DAKTRONICS
Hybrid cloud infrastructure drives highly agile, productive, and innovative business

OVERVIEW
Daktronics is the industry leader in audio-visual signage systems including large-format LED video displays, message displays, scoreboards, digital billboards, and control systems in sport, business, and transportation applications. The company has more than 2,500 employees with corporate headquarters and a 775,000-square-foot main manufacturing facility in Brookings, South Dakota. Daktronics also operates facilities in Sioux Falls, South Dakota; Redwood Falls, Minnesota; Shanghai, China; and Belgium—with 50 regional offices around the world.

BUSINESS CHALLENGES
Daktronics is an engineering-centric company, with a large technical team focused on designing, testing, and deploying signage and display solutions at customer sites. With every complex and multi-site installation comes the requirement for customers to be able to manage their signage deployment. For instance, a customer that purchases 200 digital billboards and installs them across the U.S. needs an effective and centralized way to monitor and troubleshoot the systems and update their content.

For internal customers, the Daktronics IT group manages a business-critical engineering application including product lifecycle management (PLM). In addition, Daktronics relies heavily on Microsoft applications such as the Microsoft Office Suite with Microsoft Windows servers running Active Directory. Although Microsoft SQL Server is the company’s primary database application, Oracle databases support a production engineering system and a testing and development environment. Other critical applications include ERP, customer service, and CRM.

"Our challenges are much the same as any large enterprise IT organization—we need to continually provide everything our internal and external customers need with a limited budget and very limited resources," explains Rich Hintz, Vice President of Information Technology, Daktronics. "In particular, storage is a very large requirement for our engineers and manufacturing teams because they work with storage and processing-intensive applications such as CAD systems."

ESSENTIALS
Industry
Communications, media, and entertainment systems

Company Size
More than 2,500 employees

Business Challenges
• Storage and processing-intensive applications such as CAD systems required high performing storage
• Critical applications and databases required maximum uptime
• Company needed to provide external customers with a centralized system to manage their Daktronics deployments

Results
• Provided near 100-percent uptime for critical applications driving the business
• Reduced IT costs by 60 percent via Software as a Service
• Enabled IT to focus on innovation by reducing the need to maintain physical servers

REDEFINE
CUSTOMER PROFILE
SOLUTIONS
For its internal applications, Daktronics migrated to a private cloud infrastructure virtualized with VMware® vSphere® and running on the new EMC® VNX® unified storage series and EMC VMAX® enterprise storage. In addition, Daktronics deployed EMC Isilon® scale-out NAS to archive its file-based data. With this infrastructure, the Daktronics IT environment is now more than 95 percent virtualized with more than 500 virtual machines running on at least 50 hosts.

To support external customers, Daktronics has contracted with Cosentry, a cloud IT services provider and EMC partner, to provide a hybrid cloud Software as a Service (SaaS) offering. Subscribing customers are able to log into a single centralized system to manage and control their Daktronics deployments. The SaaS is powered by a VCE Vblock® infrastructure platform that includes VMware.

DRIVING CRITICAL INTERNAL APPLICATIONS
All of the SQL Server databases that run Daktronics' business-critical applications—from pipeline management and time tracking software to an application that supports the company’s entire business intelligence initiative—are now virtualized with VMware and have achieved near 100-percent uptime. Daktronics chose to consolidate storage for SQL Server and the Oracle test and development system onto a single VMAX array that enables virtual resources to be shifted between the two as required.

"By providing such a reliable, agile, and easy-to-scale environment, EMC and VMware enable our engineers to focus on what they do best—designing great solutions—without having to think about the technology underneath. That's why you'll see Daktronics installations in a large percentage of the sports arenas in the U.S."

Rich Simms
Vice President of Information Technology at Daktronics

"Virtualizing our Microsoft and Oracle environments using VMware with VMAX has delivered an extremely fast ROI by improving the quality of our data and empowering our users to make better decisions with business intelligence," Hintz says. "Also, downtime means lost revenue, but EMC storage gives us the reliability, performance, and assurance we need to operate at maximum efficiency and profitability."

EMPOWERING CUSTOMERS TO MANAGE COMPLEX NETWORKS
Hosted by Cosentry and running on the VCE Vblock infrastructure platform, the Daktronics’ SaaS solution enables its customers around the world to manage complex signage networks—some with thousands of displays.
From anywhere with an Internet connection, customers can log onto the system and view the health of the network and status of each display. With a few clicks, they can launch a new advertising campaign to hundreds of LED billboards across a wide area, or they can make changes to hundreds of digital traffic signs to inform drivers of an Amber alert. With both of these examples, customers can run detailed reports and analytics to show what is currently being displayed on each sign, and they can run diagnostics to troubleshoot problem displays.

A HYBRID CLOUD FOR A GROWING BUSINESS

Daktronics' EMC-driven hybrid cloud strategy delivers the scalability the company needs to grow rapidly and meet its customers' expanding requirements, but without the large CapEx outlay required to purchase and maintain physical hardware and software resources. In fact, Hintz estimates that Daktronics has been able to decrease its IT costs by more than 60 percent just with the customer-facing SaaS system, while at the same time the user base for the application has grown immensely.

AN AGILE IT INFRASTRUCTURE

As a result of its partnership with EMC and VMware, Daktronics is able to respond rapidly when new business opportunities and requirements present themselves. For instance, when an engineer calls in a request for a new development/testing server, the IT team can now provide same-day service.

"Previously, it might have taken at least a week to launch a new physical server or upgrade an existing one with all of the software, memory, processing, and storage needed to support the request. Now we can spin up a new virtual server in a matter of minutes," Hintz notes. "That means we can be faster to market with new solutions and more responsive to our customers that require new capabilities. EMC gives us agility and responsiveness that we simply didn't have a few years ago."

OPTIMIZING VALUABLE IT STAFF TIME

Daktronics’s IT team is empowered in two ways by the hybrid cloud environment. First, for the SaaS offering, many time-consuming management and administration tasks have now been outsourced to the service provider. Second, by virtualizing internal applications with VMware and running them on EMC storage, much of the hardware and software maintenance burden that IT dealt with in the physical server environment has been removed.

"Now that we've removed the distraction of day-to-day management of physical resources, our internal development and infrastructure teams can focus at the application level and concentrate on how we can increase the value for both internal and external customers," Simms remarks.

A BLUEPRINT FOR ONGOING INNOVATION

In a competitive and very technical industry, Daktronics has a reputation for offering some of the most leading-edge and innovative display solutions available.
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