EDS Tests Enterprise Health Performance with AppLoader

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— Valerie Cooper, Project Director, NCHIS, EDS

Background

EDS, an HP company, was selected to implement a new enterprise health system for the state of North Carolina. The large scale project entailed replacing an aging mainframe public health system with a statewide solution to improve quality of care for citizens, as well as save the state time and money in delivering and managing health services. At the core of the project is Netsmart's Avatar, a software package designed to automate clinical, financial, and management functions — including recording public health activities, billing Medicaid and Guarantors, and providing statewide reporting for policy makers and federal obligations.

Challenge

The new health system will serve 120 local agencies and approximately 3,000 users. Given the importance of the project to the welfare of North Carolina citizens and the state's ability to deliver and manage health services, it is critical that the software be able to support these 3,000 users simultaneously with little to no performance degradation.

The deployment plan entails a pilot stage involving a small number of counties, followed by successive waves where 10 counties are brought on board at a time. The state defined performance benchmarks and required that EDS demonstrate proof of performance at various load levels before progressing into the pilot stage and then each subsequent roll-out wave.

To measure performance, the state specified their preferred load testing solution. However, EDS quickly realized that this well-known load testing tool was unable to work with the Avatar software. Upon further analysis, the team discovered the load tester could be used, but only if a wrapper was developed around the healthcare application to interface with the load tester. Furthermore, this wrapper would need to be recreated with every new application version, creating a burden on the project.

"During our critical test periods in the lab, we're continually tweaking and optimizing the system. We're dealing with changes on a weekly basis," said Valerie Cooper, Project Director, NCHIS, EDS. "Having to rewrite a wrapper at this frequency would have added significant time, cost, and complexity to the project."

Solution

After researching alternative load testing solutions, EDS discovered that AppLoader from NRG Global was able to test their system directly AppLoader simulates actual end users to offer a true picture of end-to-end perspective from a real user's perspective. By testing an application from the end user perspective, AppLoader is protocol independent — thus giving EDS a load testing solution that worked directly with their Avatar software and others without requiring any wrappers, plug-ins, or additional integration work.

Customer profile

Company
EDS, an HP Company

Location
North Carolina Department of Health and Human Services

Industry
Healthcare

NRG Global solution
• AppLoader

Benefits
• Provided the necessary proof of performance to move a new enterprise health system into production.

• AppLoader was uniquely able to interface with the health system without any plug-ins or wrappers, significantly reducing development time and complexity.

> "AppLoader's unique ability to interface directly with our application was crucial, as the project schedule simply couldn't afford the delays associated with developing a wrapper and determining how other load testing solutions could interface with our system."
>
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Establishing a 'golden standard'
EDS created a test bed based out of ITS (Infrastructure Technology Support), a centralized support group for the state, and began testing the core functions of the Avatar application. The group tested in a production environment that would serve as a 'golden standard' for county implementations.

"Network infrastructure and connectivity are not standardized across the state, and as expected, some counties have better network builds than others," explained Cooper. "As a result, it was very important to understand application performance and establish a baseline. Then we could let each county know the performance levels they could expect once they achieved an optimal network infrastructure."

Comprehensive results pinpoint application issues
While testing core functions, the performance testing group identified areas of application slowness. As Cooper explained, "In some cases, we found response times way outside our expectations — some transactions were taking minutes when we were expecting seconds. Some areas showed problems even at low levels of load, and only got worse as we increased the load."

Fortunately, AppLoader helped identify whether issues were related to the application or network configuration, and provided comprehensive results that helped the application's vendor zone in on problem areas and modify the code when needed. AppLoader showed the team the response time for each specific transaction within each core function, as well as the fastest and slowest response times overall. All results can be provided as a CSV file to enable further calculations.

For example, the EDS team was able to view the difference between the slowest and fastest users in the system for any specific transaction or business process as load was increased. This helped them troubleshoot the cause of problems — as a big difference between slow and fast users would indicate the problem resulted from heavy traffic, while a small difference would indicate the problem was with the application (and not related to load).

Additionally, AppLoader showed how many failures occurred for each transaction, along with the type of failure. It automatically captured a screen shot of each failed transaction (along with front end logs) to provide detailed evidence to the vendor. AppLoader also gave detailed metrics, such as the number and types of processes generated on each server and even information about each CPU chip in multi-core CPU servers, to further help the EDS team pinpoint the source of problems.

Benefits
Today, EDS has successfully moved into the pilot deployment stage, and is continuing to test and refine application and infrastructure performance at peak load to roll out the app to the next wave of counties.

Cooper considers AppLoader crucial to the success of the project. "Load testing is absolutely essential. The state simply would not allow us to deploy the system to its counties until we could demonstrate the application and infrastructure can support it. And AppLoader is the vehicle to provide this proof. Without AppLoader's thorough testing, it simply would not have been possible for us to reach a 'Go' decision to put the system into production."

She continued, "Having been used to LoadRunner for many years, I was hesitant to move to a new tool; however, I have been impressed with AppLoader's results and reports. Furthermore, AppLoader's unique ability to interface directly with our application was crucial, as the project schedule simply couldn't afford the delays associated with developing a wrapper and determining how other load testing solutions could interface with our system."

About EDS

EDS, an HP company, is a leading global technology services provider delivering business solutions to its clients. EDS founded the information technology outsourcing industry nearly a half-century ago. Today, as a business unit of HP's Technology Solutions Group, EDS delivers one of the industry's broadest portfolios of information technology, applications and business process outsourcing services to clients in the manufacturing; financial services; healthcare; communications, media and entertainment; energy; transportation; and consumer and retail industries; and to governments around the world.

About NRG Global

NRG Global is a technology leader in availability monitoring and performance diagnostics of business applications and IT systems. We help companies maximize the performance and ensure the availability of their mission-critical applications. Founded in 2000, NRG Global is headquartered in Pasadena, California and is privately held. For more information about our company and products, please visit us on the Web at www.nrgglobal.com.

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