

Case study

WellSpan Health optimizes electronic medical record performance and reliability with AppSense



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William Gillespie
CIO, WellSpan



Challenges

- A necessary application needed to be implemented and upgraded to develop the inpatient clinical care records system. Unfortunately this application required more processing power and resources to run effectively on their Citrix servers.

Solution

- AppSense Performance Manager

Benefits

- Increased concurrent users by 100%
- Reducing server count by 20%
- Decrease client re-imaging to once a year.
- Saved up to 300MB of memory
- Slashed Cerner Millennium PowerChart access time to 10-12 seconds
- Increased resiliency of infrastructure by improved fail-over capabilities for Citrix servers

Background

WellSpan Health is an integrated health system that serves more than 650,000 people in south central Pennsylvania and northern Maryland. With more than 65 patient care sites, the organization is staffed by 8,000 physicians, employees, volunteers, board members and auxiliaries.

Migrating users to the Cerner Millennium PowerChart application without compromising performance

WellSpan staff had been using the Cerner Classic PowerChart Application as part of the organization's inpatient clinical care record for many years. As WellSpan implemented and increased the use of its Cerner Millennium Suite of applications, the end-user experience Citrix performance diminished significantly: Millennium requires a lot of processing power and resources to run on Citrix servers.

WellSpan clinicians were reluctant to migrate to the new Millennium PowerChart Application because they believed the response times were too slow when compared to Classic. WellSpan's IT department explored a variety of ways to enhance performance, including in-depth reviews of the Cerner hardware platform, the Citrix environment, and ways in which the application interacted with Citrix. Some of the changes proved beneficial, however, client-side response times were not reduced to the extent needed. Logon times with Millennium PowerChart ranged from 30 seconds to 90 seconds, an average of 20 seconds slower than Cerner Classic application response times. IT administrators calculated that this response lag was equivalent to adding 13 full-time employees (over 2,000 hours of staff time waiting at the computer and 106 hours of non-productive logon time every month).

WellSpan needed to eliminate any and all technical barriers to the clinicians' willingness to use the Millennium package. IT was directed to improve access performance - reduce it to 20 seconds maximum - and to ensure the infrastructure was resilient and responsive enough to scale to support the new robust package.

WellSpan's IT department invested heavily in a new infrastructure, including new HP1280 back-end servers, faster Citrix servers (Dual 3.2 GHz), and upgraded the operating system from Windows 2000 to 2003. Still, performance was not sufficiently improved. Cerner recommended that WellSpan consider using AppSense Performance Manager.

Improving Cerner performance while reducing server farm

Upon installing AppSense Performance Manager, WellSpan immediately optimized CPU and memory usage, and delivered faster, more reliable performance:

Logon times were lowered to under 20 seconds

AppSense helped significantly in achieving WellSpan's goal of access within 20 seconds. Users gained access to the Millennium PowerChart Application in just 10-12 seconds.

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“Providing a solid IT foundation for our e-CARE system is essential to our business. AppSense helps optimize our server environment, enabling us to get better performance with more concurrent users. It helps us provide the capabilities, performance and reliability our clinicians require.”

William Gillespie
CIO, WellSpan

Increased concurrent user count by 100%

WellSpan now has 60-80 concurrent users per Citrix server, with no performance degradation. This reliability was severely tested when an administrator error removed all but four servers from production, resulting in 340 users being spread across only four servers. Each server easily handled 85 users, significantly more than the 50 users per server previously recommended by Cerner. CPU on each server was 70-90% and, best of all, clinicians noticed no performance degradation.

Memory savings

WellSpan realized up to 300 Mb of memory savings per instance on its production servers with AppSense, enabling IT to support more users with less memory.

Server reduction.

WellSpan anticipates a 20% reduction in the number of servers required, due to the increased concurrent user counts. This will enable the IT department to manage the server farm more easily, efficiently and cost-effectively.

Improved business continuity with more fail-over servers.

Because the Citrix farm is blended and WellSpan requires fewer servers to support its applications and users, the IT department has more servers available for fail-over.

Moving forward

WellSpan fully expects to realize its projected 20% server reduction in the coming months. WellSpan's IT department is also evaluating AppSense security solutions, which would enable it to block unauthorized executables that gain access to servers and desktops, and self-heal systems back to a pre-determined state. WellSpan is now taking a much more proactive approach to security and the threat of malware and viruses that can severely compromise an organization. WellSpan's biggest challenge has now moved to the backend VMS application servers. WellSpan is in the planning process to move forward with a Millennium conversion to AIX. However, the Millennium Client on the Citrix servers will still use AppSense in order to continue meeting WellSpan's response time and performance objectives.

Technical overview

- 30 Citrix servers supporting 1,500 concurrent users, all of which are supported by AppSense Performance Manager.

About AppSense

We are the leading provider of user virtualization technology to enterprise organizations. User virtualization is a way of managing user-specific information independent of the desktop, and applying this information into any desktop (local install, virtualized, published, streamed etc) on-demand. This enables IT to standardize the desktop build, automate desktop and application delivery, and migrate users to new desktops – all while ensuring the user experience is seamless, personal, predictable and easily manageable.