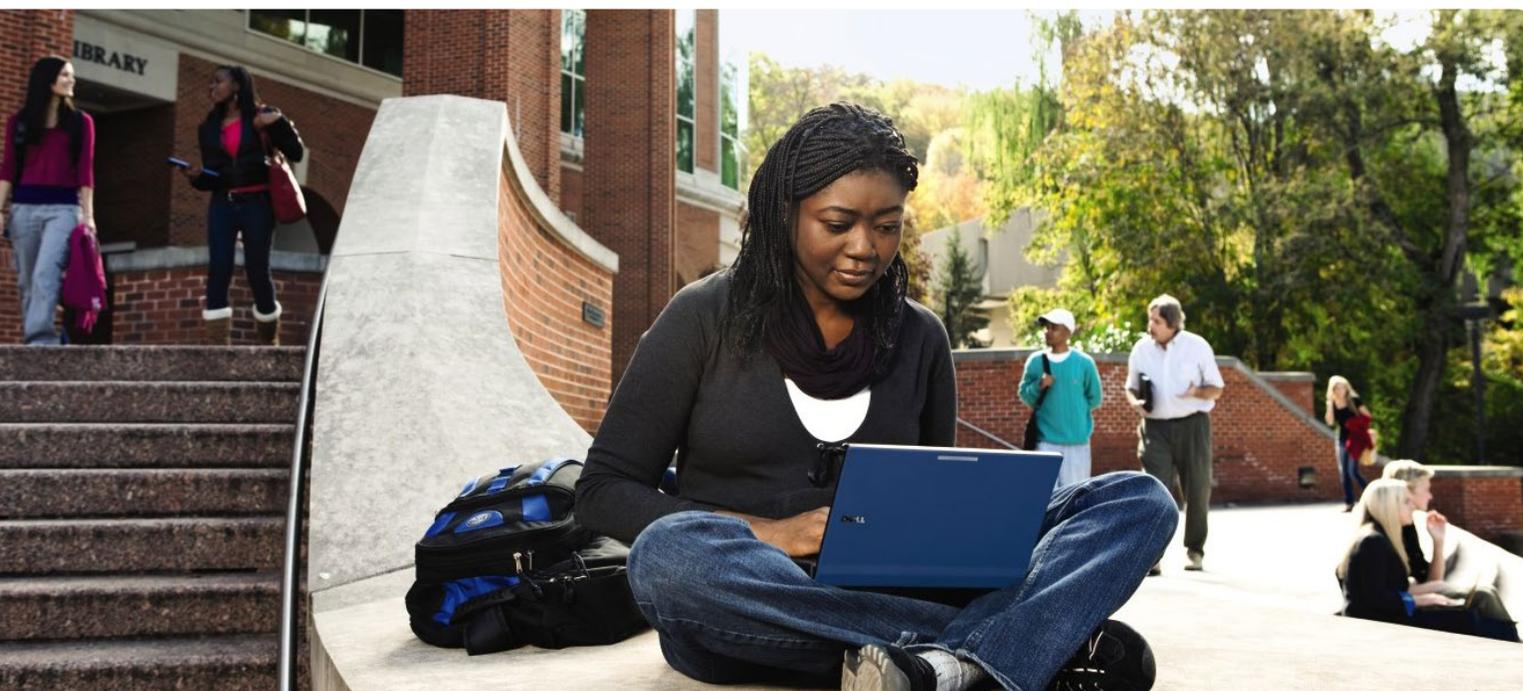




Wyse vWorkspace Supports Higher Education's Desktop Virtualization Needs

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Abstract

As interest in alternative approaches to application and desktop delivery increases, higher education institutions are presented with a variety of solutions for bringing these technologies to life on campus. While some solutions may not meet all requirements - or perhaps are overly complex, or too expensive, vWorkspace is well suited to meet the needs of higher education.

This document explains how vWorkspace's broad feature set serves the needs of higher education in each of the following areas:

- Desktop management
- User experience
- Locality services
- Infrastructure management
- Total cost of ownership
- Security

Introduction

vWorkspace is a desktop virtualization and application delivery solution that complements native Microsoft technologies to provide a platform that is not only simple, scalable and extremely flexible - but one that also delivers enterprise-class performance.

Simple to install and use

vWorkspace requires no dedicated specialists for deployment and ongoing management of the infrastructure. Built on mainstream Microsoft technologies, organizations with existing experience in Remote Desktop Services (RDS), Hyper-V and System Center will find vWorkspace to have a familiar structure. The vWorkspace management interface is designed with the desktop professional - rather than the server professional - in mind, and is therefore geared toward those activities most common to desktop management and application delivery. End-to-end monitoring and diagnostics provide deep visibility into the complete, desktop virtualization infrastructure - all the way down the individual user experience. Simplicity, paired with a robust feature set and exceptional technical support have helped vWorkspace maintain a customer satisfaction rating greater than 90%.



Scalable and flexible for organizations of all sizes

Whether tens of thousands of employees or five employees, vWorkspace scales up and down, down and up, based on your requirements. vWorkspace flexible profiles enable very granular resource assignment that can be custom tailored to each user based on seemingly endless combinations of over twenty parameters including such things as IP address, location, device type, organizational unit, day of week, time of day and many more. And with increasing interest in desktops hosted in the cloud, it's also important to note that vWorkspace also supports multi-tenancy to meet the strict requirements of managed service providers.

Enterprise performance

Paired with Hyper-V, vWorkspace enables the deployment of thousands of desktops in under an hour. Install or upgrade to a new version of Windows across all of your desktops in twenty minutes. In addition, users will enjoy a rich, "like-local," experience leveraging native Microsoft RemoteFX optimized on Dell infrastructure and clients.

Feature overview

vWorkspace offers a broad feature set that supports the needs of higher education. The solution:

- Provides an integrated console that centralizes and automates management of virtual desktop infrastructure (VDI), Terminal Server/Remote Desktop Session Host (TS/RDSH), and application virtualization
- Reduces costs by leveraging local storage (DAS) as opposed to the traditionally more expensive methods
- Delivers breakthrough scalability improvements right out of the box with patent-pending Hyper-V Catalyst components, including HyperCache and HyperDeploy
- Uses advanced load-balancing techniques to ensure peak performance
- Includes free connector software for Windows, Mac™, Linux®, iOS, Android™, Java® and other platforms
- Delivers a stellar user experience on a variety of connections and popular devices
- Minimizes the performance impact of LAN/WAN latency by improving the Microsoft RemoteFX user experience at no additional CPU cost
- Offers rich reporting capabilities, including administrative actions, desktop state, and environment configuration
- Provides a robust library of PowerShell commands that simplify automation, integration and scripting
- Supports two-factor authentication for all vWorkspace connectors, adding an extra layer of security
- Includes integrated monitoring, diagnostics and reporting for deep visibility into the complete desktop virtualization infrastructure as well as the user experience, enabling faster mean time to resolution

Desktop management features

vWorkspace feature	Use case
TS/RDSH	In some situations, a shared RDSH desktop is an ideal and economical solution. For example, an RDSH desktop works well for generic computers used by students to browse the web and check email.
Hosted VDI	In situations where a full desktop is required, vWorkspace offers Windows XP®, Windows Vista®, Windows 7 and Windows 8. This flexibility enables faculty and staff to support varied use cases and curricula that require different versions of Windows. VDI also allows students to install applications required for a particular curriculum.
Published applications	In scenarios where a full desktop is not required, an individual published application can be offered. A published application appears as a natively installed application, but it executes in the data center. For instance, if the student information system (SIS) runs better on servers in the data center, then the SIS application can be published to the end users while they perform their other desktop tasks on a local computer.
User profile & settings management	User settings and desktop customizations are quickly and automatically saved to a central data store and restored upon the users' next login. This allows students to run demanding applications on their own devices. Administrators can also assign users to non-persistent VDI desktops, or to a pool of RDSH desktops, knowing that any settings or customizations the user makes will persist from session to session.
Flexible assignment options	Depending on the time of day or the user's physical location, Active Directory (AD) OU placement or AD group membership, user-specific applications can be offered. For instance, if a user signs in from a library computer, then a generic desktop with links to the library catalog will be offered. If the same user logs in from a special-purpose lab computer, then a desktop specific to that purpose will be presented.
Virtual application integration	vWorkspace integrates seamlessly with Microsoft App-V virtualized applications. Virtualizing the software associated with a curriculum eliminates the need to recreate the desktop image every time new software versions are released.



Desktop management features (continued)

vWorkspace feature	Use case
Specialized desktop images	Each curriculum can have a specialized desktop image with specific configurations supporting that subject. It is no longer necessary to load software from multiple subjects on the same desktop machine, thus reducing labor costs, complexity, and unexpected software interactions.
Desktop integration	At times an administrator may want to offer an application to the user with minimal disturbance. vWorkspace's desktop integration feature allows for a published application to be presented on the user's computer as a simple icon on the desktop.



User experience features

vWorkspace feature	Use case
Support for diverse client devices	vWorkspace offers students, faculty and staff a wide choice of devices to use to connect to published applications or desktops. Popular options are Windows, Macintosh and Linux computers, and Android and Apple iOS™ devices.
USB device support	Instead of consuming costly centralized storage for student work files, students can be issued USB thumb drives that can store files from their virtual desktops.
Microsoft RemoteFX support	vWorkspace uses the latest in Microsoft remote display technology, so users will enjoy a high-fidelity experience, which is crucial for content rich in audio, video, and graphics.
Multimedia support	Using multimedia redirection and advanced audio-visual CODECs, multimedia content is displayed with the same quality and fidelity as a full desktop computer.

Locality services features

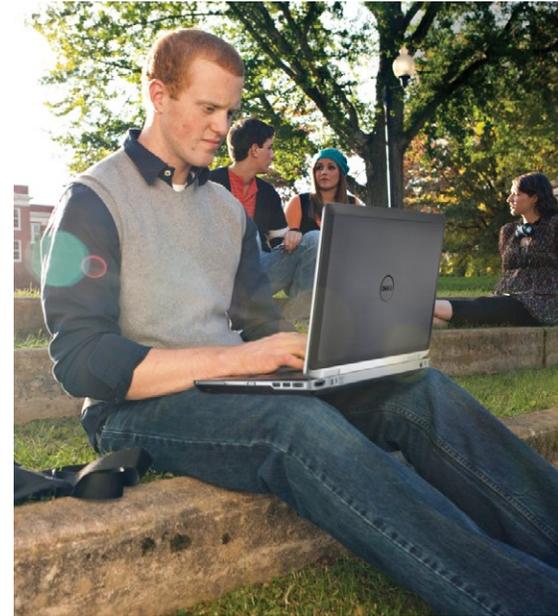
vWorkspace feature	Use case
Universal printing	vWorkspace printer driver technology removes the requirement for client computers to install specific drivers for each printer model available to the user.
Geographically localized printing	Students, faculty and staff who routinely move from location to location are often faced with the problem of trying to figure out which printer is physically closest to their location. vWorkspace solves this problem by automatically mapping the printer closest to the user based on the IP address/name of the client, user ID of the user, time of day and other criteria.
Desktop or application selection based on client location	Using the same concept that facilitates geographically localized printing, vWorkspace allows for the selection of the applications or desktop based on the location of the user. For instance, a certain desktop pool can be made available to students only when they access it from specific computers in a specific classroom.

Infrastructure management features

vWorkspace feature	Use case
Virtual machine IOPS caching	vWorkspace allows for the RAM caching of virtual machine disk IO on the virtualization host*, which allows for the positioning of virtual machine files on local host storage. This feature greatly reduces the reliance on off-board storage.
Automated deployment of virtual machine images	Once a virtual machine image is finalized, it is automatically distributed to the virtual hosts.* This feature greatly reduces the effort required by administrators to keep the system up to date.
Diverse support for hypervisors	vWorkspace supports the diverse set of hypervisors likely to be found in an academic environment: Microsoft Hyper-V (direct or via SCVMM), VMware vSphere® and Parallels Virtuozzo.
Comprehensive monitoring of user experience and infrastructure	vWorkspace includes integrated monitoring, diagnostics and reporting—all viewable from the vWorkspace Management Console. This solution frees senior engineers from having to chase down issues, and enables junior level staff to quickly determine if there is a problem that requires escalation.
Automated load balancing	vWorkspace automatically routes incoming connection requests to the least busy member of the virtual infrastructure, assuring effective utilization of hardware and improved user experience.
Scriptable API	Repetitive tasks can be automated through an extensive PowerShell API. For instance, at the end of each quarter or semester, desktops assigned to students could be automatically reset to a “clean” state via a scheduled script.

Features that reduce total cost of ownership

vWorkspace feature	Use case
Simplified management	vWorkspace provides an extremely simple and easy to use management interface. This interface requires minimal training and enables management of the entire desktop/published application environment from a single console.
Delegated rights	Management functions can be delegated or restricted based on user account. For example, interns or junior admins can be allowed to perform only basic functions; more complex functionality can be reserved for senior administrators.
ThinShell	ThinShell is a tool to transform a Windows computer into a dedicated VWorkspace endpoint. ThinShell can be installed on older, depreciated computers that are still functional, greatly extending the useful life of the computer.
Thin client compatibility	In lieu of purchasing full client computers for classrooms and office locations, institutions can purchase thin clients, which are inexpensive and simple to maintain. In addition, because no user data is stored on the client, if a client fails, it can simply be replaced and the user can pick up where he or she left off.
Taking advantage of green IT incentives	By using low-wattage thin clients and employing other power management techniques, it may be possible to take advantage of green IT programs.



* For virtualization hosts running Microsoft Hyper-V

Security features

vWorkspace feature	Use case
Two-factor authentication	For applications with access to sensitive data, two-factor authentication offers a higher level of industry-standard security.
Cross Active Directory domain functionality	In scenarios where separate domains are used for students and faculty/staff, a single vWorkspace installation can serve users from each domain.
Restrict desktop or application based on location of client	vWorkspace will restrict access for applications that should be accessed only from specific locations. For example, an institution might require that the student information system be accessed from only office clients, not from outside the campus network.

Summary

Desktop virtualization continues to gain popularity in higher education. With its flexible deployment options, simplified management, powerful monitoring and diagnostics, and attractive price point, vWorkspace from Dell supports higher education's desktop virtualization needs.

For more information

For more information, please visit the following pages:

- vWorkspace product page
<http://www.dell.com/us/business/p/dell-software-vworkspace/pd>
- vWorkspace Community
<http://en.community.dell.com/techcenter/virtualization/vworkspace/>
- vWorkspace documentation
<https://support.software.dell.com/vworkspace/8.0.1>

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