



Doing More With Less: The Next- Generation Virtual Desktop

Sponsored by IBM

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DOING MORE WITH LESS: THE NEXT-GENERATION VIRTUAL DESKTOP

What types of productivity and efficiency gains could your business achieve if employees had the same secure access to and user experience with files and applications from a desktop, laptop, smartphone or tablet? Now think about the cost and time savings that your business could gain if IT could automatically upgrade all users to a new version of the operating system or application software just by having each user reboot?

The need to provide users with more flexible, secure and productive ways to work has sparked keen interest in desktop virtualization, particularly in industries that are under regulatory pressure to safeguard confidential data, and in companies that have a high proportion of mobile and remote workers. In theory, with centrally managed virtual desktops, IT can provide employees with secure, anytime, anywhere, any device access to business applications and files.

While cost, complexity and user experience issues associated with traditional virtual desktop infrastructure (VDI) technology have slowed widespread adoption of virtual desktops, next-generation virtual desktop solutions, such as IBM's Virtual Desktop for Smart Business (VDSB) with Virtual Bridges VERDE, show tremendous promise to remove many of these issues to give growing businesses the benefits of desktop virtualization with a lighter weight, more cost-effective approach.

In this paper, we discuss the key obstacles that have prevented many mid-market businesses from deploying virtual desktops. Then, we discuss how next-generation virtual desktops such as VDSB provide companies with a better user experience in an easier-to-deploy, easier-to-manage and more affordable virtual desktop model. We examine how VDSB alleviates many of the technical and cost hurdles that have prevented companies from using virtual desktops in the past, and how customers in different industries can benefit from it.

SECTION 1: TRADITIONAL VIRTUAL DESKTOPS—BENEFITS AND DRAWBACKS

Virtual desktops, desktop virtualization and VDI are hot topics these days—and they basically refer to the same thing. Although their definitions can get more involved and nuanced, the general idea behind them is that a user's desktop environment (applications, files, folders, icons, wallpaper, windows, toolbars, widgets, etc.) is stored remotely on a server, instead of on a local PC or other client device. The server that runs and supports the virtual desktops uses hypervisor software to create a “virtual machine”

that simulates the user's desktop environment and capabilities. Users can connect to the virtual desktop via a wide range of client devices, including PCs, laptops, thin clients, smartphones and tablets.

Virtual desktops can provide organizations with many benefits (summarized in **Figure 1**), including:

- ***Anytime, anywhere, any device access.*** A virtual desktop image goes wherever the user goes, on whatever device he or she chooses. Traveling light with just a smartphone? Your laptop dies while you're on the road? No problem. Desktop virtualization provides access to your entire desktop environment from any device.
- ***Decreased desktop management and support costs.*** Because IT can centrally manage user desktops, administrative burdens and costs are reduced. IT can deploy quick, efficient application upgrades for users via a reboot. Backups are automatic; so if a physical device fails, it can be replaced with a new one to get the user back up and running.
- ***Greater security.*** What kinds of sensitive data are your employees carrying around on their hard drives? With VDI, all data is stored on the server, which limits potential liability if a personal device is lost or stolen and reduces business risk.
- ***Extend the life of older PCs and more easily support new client devices.*** Mobile users increasingly choose smartphones and tablets over laptops, and companies are tiring of the costly, time-intensive fat-client upgrade cycle. VDI can help companies to more easily and cost-effectively manage an expanding array of devices, extend the life of older PCs and laptops, and swap out fat clients for less expensive thin ones.

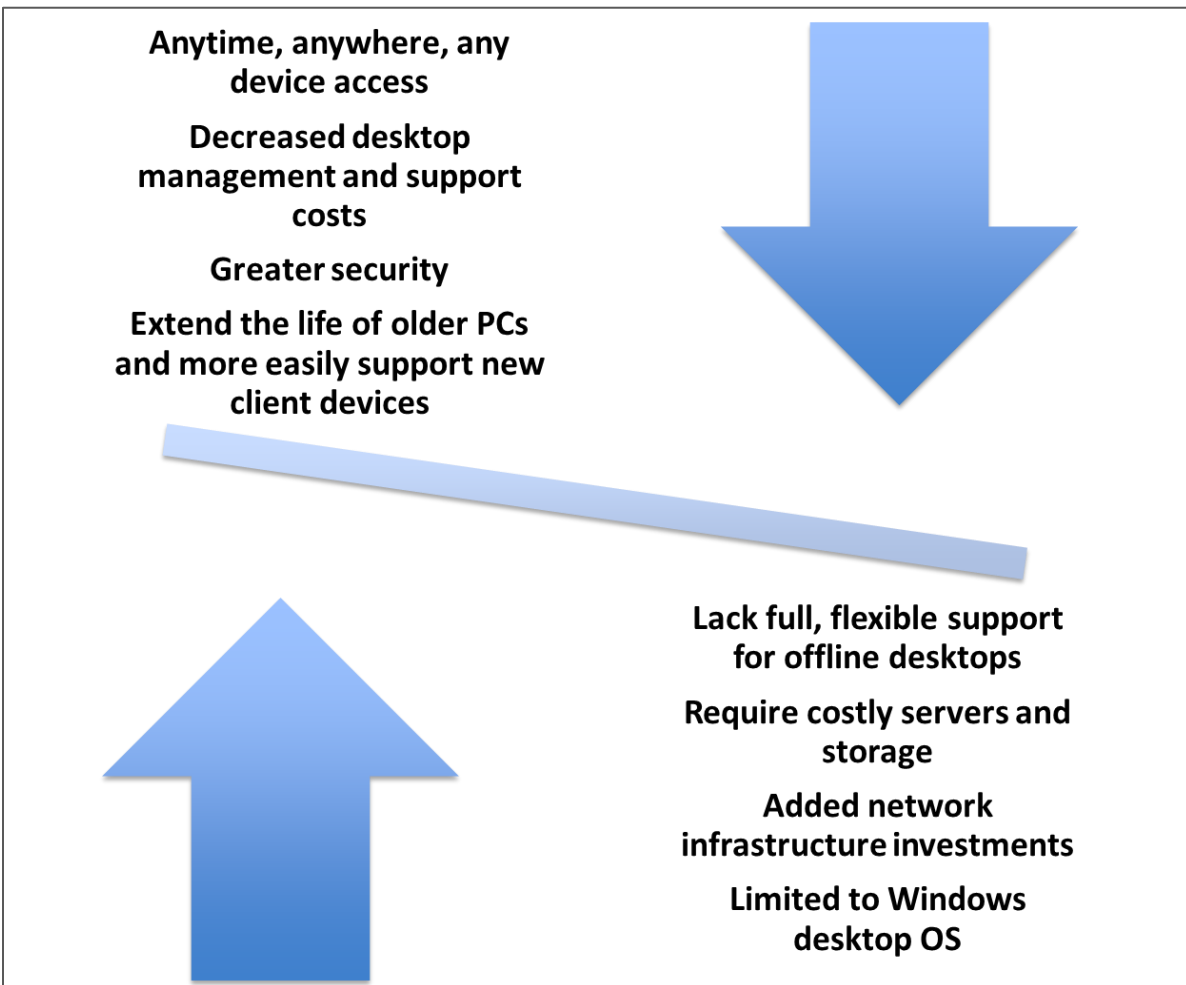
However, several drawbacks have prevented many companies from adopting virtual desktops, including:

- ***Lack of full and flexible support for offline desktops.*** Traditional VDI offerings often lack an integrated client-side hypervisor that efficiently enables local caching on the client device, making offline desktop access cumbersome.
- ***Need for more costly servers and storage.*** Conventional VDI offerings typically support seven to nine users per CPU core and provide 1 to 2 GB of memory per virtual desktop—necessitating several servers for even a modest amount of users. Traditional VDI solutions also tend to require expensive storage area networks

(SANs), high-speed interconnects and a large cache (instead of less costly but slower direct-attached or network-attached storage) for optimal disk performance.

- **Added network infrastructure investments.** To provide the fast, high-volume access and performance that end-users expect for everything from Word documents to image files, network infrastructure often must be upgraded.
- **Limited choice of desktop operating systems.** Many virtual desktop solutions only support Microsoft operating systems, eliminating the potential to provision Linux desktops for “light” users in order to cut down on Microsoft desktop operating system expenses.

Figure 1: Benefits and Drawbacks of Traditional Virtual Desktops



Source: SMB Group

As a result, for many businesses with fewer than several hundred desktops to support, the virtual desktop equation just hasn't added up.

SECTION 2: IBM VIRTUAL DESKTOP FOR SMART BUSINESS—A FRESH APPROACH

IBM Smart Business and Virtual Bridges have teamed up to offer growing businesses a next-generation offering that removes several barriers that have prevented businesses from using desktop virtualization. Designed to tackle the specific requirements of the desktop virtualization environment, IBM Virtual Desktop for Smart Business (VDSB) with VERDE from Virtual Bridges gives businesses the desktop flexibility they need, simply and cost-effectively in an integrated, software appliance model.

With desktop virtualization as the focal point, Virtual Bridges took a clean-slate approach to develop a lightweight, better integrated and more affordable VDI and virtual desktop experience. Coupled with IBM's Solutions for Smart Business platform, VDSB enables rapid deployment and provides self-management and automated backup and recovery capabilities.

VDSB can support more users with a smaller hardware investment than what is required for traditional VDI solutions. Built-in technology dynamically shares and allocates memory, allowing VDSB to support up to 200 users on a single server. Clustering capabilities can further expand support. Storage requirements are also reduced because VDSB can use direct-attached storage and external networked NAS. IBM Smart Business autonomic management and self-healing capabilities are built in. So once VDSB is deployed, it runs with minimal care and feeding. (See *the SMB Group report, [The Next-Generation Virtual Desktop Solution for Growing Businesses](#), for more details about VDSB technology*).

Pricing starts at \$150 USD per year per concurrent user, making VDSB significantly less expensive than most traditional VDI offerings. VDSB is sold via a Fixed Term License (FTL), in which customers license software products on an annual basis, eliminating the need for upfront capital expenditures, and making budgeting more predictable. Because VDSB offers IT the ability to provision both Linux and Windows desktops (customers are still responsible for all Microsoft and other application software licenses), companies can choose Linux desktops for some or all of their users to significantly reduce Microsoft licensing costs.

Top usability advantages for IBM VDSB as compared with traditional, first-generation VDI include easier setup, integrated offline access, a more personalized user desktop experience, more choice and flexibility to create different desktop images, and faster, better problem resolution and management (**Figure 2**).

Figure 2: End-user Usability Advantages

VDSB End-user Advantages	Details
Simple setup	IT or a partner can implement VDSB in as little as a day instead of the weeks or months it can take to implement conventional VDI solutions—dramatically reducing costs.
Integrated offline access	Users can install their desktop image on a high-speed USB key or hard drive, or on their desktop, and synchronize automatically between offline and online environments.
More personalized desktop experience	Users can customize wallpaper, screen savers and other desktop settings.
A choice of Windows and Linux desktops	Users can choose between Windows XP and Windows 7 desktops, or among a variety of Linux desktops (Ubuntu, Red Hat, Novell), providing the opportunity to significantly reduce Microsoft licensing costs.
Different images for different types of users	IT can create multiple “gold images” suited to different types of user needs. For instance, IT can create a base image for power users, and another base image for lightweight users. IT can also clone a base gold image and tweak it with additional images specific to sales, HR and/or other line-of-business users.
Unified management and reporting for fast, intelligent problem resolution	The VDSB administration console provides a centralized place to set up and manage the VDSB network, users and environment. Built-in notifications provide status reports and issue alerts, and intelligent problem determination helps troubleshoot problems and get them resolved more quickly.

Source: SMB Group

SECTION 3: HOW IBM VDSB HELPS BUSINESSES DO MORE WITH LESS

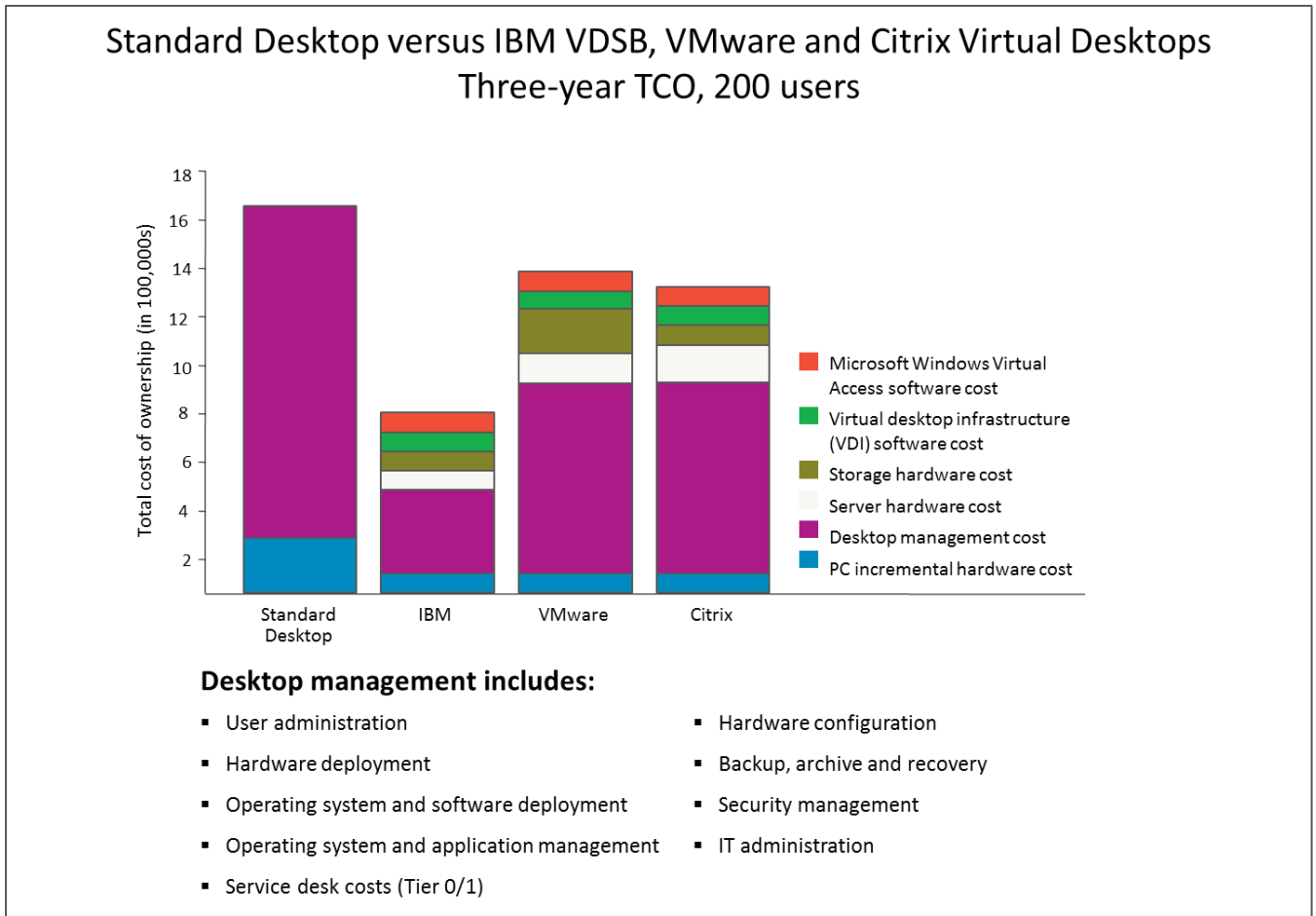
VDSB helps IT reduce desktop capital and management costs, risks and hassles, while providing companies across many industries with the improved access, flexibility and performance they need. Some of the most compelling use scenarios include:

- **Healthcare.** Healthcare organizations face a myriad of IT challenges, from complying with Health Insurance Portability and Accountability Act (HIPAA) regulations to protecting confidential patient data. To work more productively, they need to provide medical staff with fast, high-volume access to MRI, CT and other image files, often on an iPad or other personal devices that healthcare professionals want to use, or via multi-user rolling carts that a hospital or practice provides. Desktop virtualization helps healthcare organizations protect sensitive patient information and maintain compliance standards. VDSB's support for dynamic memory sharing and allocation, and its ability to use direct-attached storage and external networked storage, help make VDI more affordable and practical.
- **Legal/professional services.** Attorneys and professional services firms, such as accountants, architects and IT consultants, need to access sensitive client information and intellectual property whether they're in their offices, client offices, courtrooms, hotel meeting rooms, planes or other locations. With VDSB, users can access their desktops offline and automatically synchronize between offline and online environments. All data is written to the server and stored on the server, drastically reducing the risk of data liability from data loss.
- **Sales.** Most sales operations have many different types of users who prefer different devices. For instance, sales people may prefer iPads for demos and tradeshow; senior execs may spend most of their time on a BlackBerry; and admins may use a traditional PC or thin client. VDSB makes it easier for IT to support users on a wide range of devices and provide less costly Linux desktops to lighter weight users, such as administrative staff. Offline access is readily available for road warriors, and better performance for demos is enabled by VDSB's dynamic memory sharing and allocation capabilities. Sales information is stored securely on the server; so if a device is lost or stolen, risks are minimized.

Across these and other use cases, VDSB can help companies to:

- **Decrease time and costs required to deploy virtual desktops.** The integrated VDSB offering takes many sourcing, resource and complexity issues out of the equation, so customers can get more business value from their IT dollars more quickly.
- **Reduce upfront costs and total cost of ownership (TCO).** Customers license VDSB software on an annual basis, eliminating large upfront capital costs. The flexibility to provision Linux desktops can help reduce Microsoft operating system licensing costs. Because all components are pre-configured in a single, ready-to-run package, desktop management costs are significantly reduced (**Figure 3**) and there's less risk of problems down the road.
- **Improve productivity.** IT staff can reduce the time spent deploying, managing and fixing user desktop issues because everything is centrally managed. Users get anytime, anywhere, any device access, enabling them to work when, where and how they want.
- **Improve security and recovery capabilities.** In the event of local system failure, loss or theft, data can be quickly recovered through the VDI. Fully integrated backup and recovery help protect against unplanned outages from minor incidents to catastrophic failures.
- **Benefit from local sales, support and management expertise backed by IBM.** VDSB is delivered by local, feet-on-the-street IBM Business Partners that supply customers with consulting, networking and software infrastructure skills to ensure a smooth implementation. If desired, partners can also provide ongoing management coupled with IBM's comprehensive, enterprise-class expertise, management and support capabilities.

Figure 3: Three-Year TCO Comparison of Standard Desktop and Virtual Desktops



Source: IBM analysis

Reference: Virtual Desktop for Smart Business TCO/ROI Calculator

SECTION 4: HOW TO GET STARTED

Growing and midsize businesses with any of the following objectives will find it worthwhile to explore desktop virtualization and IBM’s Virtual Desktop for Smart Business offering:

- **Requirement to re-focus IT on growth initiatives.** Corporate priorities shift when companies look for new ways to stimulate growth and improve the customer experience. VDSB can help midsize companies offload non-strategic, block-and-tackle desktop support and maintenance so they can re-focus scarce IT resources on strategic initiatives vital to growth.

- **Need to ease Windows 7 migration.** Many companies struggle to migrate to Windows 7 because of applications (current and legacy) that have not been fully tested on this operating system. With VDSB, users can access both older Windows operating systems and Windows 7, simplifying migration and management.
- **Desire to slow the PC refresh and upgrade cycle.** Companies can extend the life of existing PCs, accelerate desktop OS migrations, and deliver and manage applications and desktops more cost-effectively with VDSB.
- **Demand to improve mobile access and device support.** User demand for mobile device support often outstrips IT's capacity to provide it. VDSB provides a true desktop experience from any device, so users can log in, use applications, create and access files, save documents, send an email or use the internet without creating additional work for IT.
- **Requirements for increased desktop security.** Because data is stored centrally, instead of on user devices, virtual desktops help companies safeguard data and meet mandatory compliance requirements.

Based on the current desktop environment, IBM and its partners use the VDSB TCO Calculator (<http://www.compariv.com/vdsb>) to calculate the resources needed to support the VDSB implementation. Some of the key assessment criteria include:

- Number of total users and number of concurrent users
- Existing desktop operating systems and configuration
- Applications used (collaboration, productivity, business, development, etc.), type of license and operating systems
- Number of mobile devices
- need to be included in this assessment to get an accurate device usage model
- Number of company branch offices, remote users and satellite locations (contractors)
- Migration plans for Windows 7

In addition, IBM Business Partners can help IT managers factor other key architectural considerations, such as security, usage scenarios and remote management requirements, into the planning process. Using this information, partners can calculate resource requirements and costs, and develop a complete architectural plan.

SUMMARY AND SMB GROUP PERSPECTIVE

Many growing and midsize businesses want to get more business value from technology, but they don't have the luxury of abundant IT dollars or headcounts. They need to re-focus limited IT staff and budget on initiatives that support revenue growth and improve the customer experience. Innovative offerings, such as IBM Virtual Desktop for Smart Business, can help both control IT costs and reallocate IT staff to projects that help fuel business growth.

By using Virtual Bridges and its desktop-centric VERDE virtualization technology, VDSB avoids many of the problems associated with first-generation solutions, giving businesses the simplicity, flexibility and pricing they need to make desktop virtualization practical. End-users gain the benefits of integrated offline access and a more flexible, personalized desktop experience. By building VDSB on IBM's Solutions for Smart Business platform, customers get the added advantages of streamlined sourcing and deployment, self-management and automated backup and recovery, and affordable and predictable pricing.

While many companies may have written off VDI solutions in the past due to limitations of traditional, first-generation offerings, IBM VDSB's next-generation offering warrants a fresh look.

For more information about IBM VDSB, visit:

<http://www.ibm.com/smarterplanet/us/en/smartbusiness/virtualdesktop/index.html>



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