



Accelerating desktop virtualization gains

By Rafael Colorado and Reed Martin

Converging trends toward consumerization, thin-client deployment, enhanced security requirements, and wide adoption of cloud-based services are driving increased interest in desktop virtualization.

Organizations today encompass a diverse range of end users, from mobile and remote employees using laptops and smart devices to task workers performing routine, relatively predictable processes. Implementing a single approach to desktop virtualization may be an unrealistic goal for meeting the different requirements of these end users. Now, IT organizations have the opportunity to deliver the right desktops and applications for each end user, while addressing IT priorities such as cost, security, and ease of management.

As the technology matures, some organizations have maintained a wait-and-see approach because of perceptions that the technology is complex and lingering concerns about data security, deployment performance, cost, and complexity. At the same time, many IT decision makers are accelerating adoption of desktop virtualization as the technology reaches an inflection point based on migration of consumer devices into enterprise environments, increased deployment of thin clients, server virtualization, and cloud computing.

To facilitate the decision making with deployments that were more predictable than was previously possible, a powerful portfolio of desktop virtualization offerings is available from the Dell Desktop Virtualization Solutions (DVS) Group. These offerings are available in two primary variants—Simplified and Enterprise. They target infrastructures of varying scope, from the fast-and-easy, deploy-and-manage characteristics of the DVS Simplified solution to the increasingly robust and demanding environments well served by the DVS Enterprise solution.



In addition, the Simplified and Enterprise models offer on-premises as well as hosted delivery to meet specific organizational requirements. Dell provides preconfigured, end-to-end infrastructure by leveraging its expertise in servers, storage, networking, clients, software, and services. And for organizations that prefer to outsource their entire desktop virtualization operation, DVS offers a virtual desktop-as-a-service (DaaS) platform founded on the Dell-provided powerful data center network and Dell investments in the cloud.

Centralizing device deployment and management

After achieving widespread success in server deployments, IT organizations are now expanding virtualization to the end-user computing environment. Desktop virtualization enhances anywhere, anytime access to resources for executives, employees, and contract workers as well as students, health care professionals, and other segments. Given the growing influence of consumers, IT organizations must balance end-user needs with their own control and efficiency requirements as they manage a range of client desktops, laptops, and handheld devices.

A virtual desktop infrastructure (VDI) is one of many desktop virtualization options. It enables enterprises to cost-effectively centralize desktop and mobile device deployment and management. VDI is a form of desktop virtualization in which the desktop OS is hosted within a virtual machine running on a server in a data center. A VDI strategy helps improve security and regulatory compliance, increase IT flexibility and business agility, and strengthen business continuity and disaster recovery.

Adoption drivers for desktop virtualization can be categorized into four groups (see Figure 1). The Dell DVS Group—composed of virtualization experts who can perform in-depth assessments of desktop environments—offers

	Objectives	Virtualized desktop benefits during a 12-month period*
Enhanced end-user productivity	<ul style="list-style-type: none"> • Enable the mobile workforce • Accelerate availability of applications and performance • Enhance service-desk support 	23.4 percent reduction in desktop downtime
Improved security	<ul style="list-style-type: none"> • Help ensure regulatory compliance • Control access to data flow • Provide virus protection • Help secure data records 	76.7 percent reduction in average time to recover from data loss
Efficient data center management	<ul style="list-style-type: none"> • Enable OS migration, patching, and deployment • Help reduce downtime • Offer easy data backup 	20.0 percent reduction in time for routine maintenance
Augmented cost control	<ul style="list-style-type: none"> • Extend desktop refresh cycles • Provide desktop support cost • Offer desktop scalability 	11.7 percent reduction in desktop support spending

* Source: "Analyst insight: Measuring the returns from a desktop virtualization program," Aberdeen Group, Inc., September 2011.

Figure 1. Desktop virtualization adoption drivers and associated benefits compared to nonvirtualized desktops

an approach that is aligned with these emerging demands. Successful deployments start with evaluating desktop usage in the organization and identifying target end users who may benefit immediately from desktop virtualization.

Understanding adoption indicators for desktop virtualization

Although the concept is not new, the following four converging indicators have quickened the pace of VDI adoption: progression of desktop virtualization technology, consumerization, acceleration of thin-client deployment, and wide adoption of server virtualization and cloud services. According to IDC, the total number of virtual desktop seats shipped is estimated to grow from 11 million in 2010 to 37 million by 2014, which represents 7 percent of all enterprise-installed PCs¹—meaning traditional PCs should continue to make up the majority of the enterprise client world for a long time. Although these growth projections are a good indicator of intensifying desktop virtualization penetration, a series of industry developments points to the 2012 time frame as a possible inflection point for VDI adoption.



Consumerization in the enterprise

As consumer devices flood into the workplace, organizations require flexible IT environments designed to enhance end-user productivity. This video explores how IT decision makers can design and implement VDI deployments tailored to meet specific end-user needs.

qrs.ly/mq1tjdk

¹ "Market analysis perspective: Worldwide enterprise virtualization software – client virtualization," by IDC, Doc #227494, March 2011.



Indicator 1: Progression of desktop virtualization technology

A prominent indicator of accelerated VDI adoption is the degree to which new technologies attract innovation and capital. This metric is increasingly valid during periods in which the economy is stressed and investors are less risk-tolerant than in better economic times.

Pillars of expertise can be used to classify and filter these investments. The following pillars are defined as key factors IT managers need to consider when deploying desktop virtualization. Pillars of expertise define industry sectors with high influence on the growth of VDI because of their emphasis on areas critical to the end-user experience, cost, or efficiency:

- **Delivery systems:** Innovation that facilitates the hosting and delivery of virtual desktops, applications, and data including DaaS and appliances
- **Brokering and session management:** Efficient management and allocation of virtual machines
- **User experience:** Policy and personalization management
- **System monitoring:** End-user and infrastructure performance management
- **Endpoint devices:** Terminals used as part of desktop virtualization approaches
- **VDI management and storage optimization:** Image and storage efficiency management
- **Security features:** Enhanced protection of confidential data in the data center, on the network, and at endpoints
- **Data center infrastructure:** On-premises data center hardware including servers, storage, and networking
- **Services:** Expertise brought to the organization to facilitate sizing, configuration, deployment, and management of the environment

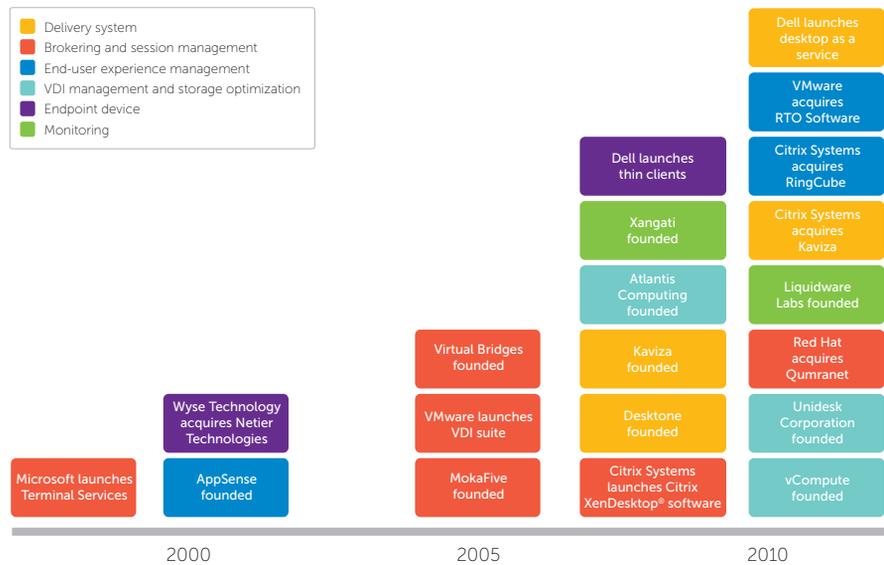


Figure 2. Organizations investing in desktop virtualization between 2000 and 2010

Several organizations that were founded or aligned through acquisitions toward desktop virtualization during a 10-year span are shown in Figure 2. After an early cycle of innovation, acceleration of investment toward the end of the same 10-year span was evident, which supports the increased total available market that typically precedes acceleration in the rate of adopting new technologies.

Indicator 2: Consumerization

As consumerization transforms large sectors of the workforce, the proliferation of advanced smartphones, tablets, and other mobile devices is motivating IT departments to redefine policies that support employee-owned technology in the workplace. Desktop virtualization is expected to both drive and derive benefits from this trend. It enables a secure separation of personal and organizational workloads while allowing the coexistence of personal and work environments on the devices end users prefer (see Figure 3).

To balance the sometimes conflicting goals of end users with the important security, management, and resource constraints of organizations, IT departments are opting to deploy desktop virtualization to enable the productivity benefits of consumerization.² These virtualization approaches require deployments that include hardware, software, and services with predictable cost and performance to help achieve successful deployment.

Indicator 3: Acceleration of thin-client deployment

The growth of thin-client devices can arguably be correlated with the growth of interest in hosted desktop virtualization models such as VDI. Thin clients are not the only device option for hosted desktops; PCs can be used in many virtual desktop deployments. However, as organizations realize the benefits of thin clients—including device management, power consumption, and cost—thin and zero clients are being increasingly

²“Consumerization of IT: An IDC survey,” by IDC, Doc #227925, April 2011.

used in virtual desktop deployments or replacing repurposed PCs as they approach the upgrade cycle. This association highlights the correlation between heightened adoption of thin-client technology and hosted desktop solutions. Dell offers a range of thin-client devices as part of its end-to-end desktop virtualization portfolio.

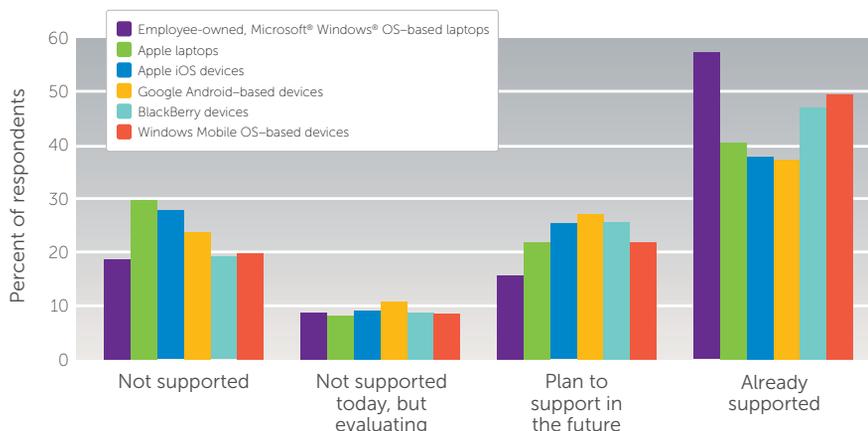
Indicator 4: Wide adoption of server virtualization and cloud services

IT departments tend to be increasingly tolerant of consumer cloud services from organizations such as Amazon, Google, and Microsoft. According to IDC, 93.6 percent of respondents surveyed are “proactively moving forward or still evaluating the idea” of adopting cloud services in their organizations, while only 6.4 percent of the respondents reported they “have no plan to utilize cloud in any fashion.”³

Accelerated adoption of desktop virtualization and the openness of IT departments to allowing access to applications through cloud services are creating a fertile environment that stimulates further interest in virtual desktop technologies.

Scaling desktop virtualization for specific needs

Dell has considerable experience and expertise developing desktop virtualization solutions by investing resources ahead of the industry adoption curve. The result is a well-implemented, mature portfolio that leverages this expertise and investment in data center hardware, software, endpoints, and services. Dell helps reduce complexity and improve predictability of each deployment by creating end-to-end solutions that scale according to the needs and expansion goals of each organization and help maximize productivity for IT departments and end users.



Source: “Consumerization of IT: An IDC survey,” by IDC, Doc #227925, April 2011.

n = 490

Figure 3. Adoption of end-user devices and supporting technology

No single desktop virtualization approach can serve the needs of all organizations in the same way. Based on global quantitative research and use-case expertise acquired during customer engagements, the Dell DVS Group identified common patterns in two segments. Dell targets organizations having simple IT needs with the Simplified line of solutions and presents organizations with large enterprise data centers and diverse

IT requirements with the Enterprise line of solutions (see Figure 4).

The Simplified line of solutions includes plug-and-play appliances that are easy to install and operate for organizations preferring to manage their own desktops. The Enterprise line of solutions is designed to scale to more than 5,000 users, with enhanced levels of redundancy, availability, management, and mobility. On-premises Enterprise solutions

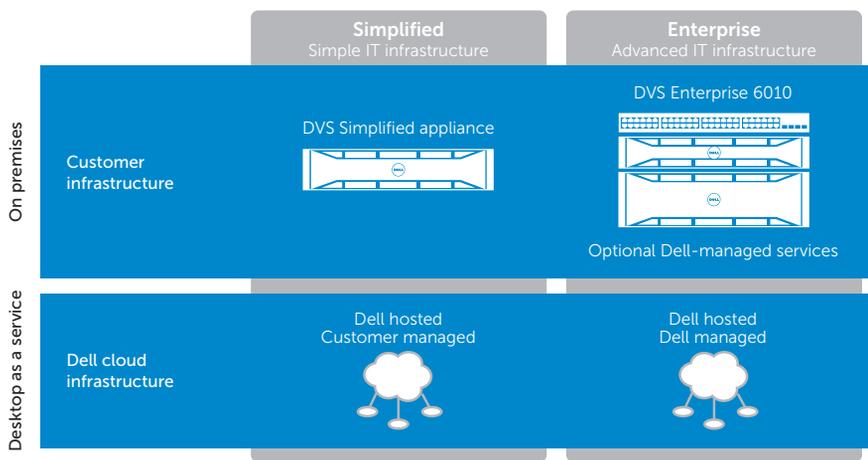


Figure 4. Dell desktop virtualization delivery systems

³ “Consumerization of IT: An IDC survey,” by IDC, Doc #227925, April 2011.



include a preconfigured and pretested infrastructure comprising the entire virtualization stack: server, networking, and storage using either industry-leading VMware® or Citrix® software along with Dell Services to design, implement, and support the overall infrastructure. Additionally, DVS leverages Dell investments in data centers worldwide to offer compelling DaaS approaches for both the Simplified and Enterprise delivery models for organizations that prefer to outsource hosting of their virtualized desktops to Dell data centers.

Delivering end-to-end desktop virtualization

Converging indicators reveal the uptake in demand for desktop virtualization. This demand is being fueled by innovations in

virtualization technology and adoption of adjacent technologies that are helping improve end-user and IT productivity. Many organizations are looking for end-to-end approaches that help reduce deployment complexity and enable predictable outcomes through a diverse portfolio with the flexibility to meet specific requirements.

In anticipation of this shift in demand, and leveraging its expertise in hardware, software, and services, Dell created an organization dedicated to streamlining desktop virtualization deployments by delivering a portfolio of end-to-end solutions. This Dell™ desktop virtualization portfolio—available in Simplified and Enterprise segments—effectively addresses the diversity of organizations. 

Authors

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