Maximizing flexibility and productivity for mobile laptop users

Deliver Windows virtual desktops on-the-go for corporate and BYO laptops
The popularity of Apple products among consumers, along with their increased usage on corporate networks, is helping drive the need to support bring your own (BYO) devices within work environments. In addition to allowing employees to choose their own personal devices to access business-critical applications and files, BYO initiatives with the right management capabilities can also offer many benefits to enterprises, including improved employee morale and productivity, as well as reduced IT costs.

With many executives, field employees and contractors preferring the convenience of using just one device for both corporate and personal apps, enterprises can keep these groups happy and productive by providing them with a BYO environment. However, developing the infrastructure for BYO is a big challenge for IT. Moreover, given that some corporate apps only run within a Windows environment, IT must find a way to efficiently deliver Windows apps on MacBook laptops while ensuring corporate assets remain protected.

This white paper examines the benefits and challenges of creating a BYO environment and why many enterprises address the issues by deploying local Windows virtual desktops to mobile laptop users. The paper also explores key considerations for deploying corporate Windows virtual desktops to BYO laptops and how Citrix solutions help address the challenges while maintaining the benefits.

The growth of BYO popularity
At many enterprises, the adoption of a BYO environment is driven by executives, senior managers and IT professionals. Given that business and personal activities now overlap during and after business hours, executives and senior managers want to engage in both from a single laptop. They do not want to substitute clunky, corporate-issued laptops for their newest and slickest personal laptops when they need to access business apps and data.

The BYO trend is further aided by the popularity of MacBooks, known for their advanced hardware and Mac operating system. Many enterprises allow at least some of their employees to use personal MacBooks for accessing and interacting with corporate applications and data.

A BYO program enables organizations to give users a computing experience they enjoy—without interfering with their personal apps. Many organizations looking to implement BYO programs are turning to virtualization solutions because they allow IT to deliver a centrally hosted, secure virtual desktop to BYO users on and off the corporate network. Such a BYO environment not only addresses the preferences of executives, senior managers, IT pros and others such as sales and field service personnel, but it also generates the following benefits for the enterprise:
Lower hardware cost: By giving employees the option of using their personal laptops for business purposes, enterprises reduce capital expenditures (CapEx) since fewer devices need to be purchased and refreshed.

Lower operational cost: With virtualization, IT administrators achieve significant operational expenditure (OpEx) savings through central management. What used to take hours and days to provision and configure a laptop now only takes a few mouse clicks. Maintaining and updating application and desktop deployments can be done from a single management console instead of physically visiting each machine.

Improved productivity: Employees can now use their corporate applications wherever they are—including on the road without a reliable network connection. Using familiar hardware also enhances employee productivity. Moreover, with a centrally managed corporate virtual desktop, employees who need help with particular corporate applications can quickly get it because the support team does not have to try to decipher how their laptops are set up—instead they are providing support for the standardized Windows virtual desktop and the approved business apps that have been provisioned.

Improved employee morale: The freedom to use their own laptops for work tasks gives employees more control over their computing environment and acknowledges that business life and personal life both may need attention on a 24/7 basis. In addition to keeping current employees happy, a BYO program serves as an effective recruitment and retention tool to attract the best and brightest professionals and younger recruits entering the workforce.

The next key consideration: creating an environment that keeps business data and apps secure and that IT can manage and adapt to in a simple, controlled manner.

Developing an infrastructure to accommodate BYO

Businesses that embrace BYO must deal with many different new devices on their networks that need some level of management. Administrators in large organizations might find themselves supporting thousands of endpoints and losing control as the number of devices on the network grows rapidly.

Virtualizing the desktop environment makes it much easier for IT to manage and maintain control over laptops from different manufacturers with different operating systems.

One way to virtualize the desktop environment is a hosted virtual desktop infrastructure (VDI), which combines storage and server hardware with a hypervisor to deliver individual desktop instances from a datacenter. VDI enables fast and easy access from anywhere, on any device.

Virtual desktops can also be rolled out more quickly on a network than native desktops that rely upon traditional deployment methods and PC management tools. Using VDI solutions, such as XenDesktop, administrators can automate the way virtual desktops are created and delivered rather than deploying a unique image for each new device.
In addition, virtual desktops require less time and effort to support, as IT can control the desktop environment centrally. Administrators only need to apply patches or upgrades once for every desktop, and application data is protected and backed up in the datacenter. Thus, if a device is lost or stolen, data is not put at risk.

Local virtual desktops extend the benefits of VDI
To extend the benefits of a hosted virtual desktop, many enterprises have discovered the value of deploying a local virtual desktop solution, which runs the virtualized OS and apps directly on endpoints. This approach allows laptop users to continue accessing the applications and data they need for work, regardless of network connection quality—just like native PCs. This is a critical capability, since mobile users inevitably experience slow or intermittent network conditions or sometimes lose access completely while working from trade shows, hotels or airplanes.

Local virtual desktops also work well in conjunction with VDI to provide a big boost to employee productivity. For example, people who do not desire to bring their laptops home from the office can leave a hosted virtual desktop session running and then access the session from their home computer, tablet or smartphone. Thus, business executives as well as sales professionals, field technicians and other mobile workers who spend a great deal of time on the road can all benefit from laptops enabled for both local and hosted virtual desktops. The switch between these environments is seamless.

Local virtual desktops also offer a better way for IT to manage mobile corporate laptops. The ability to centrally administer the laptop across the full management lifecycle—including provisioning, patching, image management, migration and device wipe—eliminates the multiple tools traditional PC management requires. For BYO laptops, IT can centrally manage the corporate virtual desktop running on the device without interfering with the employee’s personal environment.

Providing Windows virtual desktops to BYO laptops
When rolling out a BYO program, enterprises should take into consideration the needs of three groups:

- **IT administrators** need to easily manage and support personal laptops that employees connect to the corporate network. IT also needs to be able to assign virtual desktops to contractors or contingent staff for a specific period of time, and remotely wipe these virtual desktops at the end of a project. In addition to controlling the virtual desktop environment, IT is looking to provide a higher level of security by running applications inside a virtual machine.
- **Users** including employees and contractors want the convenience of using both their personal apps and business apps on one laptop. They are willing to use their personal device to conduct company business, but just as IT needs to protect the corporate environment, users want to isolate their personal environment. They also need to be able to access their corporate Windows desktop and apps easily, regardless of network connectivity.
- **Managers** giving BYO privileges to executives, senior managers and other highly mobile employees such as sales and field service representatives want to ensure the organization can gain the full benefits of the BYO program. Top benefits are lower TCO for mobile devices, increased employee productivity and improved morale. They are looking for solutions that offer user flexibility while maintaining security and IT control.
There is an added challenge in supporting MacBooks in a BYO environment. Some corporate apps, such as Visio, Microsoft Project and Internet Explorer, can only be accessed within the Windows desktop. Even when applications such as the Microsoft Office suite are customized to run on Mac OS X, the experience is often not as productive or as seamless as it is within a Windows environment due to the lack of certain plug-ins or updates that are available only on the Windows platform.

To deliver Windows virtual desktops on MacBooks, many enterprises deploy a Type-2 hypervisor running on top of the Mac OS rather than a Type-1. Type-1 hypervisors install under the OS on bare metal and require reimaging the machines—something most users will not want to do to their personal devices.

**DesktopPlayer for Windows and Mac**

DesktopPlayer allows users to run Windows virtual desktops on their Windows and MacBook laptops. The Citrix solution leverages client virtualization technology that is installed on top of the Windows and Mac OS, which is ideal for BYO programs since it does not infringe upon personal apps or alter the device in any way.

DesktopPlayer addresses the BYO challenge of securely delivering Windows apps and data to employees and contractors using laptops as their primary computing device. Users gain the flexibility and convenience to run the Windows virtual desktops they need for work and personal apps on the same device—whether working online or offline, or when experiencing slow or intermittent network connections.

While competitive solutions only enable laptop users to run Windows locally, DesktopPlayer gives IT fully centralized management and control while providing security for both data and virtual desktops. The Synchronizer management server provisions and manages Windows virtual machines with policies deployed to each virtual desktop on the endpoints. This feature sets DesktopPlayer apart from standalone, consumer-based client virtualization software products. These standalone utilities allow virtual machines to be created on top of the end devices but lack integrated, centralized provisioning, control and policy management capabilities.

With the Synchronizer, the base image of the Windows virtual desktop is guaranteed to be consistent, significantly increasing patch and update success rates over traditional agent-based PC management tools. Moreover, with the Synchronizer, updates are done at the hypervisor layer, so even if there is a problem in the guest virtual machine that corrupts the Windows OS—rendering traditional PCLM tools ineffective—the Synchronizer can still successfully update the base image.

DesktopPlayer also enables IT to test and manage a Windows virtual desktop golden image and then push it out to any number of end devices. DesktopPlayer is part of the broad Citrix desktop virtualization solution portfolio, whose versatility enables enterprises to address diverse use cases.
DesktopPlayer benefits for users
• Work on local Windows virtual desktops regardless of network connection quality or even while not connected
• Use personal or corporate-issued laptops for accessing and interacting with Windows applications and data while keeping personal apps and data separate and secure on the same device
• Synchronize data across local and hosted virtual desktops for a seamless, personalized experience when combined with XenDesktop and ShareFile
• Eliminate reboots when switching between Windows/Mac or business/personal workspaces
• Continue accessing personal apps installed on their own devices without interference.

DesktopPlayer benefits for IT
• Deliver a managed and secured corporate virtual desktop with policy-driven control to Windows and Mac laptops
• Protect corporate data with virtual desktop lease, lockout and remote kill policies activated from the management console in case of loss or theft, or when an employee leaves the company or a contractor completes a term assignment
• Create a golden image of a Windows virtual desktop that can be pushed to any number of laptops, eliminating the need to physically visit machines for support, updates and patches
• Efficiently deploy the same Windows virtual desktop image to BYO and corporate-owned Windows laptops and MacBooks with a single interface, using the same virtual desktop image library

The role of DesktopPlayer with XenDesktop
XenDesktop with FlexCast technology adjusts to the needs of each business unit or user group by enabling IT to deliver Windows as a service with a single infrastructure for a variety of use cases. From simple VDI to advanced app delivery, XenDesktop with FlexCast makes it easy to start with a few virtualization use cases and expand to others at a pace that makes sense for enterprises.

XenDesktop is the perfect solution for users with access to the corporate network. But if network access is limited or unavailable, the Windows apps and data they need are not accessible. As an add-on solution, DesktopPlayer delivers a secure Windows virtual desktop to mobile laptop users for working online, offline or over slow or intermittent connections.

Add-on DesktopPlayer with XenDesktop—A complete BYO solution
Today’s business demands an IT infrastructure that can support the fast-changing app, desktop, and data access needs of increasingly mobile workers while ensuring control and data security.

DesktopPlayer along with XenDesktop is the only complete virtualization solution that centralizes the management of apps and desktops securely in the datacenter while also delivering them to users on demand, to any device, anywhere, regardless of network conditions.

For more information on how DesktopPlayer can enhance and expand your organization’s BYO program, visit www.citrix.com/desktopplayer.
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