

## AppSense U of Utah Case Study

### University of Utah Health Sciences Center Eliminates Security Risks with Better-Performing, Smaller Server Farm

#### Background

University of Utah Health Sciences Center (UUHSC), a leading health services institution since 1965, combines excellence in education, research and clinical care, to provide state-of-the-art care to over five million people in Utah and the surrounding states of Idaho, Nevada, Wyoming, Montana and New Mexico. Recognized as one of "America's Best Hospitals" for 11 years running by U.S. News & World Report, UUHSC relies on advanced information technology to enable its high-quality, award-winning healthcare.

#### The Challenge: Securing Crucial Systems While Improving Performance

UUHSC has a diverse base of 12,000 users comprised of clinicians and administrators. With more than 2,700 users concurrently accessing a Citrix-based network for everything from Epic and Cerner Millennium healthcare applications, to Microsoft Office and an array of financial packages, UUHSC's system was not only stressed, it was also highly vulnerable to security risks that could impair the hospital's operations.

- **Virus vulnerability.** In September 2005, UUHSC was hit with a worm that essentially brought its infrastructure to a halt. According to Josh Fleming, senior systems administrator at UUHSC, IT had to install the fixes and re-image 160 servers in order to fully destroy the worm and restore its systems. Citrix connectivity was severed, and access to the hospital's crucial applications was severely limited. It took UUHSC a full week to re-establish connectivity to their Citrix servers, and four weeks to restore its infrastructure back to an acceptable level. Eight months later, IT is still finishing the last of the clean up tasks. IT knew that it could not afford another virus hit.
- **User control.** With so many users, UUHSC's infrastructure is vulnerable to activities that, whether intentional or inadvertent, could corrupt the network. Controlling how each user interacts with its server-based applications was virtually impossible. As a result, IT spent much of its time troubleshooting problems that diverted their attention from more strategic initiatives.
- **Large, complex applications.** Much of UUHSC's user base relies on Epic and Cerner healthcare applications. These multi-gigabyte applications require a tremendous amount of memory. Each server could only support 30 concurrent users. IT was constantly challenged with improving the applications' performance. They could add more hardware to lessen the impact of user activity, but that would require additional capital expense and administrative overhead.

#### AppSense: Ensuring Endpoint Security in an Optimally-performing Network

UUHSC wanted to simplify management of its Citrix farm while providing users with better performance in a highly secure environment, without additional expense. AppSense provided the ideal solution. According to Josh Fleming, senior systems administrator, UUHSC, "AppSense has helped us in ways we hadn't even imagined. Security is no longer an issue. We reduced and simplified our server farms dramatically, and performance results exceeded our expectations. It's amazing."

Today, UUHSC leverages the capabilities of AppSense Application Manager and AppSense Performance Manager solutions to:

- **Eliminate security risks.** “Because of AppSense, we don’t even worry about viruses anymore. It’s just not on our radar screens,” said Fleming. With AppSense Application Manager’s proactive approach to security, spyware and malware simply cannot infiltrate the Citrix servers. It worked right out-of-the-box, enabling UUHSC to immediately benefit from a much more secure environment. End-user productivity is never affected by security issues, and IT never has to pull resources to fix infected systems.

UUHSC runs Trend-Micro anti-virus software as well. According to Fleming, “It’s reassuring to have virus definition software in the background, while knowing that AppSense totally stops any user input that could affect security.”

- **Reduce server farm, expenses.** “We’ve been able to add many more users on the farm without purchasing additional hardware—in fact, we reduced our server count and conserved power in the data center. Not only is AppSense saving us time and money in equipment, replacement and troubleshooting, it is increasing our ROI significantly,” Fleming added. Using AppSense, UUHSC increased user load on Cerner applications by 100% and on Epic by up to 70%. “Before, we were happy to get 30 users on a Cerner server. With Performance Manager and Application Manager, we’re approaching 70 users. We’re completely amazed.”

UUHSC is also running VMware with AppSense on several Citrix boxes. AppSense enables VMware to perform even better. UUHSC expects to get about 10-12 users per VM as opposed to the 5-6 they can handle without AppSense.

- **Improve application performance.** In the past, end-users often complained about slow application response time. Since implementing AppSense solutions, those complaints have disappeared. By optimizing server resources, IT is supplying users with much better performance, enhancing their productivity and their satisfaction.

#### **How it Works**

UUHSC began using AppSense Performance Manager in 2005 to improve performance of its mission-critical Citrix farm. Quickly impressed with the results and with AppSense’s commitment to servicing their needs—and needing a way to address their growing security concerns—IT implemented Application Manager in early 2006.

The UUHSC infrastructure consists of 180 Citrix Presentation Servers. Approximately 75% of them are HP blades BL 20 and 25s. All of UUHSC’s Citrix-based applications are protected and enhanced with AppSense solutions.

#### **Moving Forward**

UUHSC has also purchased and will soon implement AppSense Environment Manager. This will enable IT to control what users do to the systems, such as their interactions with registry keys, to reduce corruption possibilities even further, and will enable the system to self-heal back to a pre-determined state if and when needed. IT also expects Environment Manager will help it reduce, if not eliminate, the administrative costs and challenges with managing roaming profiles.

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