



Expert Strategies for Virtual Desktop Infrastructure Planning and Deployment

Implementing a virtual desktop infrastructure is no simple task. This expert E-Guide, brought to you by SearchVirtualDesktop.com and Mainline, highlights the top factors to consider when planning and deploying virtual desktops. Discover how virtualization of your desktop infrastructure can reduce support costs while improving data and application security. Explore a comprehensive checklist which details some of the environments in which desktop and application virtualization can cause challenges for IT pros.

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Four good reasons to deploy virtual desktops now

Michael Keen, Contributor

Virtualization has its limits, but its benefits are a driving factor and the technology is rapidly catching up with the user scenarios playing out today. Developing a virtual desktop environment isn't an easy feat, but there are many reasons why it's worth the effort. The top four reasons to invest in virtual desktops now are the desktop support cost reduction possibilities, application and data security improvements, software licensing management options and system stability and reliability.

Reduction of desktop support costs

The provisioning of PCs is much simpler in a virtualized environment. With traditional desktops, administrators must test applications against multiple desktop configurations. With virtual desktops, IT can test applications against only one environment prior to deployment and still eliminate most follow-up support issues.

There are high cost and resource demands that come with managing a wide variety of client form factors, multiple generations of operating systems and hundreds of applications. I've even seen some well-managed PC environments require constant maintenance and support to repair problems and retain compliance with corporate policy. Desktop virtualization will allow for large, global companies with thousands of PCs to better manage their desktops because of the reduced dependence on specific hardware and operating system configurations.

Application and data security improvements

The traditional PC environment must be patched and updated consistently. There is a need to mitigate viruses and worms and cut the exposure of critical data and applications to malicious behavior from internal and external sources. Security risks increase as more mobile devices enter the workforce. End-users reach the Internet through public and unsecured home Wi-Fi networks. Thousands of laptops are stolen every year, which put confidential corporate data at risk.

Because virtualized environments give us in IT greater control over system and application provisioning and access, it is easier to secure access rights, and in many cases, data. Desktop virtualization helps by making it easier to decouple applications from data, which also makes it easier to de-provision access to applications.

Software licensing management

How many applications in the enterprise do you run today that you have no way of tracking? If you deliver all corporate applications through a virtualized environment, it is easier to track software usage and licenses.

System stability and reliability

Virtual environments can help prevent application conflicts and they are easier to repair when there are problems. There are ways to sandbox applications and prevent these conflicts, such as application streaming from Citrix Systems Inc., App-V from Microsoft and ThinApp from VMware. Plus, you can quickly and easily restore a PC to a working state with a simple reboot, thereby reducing the costs associated with reimaging and redeploying that hardware asset.



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Mainline pulls together servers, storage, virtualization software, and thin clients to create a customized virtual desktop solution that not only eases implementation, but also reduces:

- Total cost of ownership by up to 35%
- Setup and deployment time by 50%
- Power consumption by up to 90%
- And, data loss by 100%!

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Checklist: Key factors in planning a virtual desktop infrastructure

Anne Skamarock, director of research, FOCUS

You have heard many people, including me, promote virtual desktop and application virtualization implementations for good reasons: Virtual desktop and application virtualization can increase desktop security, reduce desktop and application management responsibilities and reduce calls to your service desk. However, like all smart shoppers, buyers must be aware of what they are getting into. This checklist explains some of the possible environments where desktop and application virtualization may pose some challenges.

● **Delivery options**

Today, desktop virtualization and application virtualization give IT a broad range of delivery options. For instance, hosted desktops and applications using Microsoft Terminal Services or Citrix XenApp can be the delivery method. Other options include application virtualization (known as isolation or sandboxing) and application streaming with products like Citrix XenApp, Microsoft App-V, Symantec Altiris SVS or VMware ThinApp and virtual desktop delivery using a virtual desktop infrastructure (VDI) with Citrix XenDesktop or VMware VDI. They all provide IT and end users with a range of performance and flexibility options. For example, using hosted application virtualization with XenApp has the greatest consolidation ratio for delivering applications and desktops to users, but of all the options, it has the most limited performance capabilities.

● **Costs**

VDI's greater user flexibility and performance comes at a higher cost for servers and storage in the data center. Picking the right technology for the user requirements is essential to success both with the end user and in the data center. Most likely, IT will use a combination of all these technologies in order to have a balanced desktop and application delivery capability while also meeting capex and opex requirements.

● **Power and cooling**

In bringing these technologies into the data center, IT may have some unexpected results if the transition is not carefully planned.

The first and most obvious result of moving the desktop computing and storage infrastructure into the data center using VMware's VDI or Citrix XenDesktop is that it adds more servers and storage to the data center. On one hand, this move better secures both the desktop compute and data resources. On the other hand, it requires more power, cooling and space -- often a commodity in data centers -- for the virtual desktop hosts.

Even when desktop application distribution using streaming and virtualization technologies is based in the data center, servers to build and stream the applications and accompanying storage to hold the images being streamed will require additional power, cooling and space. When a data center is struggling to keep up with the business server demands for these three commodities, be sure to take a very close look at the total costs versus the benefits of moving desktops into the data center.

● Network load

The network is another area that these technologies will put additional strain on. Often, it's assumed that because networks have become so stable, this additional load should not cause problems. Well, tell that to the network admin who just spent the night working on a switch failure. Yes, networks have become significantly more stable over the past 20 years; however, these technologies rely heavily on the network and may take down a poorly designed or already stressed network.

● Organizational structure

Organizational issues are another possible side effect of moving desktops into the data center that should be considered and addressed up-front. Typically, in larger companies, the organization responsible for the data center, the organization responsible for the network and the organization responsible for the desktops are different and often have different work styles and expectations that may clash. To avoid issues, companies have been successful in creating cross-functional teams to work through both the technical and organizational challenges prior to the move so that everyone is on the same page from the start.

● User and application mismatch

Additionally, there are both users and applications that don't fit with the virtual desktop scenario, at least not with the technology as it stands today. One example of an application mismatch is CAD/CAE and other design and engineering applications with very stringent graphics requirements. In this case, IT can use PC or Workstation Blades with either hardware or software-based graphics acceleration, such as Teradici Corp.'s PC-over-IP hardware-based solution or Hewlett-Packard Co.'s RGS (Remote Graphics Software) software-based solution. This allows IT to centralize the compute engine and storage in the data center while providing the user and applications with the graphics performance needed to do the job.

A common user mismatch, with IT centrally controlling desktops and applications, is in a development lab where the engineers must have complete control of the desktop environment for development and test purposes. That is not to say desktop virtualization wouldn't be appropriate in this case. In fact, desktop and/or application virtualization technologies can significantly reduce the time it takes to reprovision a specific environment and is often used in dev/test for that reason. The difference is that the engineers would control the environment, not centralized IT.

For most virtual desktops and/or applications, the good news about the user/application mismatch is that all the lead vendors and many new vendors are continually working on ways to reduce the barriers to having nearly all desktops centrally located in the data center. Examples of this include Microsoft's addition of Virtual Channel Extensions to RDP 6.0, which enables local device connections for remote compute sessions, either hosted or virtual. Another is Citrix SpeedScreen, which improves remote ICA users' graphics and video experience.

However, businesses -- and specifically IT -- will continue to wrestle with network, power, cooling and space challenges associated with placing more servers into the data center, whether they are running server applications or virtual desktops.

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