

WILLIAM WOODS  
UNIVERSITY

William Woods University (WWU) is an independent, private university located in Fulton, Missouri. As a relatively small educational institution, WWU's IT team is required to do 'big things' on a very small technology budget. Robert Harrison is the server administrator for the University. He and twelve other IT team members are responsible for supporting the University's 350 faculty and staff, 1,000 undergraduate students, and 3,000 graduate students at both the main campus in Fulton and two satellite campus locations.

## The Challenge: Inadequate Performance for Virtual Server Environment

"We purchased our first Tintri VMstore T540 back in 2011 for our VDI deployment," noted Harrison. "We initially tried to deploy VDI on our existing EqualLogic systems, but the performance wasn't there. The latencies were far too high. The Dell systems were adequate for file storage and opening up MS Word docs, but we needed a higher performance storage system for our virtual desktops."

WWU's IT team tested six different storage platforms before they made the decision to purchase the Tintri VMstore T540 for the VDI deployment. The system performed flawlessly in that environment for over four years. According to Steven Goodson, WWU's network support manager responsible for the VDI environment, "VMstore simply revolutionizes performance at the desktop."

WWU replaced all of the Dell systems for the virtual desktops in 2011, but they were still relying on the EqualLogic systems for the VMware vSphere server environment four years later. "We virtualized almost all of our server environment using VMware vSphere," noted Harrison. "We still have a few physical servers in our data center, but the only reason those still exist is for a couple of applications that can't be virtualized. Even though we had already upgraded our VDI environment with the VMstore systems, we were still using the slow, inefficient Dell EqualLogic systems for our server infrastructure."

## The Solution: Tintri VMstore T540 and T850

Harrison started the search for a new storage system for the virtual server environment in January 2015 using the same Excel spreadsheet Goodson created for his VDI search. "All of the criteria for the 2011 search were still relevant for this evaluation," noted Harrison. "The spreadsheet calculates the weighted averages for thirty-two selection criteria, including latency, performance, manageability, and support. It compares the costs versus value of each feature. Some features may cost a little more initially, but over the years they may provide better value than the next competitor. We measured all of those things to determine the best choice for our new storage infrastructure."

"After reviewing the results of our study, we narrowed our decision down to two companies—Tegile and Tintri," noted Harrison. "The Tintri VMstore T540 had served us extremely well since 2011. That system was still running perfectly and was extremely simple to manage. During our search for the new solution for the server environment I asked Steven, 'When was the last time you logged into the VMstore interface for the VDI deployment?' His answer was, 'Why do I need to? It's running fine. Unless we're out of storage, there is nothing to think about. VMstore does all the work itself.'"

Harrison then made the decision to purchase the VMstore T850 system for WWU's virtual server environment. "Our University is known for pushing technology faster than many other educational institutions," he noted. "Steven picked VMstore back when it was 'out of stealth' for just one year for our VDI project. He took the plunge and made a great decision there. I was confident it would be the right choice for our server environment as well."

## Challenges

- Dell storage providing inadequate performance for virtual server environment
- Storage management and troubleshooting processes were complex, time-consuming, and inefficient

## Solution

- Tintri VMstore T850
- Tintri VMstore T540

## Results

- Dramatically simplified storage management
- Higher performance for virtual servers

Tintri  
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## The Result: Management Simplicity, Great Performance

The VMstore systems have been extremely easy to manage, according to Harrison. “I haven’t logged into the interface for at least three weeks,” he admitted. “That’s what I wanted out of my storage--and I was very clear about that when I talked to vendors. We run a very small-headcount IT shop compared to the amount of technology and work that we are required to perform. I manage the SAN, our phone system, the servers, and the MS Exchange infrastructure. I have been spending far too much time managing LUNs and volumes with the EqualLogic systems. That’s why we chose VMstore, to stop the LUN lunacy.”

“We now have sixty-five VMs on the server side and about 400 on the virtual desktop side,” noted Harrison. “Since we have two VMstore systems, Steven and I discussed load balancing the two workloads to improve performance. But there’s no reason to, since the T540 is still running great, even though we’ve grown so quickly. We started with less than 100 virtual desktops, and we now have over 400. Our original VMstore T540 just keeps on going no matter how hard we push it.”

The main William Woods web site—[www.williamwoods.edu](http://www.williamwoods.edu)—has also been moved to the new Tintri VMstore T850 system. “The web site pages are loading much faster now,” Harrison explained. “It’s a night and day difference since we moved to VMstore. That was one of the limiting factors with the older storage. We didn’t realize how much of an impact the newer systems would make until we finished the upgrade.”

The Tintri VMstore T850 system is also supporting a very large 9TB Windows file server for the University. “That’s a lot of storage for just one server,” admitted Harrison. “But the VMstore T850 doesn’t even blink an eye at that load. It performs beautifully, despite the massive size of that server.”

The feedback from end users after the move to Tintri VMstore has been very positive. “In IT, no news is good news,” Harrison concluded. “It means that everything is performing as expected or better. The best thing I can say about Tintri VMstore is that it makes my life much easier. Seriously, this is 2015. We shouldn’t be managing storage anymore.”

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*Robert Harrison, Server Administrator, William Woods University*

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