



GroundWork Monitor *Professional* Makes IT Oversight Scientific

CHALLENGES

- Developer of complex biology interaction modeling software needed to protect IT investment with comprehensive IT systems and network monitoring
- Capacity planning was key to company success, yet hindered by lack of visibility into specific IT infrastructure components
- OpenNMS network monitoring tool and homegrown scripts were incapable of providing comprehensive system visibility
- Proprietary monitoring packages were either too expensive or did not include enough features

SOLUTION

- GroundWork Monitor *Professional*[™] oversees every aspect of a complex IT infrastructure, which holds 25 TB of data in a storage area network (SAN) consisting of EMC storage arrays and hundreds of Linux and UNIX servers responsible for a massive biological modeling library, along with various Web applications, office productivity suites and software developments tools; other IT infrastructure components overseen by GroundWork Monitor *Professional* include network connections, routers, switches and firewalls

RESULTS

- Performance statistics ensure less downtime and better capacity planning
- Advanced alert capabilities prioritize problems and deliver around-the-clock information access
- Open source licensing provides total ownership of software
- Spending is held down, because GroundWork Monitor *Professional* subscription is one tenth the cost of proprietary monitoring packages

Unique information critical to pharmaceutical, genetic and biological research drives customers to Ingenuity Systems, Inc. The company owns the world's largest database of curated biology connections—millions of models that show interactions between proteins, genes, complexes, cells, drugs and tissues. Ingenuity is also known for its groundbreaking software offerings, which let researchers quickly identify the biological processes most relevant to their work.

"A substantial IT investment is largely responsible for our ability to provide around-the-clock information to subscribers of our biological model library, as well as our ability to develop new software products," says Richard Farley, director of IT at Ingenuity. "But as recently as a few months ago, our ability to monitor this complex computing ecosystem was confined to systemwide views. As our IT infrastructure grew more complex, the potential for problems within the system increased. Since we could not examine the inner workings of servers, network devices, routers and storage arrays, it became increasingly difficult to make capacity plans and prevent downtime."

INGENUITY SEARCHES FOR EXTENSIVE MONITORING CAPABILITIES

The Ingenuity IT environment holds 25 TB of data in a SAN consisting of EMC storage arrays along with hundreds of Linux and UNIX servers responsible for various Web applications, office productivity tools and software development tools—as well as the company's biological interaction database. Other IT infrastructure components that require monitoring include network connections, routers, switches and firewalls.

For several years, Farley and his staff had used the stand-alone, open source OpenNMS tool to keep tabs on the Ingenuity IT environment. But this software application, Farley says, did not include

capabilities to track individual infrastructure components. The Ingenuity IT staff made up for these shortfalls by writing a variety of homegrown scripts—as well as manually checking servers and network connections for problems. "It was like trying to map the human genome with a magnifying glass," Farley recalls. "But due to our diligence, downtime has not been a problem for us—and we want to keep it that way," he says.

"We needed to find a way to peer into individual IT components so we can find, prevent and repair bottlenecks that can slow our operations," Farley says. "Continuing to write homegrown scripts to support a tool with limited functionality and a rudimentary system of alerts was taking too much of our time—and exposing our IT investment to downtime. Yet proprietary monitoring systems with the functionality we required were too expensive—and affordable proprietary packages did not provide enough functionality."

Additionally, proprietary systems come with modification restrictions—and Farley says that he wanted a monitoring package that could be modified to meet requirements particular to Ingenuity.

GROUNDWORK PROVIDES THE MODEL FOR MONITORING COMPLEX IT ENVIRONMENTS

After reading reviews about GroundWork Open Source, Farley investigated the feasibility of installing GroundWork Monitor *Professional* in the Ingenuity IT infrastructure. "GroundWork has packaged hundreds of open source monitoring tools in an enterprise software suite that provides all the features we wanted from a high-end proprietary system—but the price of the GroundWork package is many times less than the cost of a low-end proprietary package. The annual fee for the initial software download, ongoing support and updates was well within my purchasing authority, so I bought an annual subscription to the monitoring package."

Installation was quick and required no outside assistance. “Within a couple of days we had systemwide monitoring,” says Farley. “After the course of a few months, we had all our hardware devices monitored, along with alert and alarm thresholds for both our production and development systems.”

GROUNDWORK MONITOR PROFESSIONAL PUTS IT INFRASTRUCTURE UNDER THE MICROSCOPE

With the GroundWork software suite in place, Farley says Ingenuity’s IT staff uses the performance statistics features of the package so Ingenuity can continuously meet the demands of database customers—as well as in-house software developers and administrative staff. “We can immediately spot any bottlenecks with GroundWork Monitor *Professional* and act accordingly,” he says. “Plus, these in-depth performance statistics allow us to plan intelligently for capacity needs.”

Other features, such as monitoring individual hosts and groups of hosts, allow Ingenuity systems administrators to quickly identify and repair servers and networking devices—before component-level issues affect the entire IT infrastructure.

The alert and event escalation mechanisms of GroundWork Monitor *Professional* also help keep the Ingenuity IT infrastructure up and running continuously. “GroundWork Monitor *Professional* prioritizes IT problems,” Farley says. “Unlike OpenNMS and many other stand-alone open source tools, alarms and alerts included with GroundWork Monitor *Professional* are not set off when a single redundant application server—whose functions can be picked up by other servers—goes down. Instead, GroundWork Monitor *Professional* follows the alerting policies we set up, so we can immediately discover if multiple servers or clusters of servers are in danger.”

“Before we installed GroundWork Monitor *Professional*, we used the OpenNMS tool to monitor the health of our IT investment—which was like trying to map the human genome with a magnifying glass. But with the GroundWork software suite, we have all the tools we need to keep our services and operations running around the clock.”

—Richard Farley, Director of IT, Ingenuity

Around-the-clock customer access to the Ingenuity modeling database is also made possible through advanced alerting capabilities that find the appropriate systems administrator at any time. Critically important alerts, along with alarms that signify developing problems, are sent to administrators on call via SMS to cell phones and handheld devices.

Plus, Farley says the GroundWork Monitor *Professional* GUI makes monitoring more reliable and less expensive. “Color-coded screens with real-time status views make viewing system performance intuitive,” he says. “And unlike complex command-line monitoring software, the interfaces in the GroundWork software suite make it easy to train less experienced technical staff for many monitoring functions. This frees more experienced staff to concentrate on technically complex repairs and maintenance services.”

OPEN SOURCE LICENSING PROVIDES LONG-TERM IT INVESTMENT PROTECTION

According to Farley, the open source licensing of GroundWork Monitor *Professional* provides Ingenuity with complete ownership of its monitoring tools—both now and in the future. “We gained immediate results with the GroundWork software suite right out of the box—yet we were also able to make unique configuration changes simply not possible with other enterprise-class monitoring tools,” he says. “As our company grows, we look forward to using GroundWork tools to monitor unique information at multiple sites—without paying any site licenses to protect our IT investment.”

ABOUT GROUNDWORK

San Francisco-based GroundWork Open Source, Inc., is the leader in the fast-growth market for open source systems and network management software. The company unifies leading open source projects into a complete software solution for monitoring and managing the performance and availability of the entire IT infrastructure across Linux, UNIX, Windows and NetWare platforms at a fraction of the cost of traditional software. Thousands of system administrators across hundreds of organizations worldwide have downloaded and deployed GroundWork products to monitor and manage the performance and availability of over 1,000,000 servers and network devices. GroundWork customers represent a variety of industries, including education, financial services, government, manufacturing and high technology. The company is privately held, with investments from Mayfield and Canaan Partners.

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