

# Desktop Virtualization with Dell and Citrix: Solving the Desktop Lifecycle Management Challenge

---

An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) White Paper  
Prepared for Citrix and Dell

July 2009



IT MANAGEMENT RESEARCH,  
INDUSTRY ANALYSIS AND CONSULTING

## Table of Contents

Executive Summary .....	1
The Problems with Typical Desktop Management .....	1
Solving Lifecycle Management Problems with Desktop Virtualization .....	2
Server-Hosted Desktop Virtualization with Citrix and Dell.....	3
Dell Hardware and Services.....	3
Citrix Software Solutions .....	4
More than the Sum of Its Parts .....	4
EMA Perspective.....	5

## Executive Summary

Maintaining physical desktops typically requires time-consuming desk-side visits, reduces user productivity, delays support response, allows configuration drift, exposes data, reduces mobility, and increases costs. Automation software helps, but really just masks the fundamental problems of traditional physical desktop management.

Server-hosted desktop virtualization – also known as remote desktop or virtual desktop infrastructure (VDI) – solves many of these problems by separating the user environment from the physical hardware. The virtual desktop is hosted centrally, and delivered to the end user across the network, eliminating many of the problems of maintaining distributed desktop systems.

**Dell and Citrix together provide an excellent starting point for a pragmatic deployment of desktop virtualization**

Dell and Citrix together provide an excellent end-to-end solution for remote, server-hosted desktop virtualization, called Dell Virtual Remote Desktop (VRD). Combining Dell's intelligent OptiPlex FX160 flexible computing client, OptiPlex 760 and 906 FLX systems and support services with Citrix's advanced XenDesktop desktop virtualization solutions, Dell VRD provides a desktop

replacement that is better than a standard desktop in many ways by centralizing management, making IT resources more efficient, improving data security and control, reducing support times, improving staff mobility, and improving the end-user experience.

This ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) white paper provides analysis and advice on how this server-hosted desktop virtualization can deliver substantial benefits, simplifying lifecycle management, and driving ongoing cost and productivity benefits.

## The Problems with Typical Desktop Management

EMA has identified many essential maintenance activities in the typical desktop lifecycle. These include discovery, asset (hardware, software) recording, hardware and software provisioning, software updates and patch distribution, configuration management and control, and problem remediation.

In a typical desktop management paradigm each of these activities is essentially a one-to-one relationship – IT administrators must attend individually to each activity, with a specific effort for each physical desktop, laptop, notebook, or other endpoint client machine.

As a result, traditional endpoint clients are often costly to procure, deploy, provision, support, and secure. For example:

- The business need for complex installations with multiple software packages and hardware options ends up creating a level of diversity that requires a new specialist for every new deployment, increasing staffing and training costs, and delaying resolution times for problems.
- The need for IT administrators to provide local support with desk-side visits to repair hardware and software increases costs not just for IT (including travel time and costs), but also for users (as they must wait for the desk-side visit to solve their problems, often unable to work).

- With complex local software deployments that expand over time, performance, availability, and failure rates typically tend to increase over time, limiting end user productivity and further draining IT support resources
- Beyond maintenance costs, edge desktops with local applications and content can expose data and systems to security and compliance risks, putting corporations at risk of fines, loss of reputation, downtime, and legal costs
- Localized deployment reduces effective mobility, as users are ‘chained’ to a specific physical system and/or location, so the business cannot use human resources efficiently in multiple roles or locations
- The reality of business means that a single standard is not possible; rather, multiple distinct configurations are required (e.g. to support different departments or user roles), resulting in duplicated efforts to maintain each system type separately

Automation software (e.g. for imaging, software upgrades, patches, etc) certainly addresses some key productivity issues to an extent, but in a sense only masks the problem. Client lifecycle management remains a set of multiple one-to-one activities, even though those multiple activities happen without human intervention. Automation, therefore, does not eliminate the fundamental problems associated with the traditional physical desktop.

## Solving Lifecycle Management Problems with Desktop Virtualization

An emerging (and rapidly maturing) solution to this problem is desktop virtualization – a technology that abstracts or separates the ‘virtual desktop’ environment (the OS, applications, user customizations, application data, etc.) from the physical desktop hardware. While there are several implementations of desktop virtualization (not all of which are proven or mature), the most popular is server-hosted desktop virtualization – also known as remote desktop or virtual desktop infrastructure (VDI). In this model, the virtual desktop is hosted on a remote server, typically inside the data center, and delivered across the network to a PC, a thin client, or a hybrid device.

Server-hosted desktop virtualization fundamentally changes the management paradigm

Server-hosted desktop virtualization fundamentally changes the management paradigm, effectively swapping a one-to-one management paradigm for a one-to-many (or few-to-many) paradigm, resulting in:

- Easier deployment, update, and maintenance – by abstracting the OS, applications, customizations, and data from the physical hardware, IT can maintain fewer base images, and customize them dynamically, reducing the complexity of desktop management
- Faster, cheaper support – centralized maintenance of virtual desktops and the ability to instantly swap out a failed image means the end of the desk-side visit, faster resolution for problems, and lower support costs
- Legacy OS and application support – end users can quickly swap between Windows XP, Vista, Windows 7 or even Windows NT, all on the same endpoint device, without installation hassles or downtime

- Better security and compliance – without a local installation, no corporate data ever needs to leave the data center, ensuring centralized audit and control to maintain data security and regulatory compliance
- Balance of control and usability – separating personal and corporate desktops also permits end users to customize their personal applications (e.g. iTunes, games, IM, etc.) without interfering with corporate applications, data, or settings
- Improved efficiency & productivity – users can access more powerful environments or new applications at the click of a mouse, to take advantage of faster processing and new business solutions at the drop of a hat
- Better availability, DR, BCP – virtual desktops can be migrated in seconds to bypass failing endpoint devices (or even entire locations), maintaining business continuity in the case of minor mechanical problems or even major disasters
- Improved workforce flexibility and mobility – workers can access their personal desktop from any department or location, even on the road (without carrying a laptop) or from PDAs and wireless devices, and if they change roles can access a new standard virtual desktop in minutes

---

Dell Virtual Remote Desktop (VRD) brings together Citrix and Dell ... with a synergy and combined value that is more than the sum of its parts.

---

## Server-Hosted Desktop Virtualization with Citrix and Dell

Dell Virtual Remote Desktop (VRD) brings together Citrix and Dell – two mature companies with a strong relationship and a long history of innovation – to deliver a unique desktop virtualization solution, with a synergy and combined value that is more than the sum of its parts.

### Dell Hardware and Services

The solution starts with the Dell OptiPlex FX160 flexible computing node, an intelligent multi-purpose client device that is an excellent desktop replacement. With power consumption closer to that of a thin client than a full PC, it will reduce desktop power consumption; an initiative that EMA research shows provides the highest average cost saving of any green IT initiative.

With onboard flash storage options, the OptiPlex FX160 functions as a client appliance accessing remote desktops from Dell's Virtual Remote Desktop, or Citrix XenDesktop or other server-based virtualization solutions. With Dell's EasyConnect diskless option, The FX160 FLX can be provisioned with a complete operating environment using Citrix Provisioning Server for Desktops, available as part of another combined Dell-Citrix solution called Dell On-Demand Desktop Streaming (ODDS). This is a uniquely flexible hardware combination that is perfectly suited to provide the OS flexibility provisioning abilities of Citrix XenDesktop.

Dell also contributes networked, virtualized storage with the Dell EqualLogic PS Series iSCSI SAN arrays. XenDesktop has specific features to integrate seamlessly with PS Series SANs, making deployment with XenDesktop simple, fast, and flexible.

Dell also provides essential support services – the single point of contact for hardware and software – and a refreshingly modular offering of implementation services such as an introductory workshop, identification of user requirements, a comprehensive environmental assessment, and design and deployment of a complete desktop virtualization solution.

## Citrix Software Solutions

Citrix is focused on an over-arching message of simplifying application delivery in all its forms. It therefore brings a range of technologies to the virtual desktop environment – not just a hypervisor and a connection broker – including:

- Flexible provisioning of virtual desktops running on a dedicated blade PC, a shared system, or a common desktop, or even a centrally managed OS that is streamed and executed on the local machine
- The high-speed ICA communications protocol, coupled with dedicated WAN acceleration, data compression, and intelligent hardware allocation technologies, for faster processing and presentation of audio, graphics, and other complex user streams
- Support for a range of important end-user devices, including local printers, USB devices, soft-phones and physical VOIP handsets, bi-directional audio devices, etc.
- Intelligent role-based allocation of virtual desktops, fully integrated with traditional user management tools like Active Directory

XenDesktop is also complementary to Citrix XenApp. XenDesktop delivers a complete operating environment, with the OS and core applications (word processor, PDF reader, e-mail, etc.) for all users, all from a single ‘golden image’, while XenApp can add virtual applications for one-off or permanent use for individual users.

---

This is more than just a desktop replacement – it is actually better than a standard desktop

---

## More than the Sum of Its Parts

As a result of the unique synergy, this is more than just a desktop replacement – it is actually better than a standard desktop in many ways:

- Desktops are more flexible, able to move from remote virtual desktop to a local streamed desktop in minutes
- Corporate data can be stored locally, centrally, or both, balancing control and usability, security and accessibility
- Users can enjoy faster logon times, regardless of location, driving even more productivity than normal desktop users
- Users get faster support for problem resolution, system upgrades, application installation, and more, without waiting for desk-side visits
- Power users can transition seamlessly to faster hardware, leveraging server-side resources for improved performance without any local hardware upgrade
- Virtual desktops provide a flexibility and mobility that is impossible with a standard desktop, with universal access to a personalized system in every location, without lugging a laptop

## EMA Perspective

Server-hosted desktop virtualization can deliver substantial benefits, simplifying lifecycle management, and driving ongoing 'hard dollar' cost benefits

Without doubt, server-hosted desktop virtualization can deliver substantial benefits, simplifying lifecycle management, and driving ongoing 'hard dollar' cost benefits from distributed hardware cost reduction, reduced support costs, staffing efficiency, and more. And it is certainly beneficial for many, if not all, end users, delivering productivity, uptime, and performance that often surpasses a traditional desktop.

Desktop virtualization does not need to be an expensive rip-and-replace project either, and can show positive returns even in smaller, phased deployments. As existing desktops reach their end-of-life, desktop virtualization with flexible computing nodes can reduce hardware replacement costs. Newer devices can use streamed OS or virtual desktops and still deliver substantial benefits without any desktop replacement costs. Departmental deployments can be converted over their lifecycle, while new departments can go virtual immediately to avoid traditional lifecycle headaches altogether. The key is to approach desktop virtualization with a long-term strategic plan, but focus in the short term on pragmatic and tactical deployments that address specific lifecycle problems.

Whether in healthcare (for compliance and mobility); call center (for hardware cost reduction); sensitive departments like mobile banking (for data security); agent, channel, or consultant networks (for security and agility); remote access (to support offshore, home-work, or DR/BCP initiatives); or shared environments like schools or training rooms (for rapid, low-cost repurposing), the Virtual Remote Desktop eliminates the most vexing problems created by local, physical desktops. Between them, Citrix and Dell deliver the server, storage, client, software, services, and support components for an excellent end-to-end desktop virtualization solution.

## About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that specializes in going “beyond the surface” to provide deep insight across the full spectrum of IT management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help its clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise IT professionals and IT vendors at [www.enterprisemanagement.com](http://www.enterprisemanagement.com) or follow [EMA on Twitter](#).

---

This report in whole or in part may not be duplicated, reproduced, stored in a retrieval system or retransmitted without prior written permission of Enterprise Management Associates, Inc. All opinions and estimates herein constitute our judgement as of this date and are subject to change without notice. Product names mentioned herein may be trademarks and/or registered trademarks of their respective companies. “EMA” and “Enterprise Management Associates” are trademarks of Enterprise Management Associates, Inc. in the United States and other countries.

©2009 Enterprise Management Associates, Inc. All Rights Reserved. EMA™, ENTERPRISE MANAGEMENT ASSOCIATES®, and the mobius symbol are registered trademarks or common-law trademarks of Enterprise Management Associates, Inc.

**Corporate Headquarters:**  
5777 Central Avenue, Suite 105  
Boulder, CO 80301  
Phone: +1 303.543.9500  
Fax: +1 303.543.7687  
[www.enterprisemanagement.com](http://www.enterprisemanagement.com)



1917.072309