GROUNDWORK OPEN SOURCE

CASE STUDY: UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

GroundWork Monitor *Professional* Grades Every Aspect of IT Delivery

CHALLENGES

- Lack of visibility into extremely diverse IT infrastructure created potential for system problems to spiral out of control
- IT outages could threaten the studies, research and work of 25,000 students and faculty
- Budget constraints, implementation time and long-term cost of ownership issues ruled out proprietary enterprise IT monitoring systems

SOLUTION

- GroundWork Monitor *Professional*™ provides comprehensive views into the operation of system components, including servers running numerous operating systems and various storage systems—all of which allows comprehensive monitoring of critical IT services, such as e-mail, data storage, intranets, databases and enterprise resource planning software

RESULTS

- The number of IT outages is substantially reduced, giving users uninterrupted access to critical IT services
- The ability to quickly pinpoint problems and potential outages before they occur reduces time and expense in fixing problems
- The flexibility of GroundWork Monitor *Professional* enables the IT staff to automate fixes, which improves IT productivity
- GroundWork Monitor *Professional* annual subscription and related consulting fees are one-eighth the cost of proprietary monitoring tools considered by UNCC

INTRODUCTION

The University of North Carolina at Charlotte (UNCC) is known for embracing technology for the sake of its 21,000 students pursuing undergraduate and graduate degrees. In 1983, UNCC became the first university in the United States with an electronic index to materials in its library, and for the last 10 years the school has offered numerous degree programs through online distance learning courses.

This commitment to using technology manifests itself in a highly connected staff and student body. Through the 49er Express portal, approximately 25,000 users have immediate access to information and services critical to scholarship, teaching and administration. The portal provides each student with e-mail and storage, as well as access to course information, grades, registration, financial assistance and digital library collections. Other IT systems include departmental intranets, databases for administrative records and enterprise resource planning software.

IT SERVICES HIT THE SOPHOMORE SLUMP

Until recently, the inability to see developing problems in this mixed and growing IT infrastructure often led to system outages. Sometimes only certain applications were affected. At other times, depending on the nature of the problem, multiple systems were affected. In either case, the IT staff at UNCC would spend hours researching the problem and restoring services.

And, according to Tom Lamb, CTO at UNCC, it was difficult to pinpoint and prevent costly security problems before they spread throughout the university IT infrastructure.

To address the issues affecting system availability to users, Lamb and his colleagues decided to install a comprehensive IT infrastructure monitoring system. In the short term, the system would detect problems with the 137 servers hosting IT services at UNCC (a combination of Linux, Solaris, UNIX, NetWare and Windows operating systems). Similar monitoring would address problems within the storage infrastructure—a diverse 20 TB ecosystem of storage-attached networks, network-attached storage and direct-attached storage.

Over time, Lamb wanted to expand the monitoring system to every aspect of the IT environment—everything from individual instances of applications to overall performance. Additionally, the monitoring system would need to be flexible enough to allow customizable views of the growing UNCC computing environment, so IT staff could ensure consistent delivery of new IT services.

PROPRIETARY SYSTEMS FAIL TO MAKE THE GRADE

Everything pointed to purchasing an enterprise-class monitoring system, so Lamb and his staff initially considered Hewlett-Packard OpenView and Compuware Vantage. Both of these monitoring systems provide extensive views of system components with intuitive dashboard interfaces. However, says Lamb, the cost of purchasing, deploying and scaling either system was beyond the reach of the UNCC IT budget.

"The initial licensing fees for both OpenView and Vantage were in the hundreds of thousands of dollars and simply far beyond what our budget would allow," Lamb says. "To get the customized dashboards we wanted, we would have incurred additional consulting fees—the enterprise license agreements did not allow our staff to customize these systems. And when we talked about scalability with these vendors, the overall price tags began to approach the million-dollar mark."

GROUNDWORK PASSES THE IT ENTRANCE EXAM WITH FLYING COLORS

Because the UNCC IT staff had some experience using open source operating systems and applications, Lamb decided to investigate open source monitoring software. According to Lamb, GroundWork Monitor *Professional* was the only open source monitoring system that had all the attributes IT staff needed to watch over university-wide computing services.

"GroundWork Monitor *Professional* provides complete visibility and monitoring of our IT infrastructure comparable to OpenView and Vantage," Lamb says. "In addition to views of overall system performance, the software provides real-time status views and reports covering systems critical for our users."

These real-time views allow IT staff to immediately find and fix the sources of problems that affect service levels to users. Color-coded displays identify components in need of attention, while historical details about components within the IT infrastructure can be accessed immediately. And to further ensure constant system availability, alarms alert IT staff about potential and developing problems.

"We were impressed with the reliability of GroundWork Monitor *Professional*," says Lamb. "GroundWork uses Web 2.0 technologies such as AJAX, so presentations of information constantly refresh without users being required to initiate screen actions. Plus, features such as the GroundWork High Availability Server provide built-in redundancy so the monitoring tools themselves are always available."

The ability to easily customize GroundWork Monitor *Professional* reduces the amount of time IT staff needs to devote to fixing problems, Lamb says. Because the software is open source, administrators can change and reconfigure any feature as desired. Open application program interfaces for views, alerts and summaries are completely customizable. This allows system administrators to create automated actions rather than addressing each problem manually.

Even with all its visibility, reliability and flexibility, GroundWork Monitor *Professional* is far more affordable than other IT monitoring systems. Lamb explains, "With GroundWork, the subscription and consulting services together cost us one-tenth the price of competing systems, which would have easily been in the million-dollar ballpark." GroundWork is sold as a yearly subscription, and includes all upgrades during this annual period.

IT SERVICES GRADUATE TO 24/7 AVAILABILITY

"Each step of the deployment process was very quick," Lamb says. "With the assistance of the GroundWork professional services team, our IT staff set up complete monitoring capabilities for all of the university's servers, storage devices and networks in a matter of a few weeks. The short installation time was possible because our IT staff could customize views through a Web interface—a much faster process than the traditional method of editing configuration files."

With the GroundWork system managing the essentials of the UNCC IT infrastructure, Lamb says that unexpected service outages have been significantly reduced. "Right after implementation, we immediately saw a 15 percent improvement in uptime—and this availability just keeps growing," he says. "The dramatic increases in system availability are largely because IT staff can now address problems within minutes instead of hours."

Additionally, Lamb says the monitoring software has allowed IT staff to head off a number of problems with the potential to cost as much as the price of the GroundWork system. "We are not only providing our users with greater uptime, we are also saving the university money."

To help ensure even greater IT stability, the UNCC IT staff is now extending the GroundWork monitoring software to keep tabs on more infrastructure components, such as security systems and applications. According to Lamb, this top-to-bottom visibility will allow campus IT staff to maintain high levels of service to users, regardless of how much the UNCC network grows.

"As we move forward to include applications in our monitoring, we expect to have uninterrupted uptime throughout our entire IT environment," he says. "With the affordability and configurability of GroundWork Monitor *Professional*, our IT people can spend their time providing better services to users instead of reacting to emergencies. All of this represents another chapter in how UNCC embraces technology for the sake of education."

ABOUT GROUNDWORK

San Francisco-based GroundWork Open Source, Inc. is the leader in the fast-growth market for open source IT operations management software. The company unifies leading open source software to deliver comprehensive IT operations management solutions. With GroundWork solutions, enterprises leverage the flexibility and low cost of open source tools to achieve enterprise-level availability, performance and operational efficiency at a fraction of the cost of commercial software. GroundWork customers represent a variety of industries, including education, financial services, government, manufacturing and high technology. GroundWork investors are Mayfield and Canaan Partners.

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