

Baseline

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Transforming IT with Integrated Monitoring

CHICAGO STATE UNIVERSITY IMPROVED IT QUALITY, EFFICIENCY AND RESPONSIVENESS BY ADOPTING AN INTEGRATED DATA CENTER MONITORING SOLUTION. CHICAGO STATE UNIVERSITY STARTED AS A SMALL TEACHERS COLLEGE AND IS NOW A FULL-FLEDGED STATE UNIVERSITY COMPOSED OF FIVE COLLEGES, SERVING MORE THAN 7,200 STUDENTS.

By Ce Cole Dillon

To support the school and its students, CSU's IT department runs a central data center consisting of HP and Cisco infrastructure connecting more than 150 Microsoft, Linux and Solaris servers. The data center also utilizes VMware and maintains a SAN. Beyond the data center, our infrastructure includes campus computing resources distributed among Health Sciences, Arts and Sciences, Business, Education, Pharmacy and an extended learning division. Key applications used across the university are email, web, Microsoft and a SunGard integrated collegiate administrative suite running on Oracle.

Everything from infrastructure to applications and from management tools to processes must be updated periodically to keep up with increasing demands. By 2009, we realized it was time to revitalize IT, and in 2010 the university was in the process of upgrading its IT infrastructure, building out virtualization and centralizing operations and support. One of the core challenges the CSU IT department faced was its disparate set of IT management tools. Rather than a cohesive management system, we were using a loose collection of popular IT management applications and open source utilities. We had not only outgrown this approach, we wanted to advance our infrastructure monitoring capabilities.

In early 2010, I worked with my director of network operations to investigate more advanced infrastructure monitoring solutions that included network analysis, systems management, virtualization management and application performance management. My objectives were to increase operational visibility and control, better leverage IT resources, and improve support response. Further, these objectives had to be met while staying within a constrained budget.

If these objectives could be met with a single management system, we could also increase the flexibility of our IT staff members, enable convergence of staff duties and facilitate collaboration to grow an even more efficient and effective team. This would not only contribute to improved staff satisfaction, it would help produce a higher return on investment for the project.

It turned out that integrated monitoring systems are available. We brought in five leading vendors to present their infrastructure monitoring platforms, choosing AccelOps for its comprehensiveness, usability, implementation and value. We can see that a more unified and integrated monitoring approach is now paying off for us across several critical scenarios:

Centralized Monitoring and Tool Consolidation – Before deploying our integrated platform, each department had its own favorite tools that focused on more elemental aspects of IT operations. Yet the IT team still had very limited centralized controls and lacked needed operational visibility. When a problem arose, a team from several departments would be pulled together to assess it using a variety of separate tools. This was inefficient, raised software license costs, and created more expense from tool-related support and maintenance, as well as training.

An integrated platform let us retire or migrate from as many as four categories of IT management applications, including network performance monitoring, system availability monitoring, network asset management and security management. We also added the capability to support virtualization management – as we are expanding our VMware implementation. Moving from our tool portfolio represented an estimated 25% capital savings, excluding savings with regards to reduced on-going training and maintenance costs.

Measuring Savings and ROI

Staff Savings – Addressing potential issues before they become problems is less expensive and enables us to deliver services to our faculty, administration and even students more effectively. Now we have the visibility and methods to proactively respond to potential issues; when real problems do arise, our team can more quickly understand the issue and apply appropriate resources for resolution. We estimate a savings of 30% in terms of work hours for my level 2 staff in managing IT operations that can now be applied elsewhere. This also adds to job enrichment.

Network and Application Monitoring – We now can see the current status of the entire distributed campus network, identify problems and can better understand the business impact of operational issues faster and with greater accuracy.

For example, our team was able to pinpoint and diagnose a configuration change to a switch that affected the VLAN associated with VOIP communications. This took less than fifteen minutes and the problem was resolved within an hour. Prior to the new system, several different teams would have had to review each component, from the help desk to network and applications, taking an estimated four hours on average to fully triage and resolve the condition. The result is a 75% efficiency gain while using fewer resources.

Network Asset Management and Configuration Monitoring – An automated Configuration Management Database (CMDB) feature provided us a real-time view of the environment with accurate topology maps, assets and respective configuration monitoring. Now the team can produce hardware and software inventory true-ups and associate shared and unique assets to different departments. We can also track and validate applied patches, and see the operational impact of those changes.

It could take at least three IT staff members 15% or more of their time to enable on-going maintenance with regard to asset management and system integrity. The CMDB feature enables us to accomplish this in an automated fashion, receive alerts about changes, plan

for further virtualization, and document inventory using fewer resources -- saving almost half a full time equivalent.

Security Monitoring – We rely on typical security assets such as firewalls, DMZs and anti-virus software. Like any educational institution, CSU has a variety of users accessing the IT environment. While my team had the ability to collect and analyze audit logs manually, we did not have needed automation to analyze the security data and correlate it with other systems. We addressed this gap, as our new software included security and log management.

Service Monitoring – We were able to implement the platform in a short time and we have been expanding its use. While providing more integrated infrastructure monitoring, we are beginning to define IT business services, an automated capability of the software, to transition to service-oriented management. We have started to map out our ERP application and infrastructure dependencies. I anticipate further tracking of IT services and being able to more proactively identify threats and problems that can impact service delivery.

Our IT organization continues to improve quality and efficiency. This can and should be a never-ending journey to advance people, process and tools. While some training was required to leverage all the capabilities of the platform, we estimate a payback in less than one year and an overall cost of ownership reduction of IT management tools by 25% with significantly more capability.

Rather than relying on a disparate set of IT management utilities, we are moving forward with integrated IT monitoring. This provides us needed operational visibility and control, better leveraged IT resources and improved responsiveness as we upgrade our IT infrastructure, build out virtualization and centralize operations and support.

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