



## BUYER CASE STUDY

# Walton College of Business Leverages Tintri for VDI Rollout

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## IDC OPINION

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"Simple to manage" is not a phrase commonly used to describe most complex storage environments. And yet this is the one of the key attributes that businesses often look for when considering storage platforms for complex environments such as a virtualization infrastructure for mission-critical workloads. The main reason why many storage solutions are difficult to manage in a virtualized infrastructure is that such storage platforms have been reverse engineered to host virtualized workloads and constructs. In older, physical datacenter paradigms, physical servers were mated to constructs such as logical units (LUNs), volumes, and raid groups. Newer virtualized datacenter paradigms, however, require that the storage platform understand the unit workload – which happens to have a one-to-one correlation with a virtual server or desktop image. Unfortunately, most storage solutions today still follow older datacenter constructs – and are therefore incapable of intelligently handling newer (virtualization) constructs. In spite of superficial overlays to make them simple to manage, these arrays are cumbersome to manage in large complex environments and quickly lose their appeal as smaller environments scale to become complex. The approach taken by Tintri in designing from the ground up its VMstore storage solution for modern (virtualized) datacenter paradigms offers several advantages over traditional storage platforms:

- **Simplified management:** Dramatic reduction in setup times is achieved by eliminating complex storage configuration or tuning. Storage constructs are automatically aligned to virtual machines and virtual disks, not LUNs and volumes. This also helps businesses benefit from a hybrid storage approach – the performance of flash/SSD with the economics of high-capacity HDD. Built-in quality of service (QoS) ensures that the system can scale to handle a large, complex mixed and multi-workload virtualized environment.
- **Reduced costs and resource burden:** Since the storage system understands VM-level constructs, VM administrators can get a global view of all VMs stored and identify performance and capacity trends without having to deal with underlying storage. At the same time, they can instantly identify performance hotspots at the hypervisor, network, and storage level – and proactively address situations before they become issues. This translates to reduced resource burden and ongoing costs.
- **Reduced risk and granular risk mitigation:** Unlike traditional storage systems, administrators can protect individual VMs with customizable policies. They can leverage VM-level instant snapshots and clones taking up no additional space and WAN-efficient replication requiring only a fraction of the bandwidth.

## IN THIS BUYER CASE STUDY

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This IDC Buyer Case Study examines the Sam M. Walton College of Business' virtual desktop infrastructure (VDI) deployment on the Tintri storage platform. IDC recently spoke with William Allred, Ph.D., associate director, Technology Center, and Scott Zemke, network administrator at Walton College of Business about their experience in deploying a 400-seat VDI infrastructure on the campus for use by undergraduate and graduate students at the College.

## SITUATION OVERVIEW

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### Organization Overview

The Walton College of Business is one of the oldest departments at the university in Southern United States. Since its founding in the early 1920s, Walton College has grown to become the state's premier college of business and a nationally competitive business school. The *U.S. News & World Report's* "2013 America's Best Colleges" ranked Walton College within the top 30 among the nation's public undergraduate business schools.

The Walton College of Business combines excellent academic programs with a wide range of experiential learning to help its more than 4,000 students connect scholarship with real business practice. It offers a Bachelor of Science in Business Administration and a Bachelor of Science in International Business in seven disciplines. The graduate programs include four master's programs (MBA, Master of Accountancy, Master of Economics, and Master of Information Systems) and Ph.D. programs in accounting, economics, finance, information systems, management, marketing, and supply chain management.

### Challenges and Solution

The Technology Center at the Walton College of Business was tasked with a campus wide rollout of a virtual desktop infrastructure. Its existing VDI infrastructure was partially built and was based on Citrix Provisioning Services – which did not meet the needs of an increasingly mobile student base. Furthermore, with an increasing focus on Internet-based delivery of coursework, collaboration, and other educational materials, the school felt the need to deploy a centrally administered campus wide VDI that could tackle next-generation Internet-based learning techniques for its mobile and social student base. Needless to say, the school needed to invest in a datacenter infrastructure that would handle the needs of an initial rollout (which the school estimated at 400 seats) and subsequently a much larger rollout that extended to all faculty and students.

Allred, associate director at the Technology Center responsible for this project, tasked his network administrator Zemke to investigate options. After exploring different deployment models and scenarios, Zemke recommended VMware Horizon View (formerly VMware View) 5.2 on vSphere 5.1. To support this infrastructure, Zemke initially recommended that the existing storage and systems infrastructure to be extended from a leading incumbent supplier. Upon further review (and associated scope creep), Zemke and Allred realized that they needed to procure additional equipment (which consisted of storage arrays and blade servers from an incumbent supplier) to service the VDI pilot. For client

access, Zemke also recommended the deployment of Dell Wyse clients – which offered secure, easily managed zero client capabilities throughout the campus.

During initial testing, the team found that the storage component of their infrastructure fell short of the necessary performance required to sustain concurrent client access. In other words, the arrays could not handle the minimum IOPS required for peak-time client access. The team also found that mapping virtual desktops, virtual servers, and hypervisors to the storage subsystem was cumbersome and introduced a layer of complexity from a provisioning, ongoing management, and troubleshooting perspective – a situation that the school was not staffed to handle. Having exhausted options with the incumbent supplier and its resellers, the team finally approached Tintri.

## Results

The school's pilot on the Tintri VMstore platform was a success. The team left the systems and client-side components as is and simply replaced the storage component of the infrastructure with the Tintri platform. After having put the Tintri platform through its paces, the team recommended that the school procure the platform. Subsequently, the team completed their 400-seat VDI rollout. According to Allred and Zemke, the Tintri platform has been performing remarkably well in the environment. Specifically, they pointed out the following benefits of the solution:

- **Performance:** With an "anytime, any device access" policy, the VDI environment has to perform at near-peak workloads the entire time when school is in session – and so far the storage system has not been the bottleneck. In fact, as newer compute nodes are added, the storage system has scaled well to support additional IOPS.
- **Resource management:** The solution is remarkably easy to manage and even with a skeletal support staff, the school has been continually expanding its VDI footprint. The Tintri solution supports non-disruptive code upgrades and dial-home functionality, both of which have gone a long way to relieve the ongoing management burden placed on the administrative staff.
- **Storage efficiency:** The school has been able to enable deduplication and compression capabilities without noticing any performance impact. With the VDI solution, the team has seen 10:1 compression and up to 10 times deduplication – and in spite of both efficiency schemes enabled, on most days utilization of the storage controllers remain on average at less than 25%.

The school's VDI deployment has dramatically improved the quality of education for students. They can now access their coursework remotely and interact with each other and the faculty more effectively. From the school's perspective, the administration team has been able to manage this project within budget and have not had to ask for more people resources. Enamored by the success, the associate director recommended that the school utilize the Tintri VMstore platform for other (and bigger) VDI and server virtualization initiatives.

## ESSENTIAL GUIDANCE

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By way of successful deployments at the Walton College of Business and others, buyers are demonstrating the benefits of deploying purpose-built designed-from-the-ground-up storage platforms. As businesses transform their datacenters to incorporate applications for Internet-enabled social- and

mobile-savvy users, they will no doubt find the capabilities of platforms like the Tintri VMstore appealing. By deploying solutions like VMstore, businesses can future-proof their datacenters. Buyers should recruit specific partners that are in a position to identify scenarios that suppliers, like Tintri, can address. They can target specific applications that can be virtualized as pilots, followed by a more robust rollout.

Suppliers like Tintri should continue to build out a complementary ecosystem that can address issues, such as backup, replication, deduplication, and compliance management, and leverage Tintri's VM-specific features that can handle these functions more capably than general-purpose arrays. Tintri should also expand its support for other virtualization environments. While VMware dominates the market today, hypervisors from Microsoft, Red Hat, and Oracle offer compelling alternatives. As the market diversifies, it will be important for suppliers like Tintri to be able to address the full virtualization market, especially as customers begin adopting multiple hypervisors and look for solutions that can work across heterogeneous environments.

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### Related Research

- *Nutanix Launches NX-1000/NX-6000 – Compustorage Platforms Extend into Storage* (IDC #lcUS24184213, June 2013)
- *Demystifying Software-Defined Storage* (IDC #WC20130530, June 2013)
- *Worldwide Storage and Virtualized x86 Environments 2013-2017 Forecast* (IDC #241210, May 2013)
- *TwinStrata Introduces CloudArray 4.5 with Disaster Recovery as a Service for Virtual Environments* (IDC #lcUS24134613, May 2013)
- *Microsoft's FY 3Q13 Earnings: A Balanced Portfolio Strategy Prevails* (IDC #lcUS24102213, May 2013)
- *Exablox Comes Out of Stealth Mode – Ushers in an Era of Purpose-Built Object Storage Platforms* (IDC #lcUS24083213, April 2013)
- *Brocade Launches Fabric Vision, Enhances Gen5 Portfolio – Tells the World Fibre Channel Is Still Hot* (IDC #lcUS24040813, March 2013)
- *Why Red Hat's Entry into Big Data Matters for the Enterprise* (IDC #lcUS23997213, March 2013)
- *Move Over SDS and SDN, Here Comes SDSN – Jeda Networks Announces a Software-Defined Storage Networking Solution* (IDC #lcUS23996313, March 2013)
- *Intel Assumes a Broader Role in Big Data Analytics* (IDC #lcUS23971413, February 2013)
- *Vision Solutions Launches Cloud Protection and Recovery* (IDC #lcUS23966513, February 2013)
- *NetApp Announces New All-Flash Storage Arrays EF540 and FlashRay* (IDC #lcUS23957913, February 2013)

- *VMware Acquires Virsto – Reaffirms Commitment to the Software-Defined Data Center* (IDC #lcUS23943813, February 2013)
- *Nimble Storage Races Past 1,000 Customers* (IDC #lcUS23926013, January 2013)
- *Storage Industry Transformation: Convergence, Cloud and Scale-Out* (IDC #WC20130129, January 2013)
- *Open Compute Summit IV – Storage Perspective* (IDC #lcUS23913113, January 2013)
- *New VMAX 10K Announced with Increased Hardware Performance and Ingenuity Enhancements Including QoS* (IDC #lcUS23907913, January 2013)
- *Coraid: Faith in Ethernet Is Paying Off* (IDC #238531, December 2012)
- *Scale-Out Meets Virtualization* (IDC #238534, December 2012)
- *PHD Virtual Simplifying Data Protection for Virtual Environments* (IDC #237501, October 2012)
- *Panzura: Leading the Charge on Global File Systems* (IDC #236947, September 2012)
- *SimpliVity – An All-in-One Solution for Virtual Environments* (IDC #236653, September 2012)
- *Buyer Insights: Storage in Virtualized x86 Environments* (IDC #236344, August 2012)
- *VMware – A Storage Solutions Provider?* (IDC #236239, July 2012)
- *VMware at a Crossroads* (IDC #lcUS23609312, July 2012)

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