



Solve the Desktop Crisis with Cisco Desktop Virtualization Solution with VMware View



The traditional approach to managing desktops in a global enterprise has become untenable. Increasingly, geographically dispersed user endpoints, in the form of desktop and laptop computers and personal devices, are making “desktop” management and security nearly impossible. Operating costs are increasing dramatically as IT departments struggle with the security and operational challenges of distributed equipment and the sensitive data it contains. As IT departments consider the cost of upgrading equipment to accommodate Microsoft Windows 7, they are prompted to act.

Desktop virtualization technology has matured significantly since the last major desktop transformation, and organizations recognize that moving to a centralized desktop infrastructure is a strategic move that can help them regain control over their desktop environments, rein in costs, and establish a consistent user experience across a wide range of devices. This document describes how the Cisco[®] Desktop Virtualization Solution with VMware View allows organizations to regain control while eliminating the guesswork from the implementation of a strategic desktop infrastructure.

The Challenge: Desktop Cost and Complexity

The cost and complexity of managing desktops distributed across a global enterprise is increasing dramatically. IT departments are challenged by the need to deploy and constantly update hundreds, or even thousands, of desktop and laptop computers and mobile devices across a global infrastructure. IT departments also face the daunting task of migrating to Microsoft Windows 7. This migration involves upgrading to the new operating system and to new application versions across a wide range of disparate systems that may not meet the operating system’s minimum hardware requirements. At the same time, users continue to demand a greater number of applications and the capability to access them anywhere, at any time, and on the device of their choice.

IT departments are struggling to regain control over data distributed across user desktop and laptop computers. Their ability to control this data can determine their ability to comply with industry and government regulations. The need to improve control over desktop infrastructure and services, combined with the need to rein in the expanding costs of maintaining a personal computer for each employee, has made desktop virtualization an unavoidable priority for many companies.

As organizations reevaluate their desktop strategies, they recognize that change is difficult. They must juggle two competing requirements: the users’ need for access, high-performance experience,

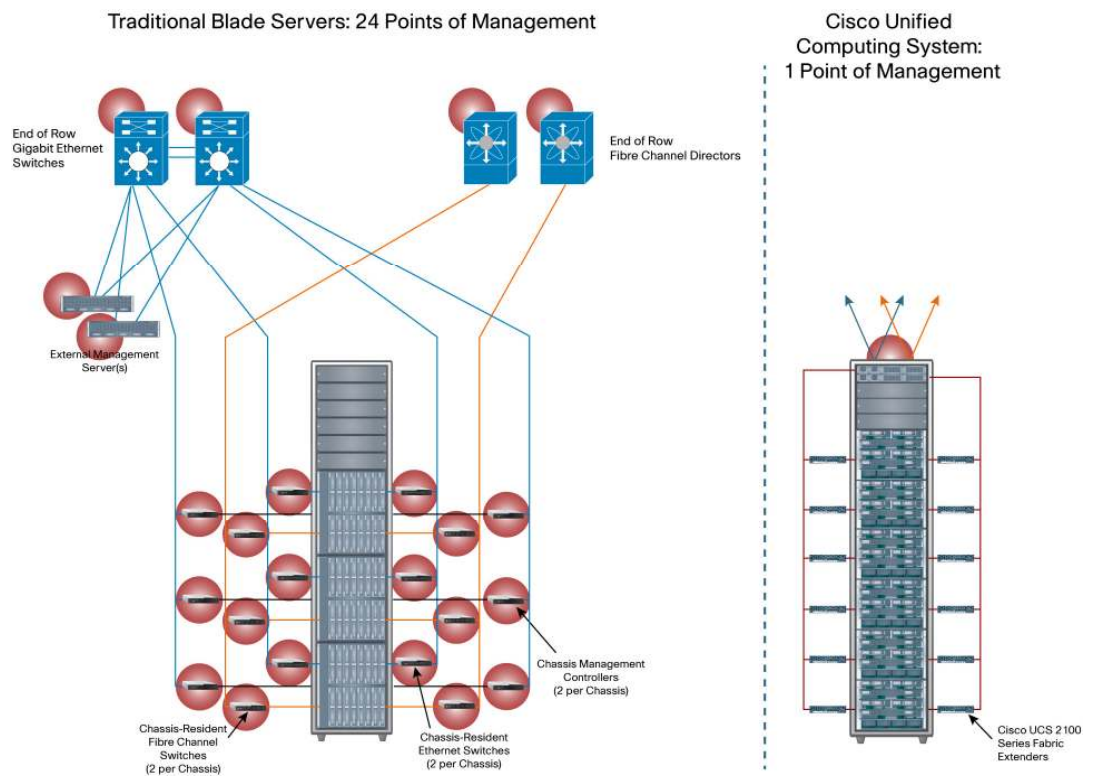


time, with both online and offline desktop access and a level of continuity not previously available, enabling increased staff productivity.

VMware View running on the Cisco Unified Computing System speeds desktop deployment and scales with business needs. Flexible, just-in-time provisioning and integrated policy-based management support a mobile workforce while increasing control and utilization of corporate infrastructure resources. IT departments can define quality of service (QoS) for individual or groups of desktop systems and automatically balance desktop workloads across the infrastructure, providing an excellent user experience.

The Cisco Desktop Virtualization Solution with VMware View is designed to help businesses regain control of desktop deployment and management costs. Desktop deployments with this radically simplified architecture reduce complexity by reducing the number of components that need to be purchased, powered, cooled, configured, managed, and secured by about one-third compared to other centralized and decentralized desktop solutions (Figure 2). Centralizing desktops greatly improves management efficiency, and integration between Cisco UCS Manager and VMware View and a simplified, single point of management helps further reduce operating costs.

Figure 2. Traditional Infrastructures Increase Complexity and Management Interfaces, and Use of the Radically Simplified Cisco Unified Computing System as the Foundation for Desktop Virtualization Reduces the Number of Components and Management Interfaces Required to One



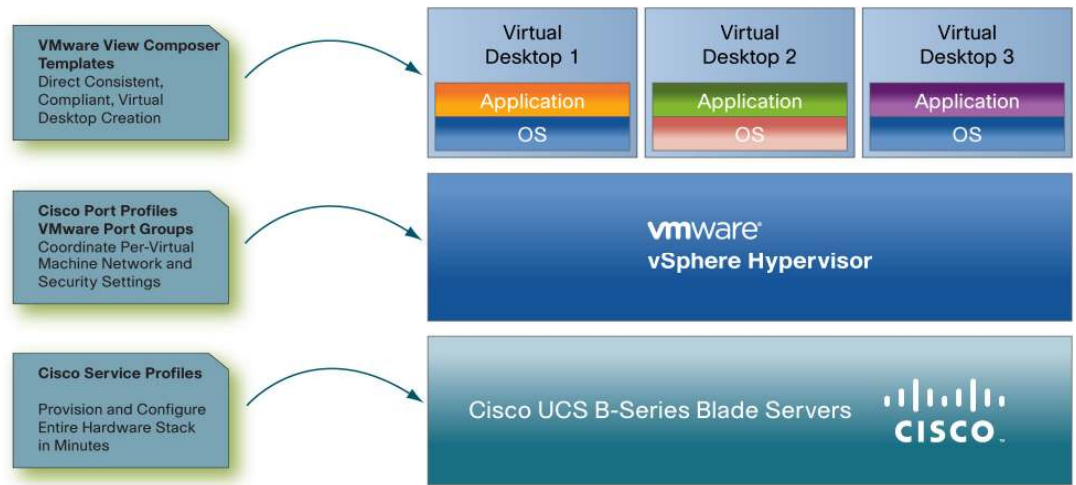
The solution keeps storage costs under control using optimization capabilities, including data deduplication and tiered storage. Tiered storage places essential data on high-speed storage, and older, less frequently accessed data on slower, less-expensive storage, significantly decreasing total storage costs.



individual virtual desktops. Now IT departments can consistently create and manage their virtual desktop infrastructure in a way that maintains compliance with IT best practices, industry guidelines, and government regulations. The solution makes this possible through the integration of three technologies (Figure 5):

- Cisco service profiles automate the process of scaling the physical infrastructure, configuring every aspect of the hardware stack, including firmware, in minutes. Now IT departments can perform scaling rapidly to meet workload requirements or support additional users, without worrying about errors that can make a system noncompliant.
- VMware View templates speed desktop provisioning by automating the process of creating consistent, compliant clones of a well-defined master, or golden, image configuration. This automation helps organizations rapidly scale up to support additional users.
- Cisco port profiles combined with VMware port groups define and maintain the per-virtual machine network configuration so that each virtual desktop remains secure regardless of its physical location.

Figure 5. Cisco Service Profiles and VMware View Templates Scale the Virtual Desktop Infrastructure While Helping Ensure Compliance



Superior Control and Agility of Desktop Operations

IT departments recognize that migrating to a new OS version provides an excellent opportunity to transition to virtual desktop computing. The solution from Cisco and VMware supports the natural process of migrating users - one group at a time - with a solution that radically simplifies the deployment of new virtual infrastructure and the virtual desktops that run on them. Now organizations can reduce the time needed to deploy virtual desktops for new employees or contractors, completing the entire process in minutes rather than the weeks it can take to purchase, provision, and deploy a physical desktop solution.

Change is a constant for IT departments, whether to keep up with the changing user landscape due to growth, mergers, and acquisitions; migrate users to Microsoft Windows 7; or mitigate outages to meet service-level agreements (SLAs). The Cisco and VMware solution dramatically speeds policy-based deployment and enables just-in-time provisioning of both virtual desktops and the underlying Cisco Unified Computing System infrastructure. After VMware View templates have been



socket Cisco UCS blade servers can be deployed. Additionally, every Cisco Unified Computing System is designed to support, under a single management interface, up to 320 physical servers for massive scalability. On top of this foundation, VMware View is optimized and tuned to support thousands of users, handling boot storms easily.

Uncompromised User Experience

If a centralized, virtualized desktop is going to be successful, it cannot hinder staff productivity. The Cisco Desktop Virtualization Solution with VMware View does not compromise the user experience. This solution provides a near-native usability experience for the end user. This experience is achieved using capabilities such as online and offline access, location-based printing, automatic redirection of USB input, and high-performance graphical rendering. These capabilities are enabled using the Cisco Unified Computing System platform's lossless, low-latency, high-bandwidth unified fabric and high-performance, scalable memory computing.

Enable High-Performance Graphical Rendering, Location-Based Printing, and USB Access

The Cisco Desktop Virtualization Solution with VMware View delivers uncompromised usability for end users, with support for graphics and rich media such as video and Adobe Flash content. In addition, the solution supports the capability to connect up to four monitors to a single virtual desktop, addressing multiple-monitor requirements similar to the way they would be addressed from a local desktop or laptop system. Users expect to use local printers and USB devices, and this capability can be enabled, depending on security policy, on a per-person or per-group basis, for consistent management of local data accessibility. The VMware PC-over-IP (PCoIP) display protocol enables all these features and is the first protocol designed specifically to provide an uncompromised remote-desktop experience.

Provide Both Online and Offline Desktop Access

Not all users have the capability to be connected to the network 100 percent of the time. For users who need to disconnect from the network but still need to access their desktops, the Cisco and VMware solution offers VMware View Client with Local Mode. With Local Mode, an encrypted virtual desktop is streamed from the data center to the local system, giving the user full access to the working environment. When the local system is reconnected to the network, all changes are automatically synchronized with the virtual desktop residing in the data center. All IT desktop policies can be extended to the Local Mode desktop, enhancing data security. The capability to provide offline virtual desktops enables IT departments to manage secure desktops centrally, extending policies to local devices, while users gain access their desktops anywhere and at any time.

Benefit from Cisco's Networking Leadership

High-performance servers and end-to-end networking - LAN, WAN, security, and mobility - are essential for any successful virtual desktop solution. These capabilities can dramatically improve the cost-effective, bandwidth-efficient delivery of high-quality concurrent virtual desktop sessions over the enterprise-wide infrastructure. Cisco Application Networking Services such as Cisco Wide Area Application Services (WAAS) and Cisco Application Control Engine (ACE) along with Cisco Adaptive Security Appliances (ASA) can enhance and complete the solution for scalable, end-to-end delivery of virtual desktops. Customers can benefit from Cisco's networking industry leadership



in providing best-in-class end-to-end connectivity for fast, scalable, and secure virtual desktop solutions across distances and a variety of network media.

Restored Control over Desktop Costs

The Cisco Desktop Virtualization Solution with VMware View allows IT departments to regain control of the capital expenditures and operating costs associated with desktop environments. Centralizing desktop systems simplifies management of the desktop environment, enabling uniform business policies and best practices to be applied consistently across the environment. This solution, with its radically simplified architecture and integrated management, enables just-in-time provisioning of desktops to further reduce TCO.

Reduce Costs Through Radically Simplified Architecture

The simplified architecture of the Cisco Desktop Virtualization Solution with VMware View dramatically reduces - by up to 60 percent - the number of adapters and devices that need to be purchased, powered, cooled, configured, managed, and secured compared to other centralized and decentralized desktop deployments. The solution's integrated, simplified management capabilities improve IT productivity and reduce the likelihood of costly errors. The combined solution also reduces costs associated with centralized networked storage; it enables the use of multiple tiers of storage, with infrequently accessed files moved to inexpensive storage repositories, greatly reducing storage costs.

Improve Operation Efficiency

Transitioning from a decentralized to a centralized virtual desktop environment increases operation efficiency, control, compliance, and security. The solution from Cisco and VMware streamlines desktop operations with integrated management and configure-once templates, reducing the amount of time administrators spend deploying, monitoring, and managing each desktop, and enabling administrators to support more desktops. Policy-based deployment reduces errors and associated service calls, significantly reducing operating costs.

Increase Revenue as Employees Become More Productive

With the Cisco and VMware solution, employees are more productive because they are not experiencing outages. When physical desktop or laptop computers fail, it can take days or weeks before users regain access to their systems and data. In contrast, the Cisco Desktop Virtualization Solution with VMware View provides desktop continuity and high availability for optimal productivity.

Simplified, Modular Deployments

Any large project that affects most, or all, personnel should be implemented in phases. Cisco enables simplified, modular deployment of the Cisco Desktop Virtualization Solution with VMware View by packaging the infrastructure as a set of building blocks that can be deployed incrementally. A Cisco Validated Design based on rigorous testing at scale is used to define every element of the modular building blocks, accelerating solution deployment while providing a simplified path for growth. With this approach, IT departments can start with an initial desktop virtualization implementation or proof of concept. The solution is based on two packages (Figure 9): the Starter Pack and the Expansion Pack for VDI-Based Desktops.



For more information, visit: www.vmware.com



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