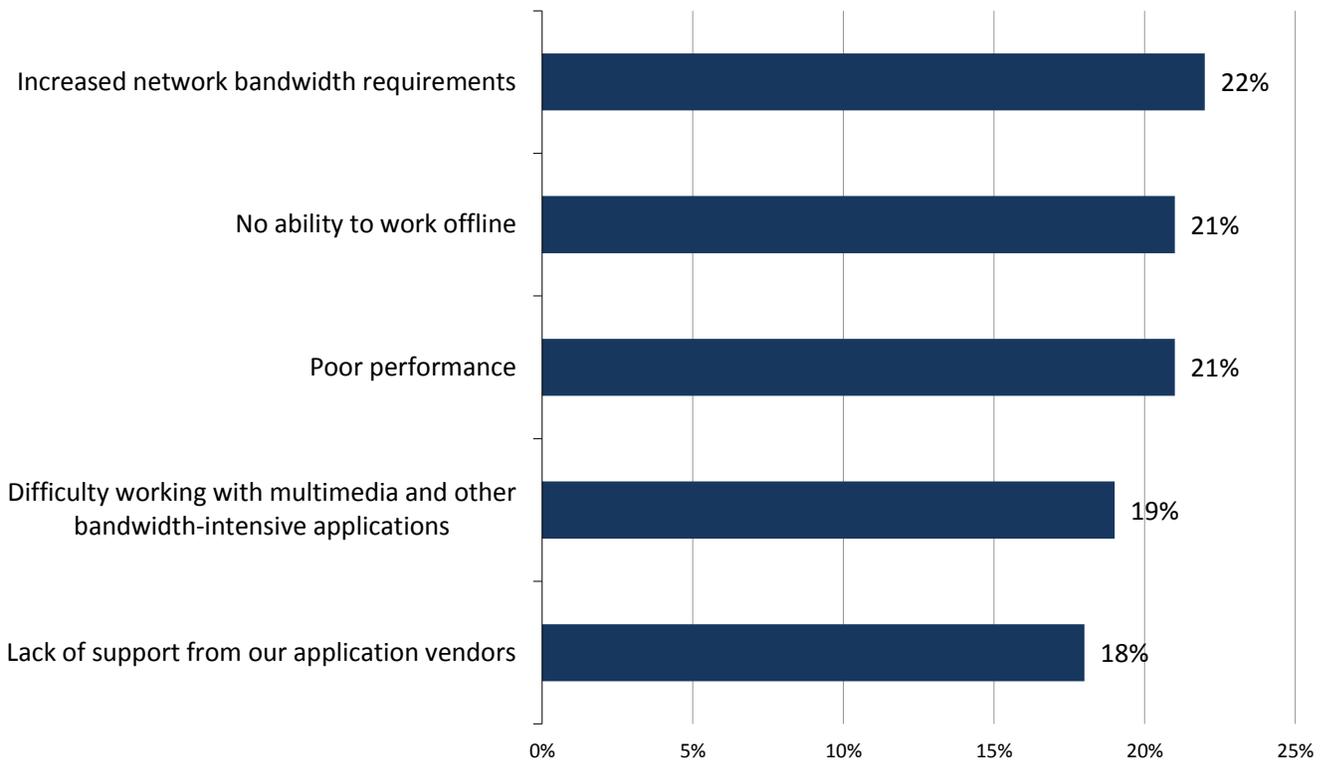


Source: Enterprise Strategy Group, 2013.

---

[1] Source: ESG Research Report, *Desktop Virtualization Market Evolution*, February 2013. All other ESG research references and charts in this white paper have been taken from this research report.

**Targeting Knowledge Workers Results in Improved IT Control and End-user Computing Experience**

Desktop virtualization is implemented in a variety of delivery models, each of which have provided value for certain roles and responsibilities, yet an opportunity remains to roll out the carpet for mainstream knowledge workers or low-end power users requiring access to multiple applications and multimedia. Recent ESG research discovered that surveyed organizations generally use or expect to use desktop virtualization for workers who typically operate outside of the confines of a traditional office setting—for example, remote employees, telecommuters, and mobile employees such as sales representatives. Certainly, a centralized desktop virtualization delivery model such as VDI would make it easier for IT to complete routine maintenance on the machine of a worker who rarely, if ever, comes into the office, but addressing the knowledge worker is where IT can make significant strides. When IT can match desktop delivery solutions to the computing demands of the knowledge worker, IT opens the door to truly changing the way businesses deliver, maintain, and improve the desktop experience.

**Changes in Desktop Delivery Landscape**

What is the impetus for organizations to change their desktop and application delivery strategies? As seen in Figure 2, half of the ESG research respondents cited IT cost reduction initiatives, which is consistent with the fact that expenses—both operational and capital—are a top PC challenge for many organizations. The consumerization of IT and BYOD movements are evident in the other most commonly cited factors driving alternative desktop and application delivery strategies, including an increase in the number of mobile or remote end-users requiring application access from a variety of platforms (48%) or simply end-user demand for different endpoint device support (44%).

*Figure 2. Top Five Changes in the Desktop and Application Delivery Landscape*

**Which of the following factors would you say are most responsible for the change in your desktop and application delivery strategy? (Percent of respondents, N=244, multiple responses accepted)**
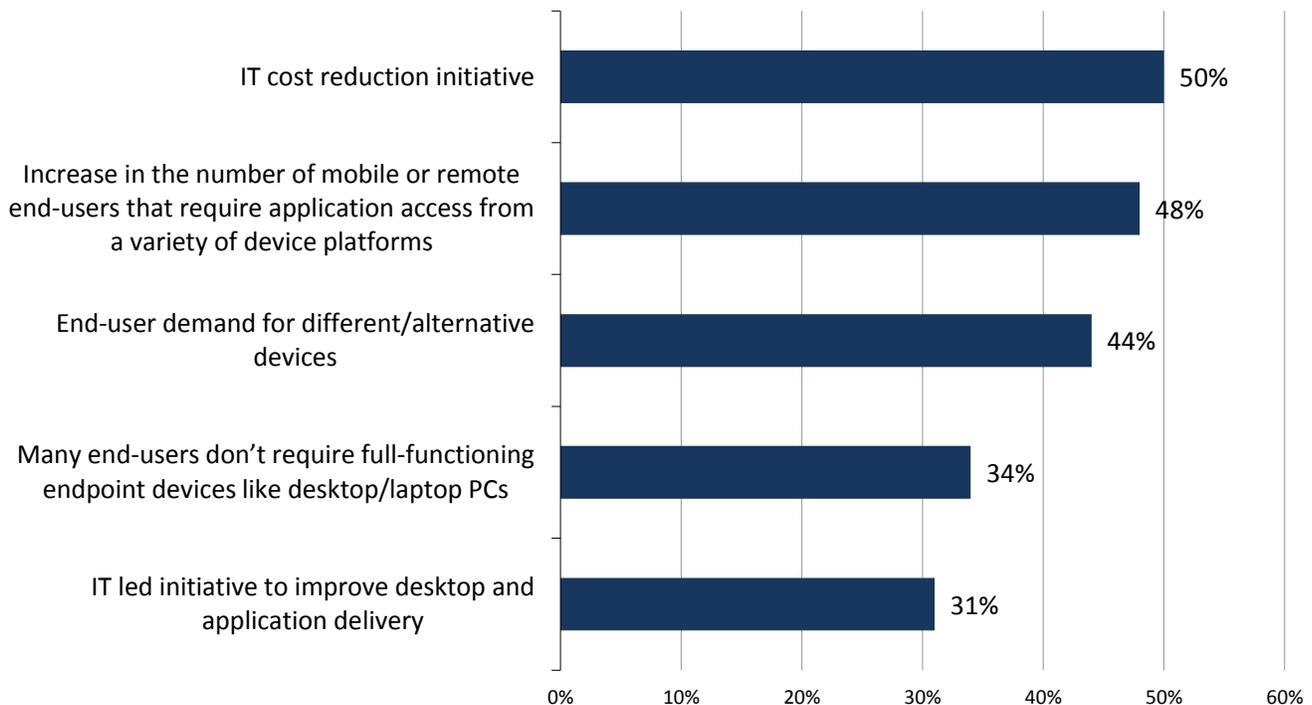


*Source: Enterprise Strategy Group, 2013.*

As IT organizations recognize, research, and invest in desktop transformation strategies, they must consider numerous factors, but perhaps the most significant hurdle to overcome is the unknown or perceived cost and complexity associated with the required infrastructure. IT isn't willing to take a large risk when it comes to potentially impacting hundreds and thousands of end-users' experiences and productivity. IT also has to match the delivery model to the end-user's role and responsibilities. While one delivery model may be an ideal match for one segment of the end-user population, it likely will not be well suited for employees who have different requirements.

For example, session-based desktops have proven to work well for task workers who have a limited set of applications to work with and minimal personalization. At the opposite end of the spectrum, delivery models that dedicate a desktop to a user who requires a true PC-like experience with graphics acceleration at the endpoint are suited for employees who require intense graphic modeling and video. The gap tends to be the knowledge worker who could benefit from improved application and desktop delivery, for whom IT hasn't been able to make a perfect match with VDI implementations. Knowledge workers are ripe candidates for alternative desktop delivery models that improve end-user experience while capturing new control points for IT. Knowledge workers can have some of the most demanding requirements on IT, resulting in a disproportionate amount of time configuring and supporting these users. IT has an opportunity to make significant strides with solutions available in the market today that result in improved operational efficiencies for IT and enhanced computing experiences for the knowledge workers.

### Rightsized for Knowledge Workers

Knowledge workers interact with multiple business and productivity applications. Some types of knowledge workers have basic application usage requirements, but others place heavier demands, usually related to multimedia or graphics, on the underlying hardware. This is true whether the desktop is local or hosted. The potential difficulty with centralizing desktop delivery for these users is the unpredictability of the environment and the fear that centralizing the desktop will negatively impact performance and impede employee productivity.

Some IT shops have been able to get around this predicament by making very significant investments in the hardware platform to support knowledge workers, but that is no longer a sustainable and scalable model. The HP Moonshot system powering the HP ConvergedSystem 100 changes this dynamic, avoids the pitfalls many IT organizations bump into with standard VDI implementations, and allows IT to roll out desktops with confidence that the platform can dedicate resources and deliver the user experience they are expecting.

## Support for Multiple Delivery Models with Citrix and HP

Citrix and HP both provide a wide range of solutions for a variety of user types and use cases. Each delivery model has its strengths, but it is IT's ability to manage applications, entire desktops, and personalization settings from a common delivery platform that is proving to have long-term viability across a broad range of user types and devices. Citrix XenDesktop and XenApp manage and deploy desktops and applications to a variety of devices from a variety of locations utilizing Citrix FlexCast services. The ability to deliver an entire desktop or a single application to an extensive portion of the employee population arms IT with a control point to help manage, deploy, and secure the end-users' computing environments.

Each delivery model requires IT or organizations to make a decision about their associated infrastructure platforms. Cost, complexity, and simplicity of implementation always factor into the decision criteria. As previously mentioned, the desktop delivery model spectrum has viable use cases that either require high-end graphic capabilities or, at the other end, session-based desktops or application virtualization. The large band in between these two delivery models that requires hosted desktops and independent hardware resources for contention-free, reliable, PC performance is where the HP ConvergedSystem 100 for Hosted Desktops fills the gap by providing dedicated hardware for a consistent and reliable end-user experience.

## HP ConvergedSystem 100 for Hosted Desktops

The HP ConvergedSystem 100 is a complete chassis supporting 180 end-users with bare-metal remote PCs in a single, orderable SKU consisting of the following:

- **Compute, storage, and networking in a single Moonshot chassis**. This system includes integrated system-on-a-chip (SOC) with CPU and GPU that consists of a 100% hardware-driven PC graphics processor per node, 40 GbE network uplinks per chassis, and 32 GB solid-state storage per user.

- **Desktop delivery broker provided by Citrix XenDesktop**. End-users are validated with Citrix XenDesktop to enable delivery across a variety of endpoint devices. Shared Windows desktop images are streamed with Citrix XenDesktop to deliver images that require no additional external storage or virtualization layer.

- **Predictable sizing via dedicated hardware resources per user.** Precise sizing of remote desktop environments enables IT organizations to predetermine cost, scaling, and performance.

A resistance to centrally delivering desktops has always been centered on end-user experience. The HP ConvergedSystem 100 delivers a full-powered desktop with PC-on-a-chip and an independent compute and graphics processing unit (GPU) for each user, enabling IT to quickly size, deploy, and confidently deliver a full-powered PC desktop experience to each user. This results in a reliable and consistent experience for employees without an increase in application lag. Furthermore, it enables IT to target knowledge workers who often have a richer set of applications.

HP Moonshot systems are designed and tailored for specific workloads to deliver optimum performance. The low power servers share management, power, cooling, networking, and storage and are aptly suited for a remote desktop environment. The Moonshot systems are extremely compact and allow a dense collection of desktops with minimal data center footprint.

Since the HP ConvergedSystem 100 is available at a fixed size and without the complexity associated with many desktop delivery infrastructure platforms, IT organizations can quickly plan for capacity requirements and match them to the HP ConvergedSystem 100. Lengthy, time-consuming, and costly assessments can be streamlined, resulting in improved time to value with minimal operational impact to IT. HP has eliminated the complexity of the SAN, hypervisor, and out-of-the-box experience for its customers. In doing so, businesses can quickly turn on the value of secure access to desktops without the hassle and complexity often associated with IT projects.

While ESG Lab has not performed any hands on testing of the HP ConvergedSystem 100, the fact that it eliminates the potentially costly server virtualization hypervisor and storage system leads to some very compelling economic benefits. It also removes additional implementation complexity, ongoing management tasks, and perhaps most importantly, IT organizational barriers. Alternative platforms can involve fairly complex architectural decisions, resulting in long roll-out periods and a new footprint inside the data center that was not anticipated by IT operations.

# The Bigger Truth

Centrally delivering desktops is a multi-phase process that can be implemented with a variety of delivery models. Citrix's strength across its solutions combined with HP's infrastructure platforms is helping IT organizations match the optimal delivery model with a hardware platform that is tuned for desktop delivery. The simplified approach to desktop delivery, infrastructure sizing, implementation, and management enables businesses to respond with confidence to desktop delivery initiatives.

Some businesses have made initial strides toward improving desktop delivery to knowledge workers, but that process has come at a cost or proven unsuccessful at the proof of concept stage. Citrix XenDesktop and the HP ConvergedSystem 100 are poised to alter this experience and deliver immediate results to the pool of knowledge workers in the workforce. This solution is architected for simplicity by removing technologies such as hypervisors and SANs that complicate many virtualized desktop environments.

Power, performance, and predictability are core characteristics of the HP Moonshot architecture and this solution from Citrix and HP. The HP ConvergedSystem 100 is designed to fill an infrastructure and delivery gap that exists in the market today with a favorable economic model. The HP ConvergedSystem 100's dedicated performance delivers end-users an optimized experience in a system that provides a streamlined time to value for the businesses that are changing the way desktops are distributed and managed in their environments.