

Benefits

GroundWork Monitor unifies open source components into an IT monitoring suite that offers the breadth, depth and robustness that a University environment demands at a fraction of the cost.

Benefits include:

- **Enterprise Grade:** features, capacity, and stability at a fraction of the cost.
- **Frame Work Architecture:** virtually unlimited extensibility.
- **Based on Robust, Widely Used Open Source Code:** no expensive vendor lock-in.
- **Existing Widespread Use in Academia:** lets you leverage familiarity for fast deployment, fast enhancements.

“GroundWork Monitor Professional provides complete visibility and monitoring of our IT infrastructure... 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.”

Tom Lamb
CTO, UNCC

EXECUTIVE SUMMARY

GroundWork Monitor is the fastest, easiest, least expensive way for Universities and other academic and research institutions to implement world-class IT monitoring. Almost all the open source components of GroundWork Monitor, had their beginnings as academic projects, so it makes sense that they'd be a natural fit for university and research environments. But up to now they've only been available as stand-alone packages: GroundWork Monitor unifies those projects, adding integration, backing, and support on par with expensive, proprietary alternatives.

INTRODUCTION

University IT environments are as large, complex and demanding as conventional corporate IT environments, yet have fewer resources—money, staff and time—to deal with those environments. Compounded with the disparate demands of numerous constituencies and the incessant, unforgiving deadlines of the academic calendar, University IT managers have to walk a fine balance between providing reliable computing while managing costs.

GroundWork Monitor is the perfect IT monitoring solution for Universities and other academic institutions. The open source sub-components of GroundWork Monitor had their beginnings as academic projects, so it makes sense that they'd be a natural fit for that environment.

WHY CHOOSE GROUNDWORK MONITOR?

- **Low Cost:** GroundWork Monitor has the world class features and capacity of the large, proprietary alternatives, but at a fraction of the cost.
- **Simplified Pricing and Licensing:** Proprietary alternatives typically charge by the node, GroundWork Monitor's subscription is flat-fee priced, including support, maintenance and upgrades;

GroundWork Monitor's open source-based licensing means minimal licensing overhead, simplified license audits.

- **Leverages existing infrastructure and skills:** chances are good that many of the open source packages in GroundWork Monitor are already in use around your institution; you can bring in existing configurations and consolidate them under GroundWork Monitor's console.
- **Take full advantage of any on-site computing resources:** GroundWork Monitor's open source code means you can customize the code on your own if need be.

IT MONITORING

WHAT TO CONSIDER

When choosing your IT monitoring solution, consider your needs based on the parameters in Table 1.

OPERATIONAL CONSIDERATIONS

As with any computer system, the successful design of a University monitoring system recognizes that human operators can contribute significantly to the success of a project. Here are a few important factors to consider:

ALARM FATIGUE

Getting paged in the middle of the night to respond to false alarms is tiring to staff and reduces responsiveness to real problems. There are a number of ways to minimize the critical alarms including:

- 1) automatic alarm verification
- 2) automatic restarts (event handlers)
- 3) priority-based notifications
- 4) escalation intervals adjusted for time of day
- 5) “follow-the-sun” techniques
- 6) disabling of alarm channels during planned maintenance

Alarms should be enabled selectively: not all monitoring channels require alarms, and many should result in email-only notifications.

CALIBRATION APPROACH

The set points for many alarms are affected by network propagation rates and typical variations of these rates. Set points should be determined by setting the alarms high and calibrating down rather than the other way around. This will allow the system to detect hard failures while avoiding nuisance alarms. This is particularly important during the initial days of installation.

WEB ACCESS

The monitoring system must permit responding personnel to have remote web access to minimize inconvenience associated with after hours support.

CHANGE MANAGEMENT

Manage the change in expectations for IT employee performance during the design process with good project management techniques.

CASE STUDY

UNIVERSITY OF NORTH CAROLINA, CHARLOTTE (UNCC)

The University of North Carolina, Charlotte (UNCC) is one of many Universities relying on GroundWork Monitor, where it was chosen over expensive commercial applications from HP and Compuware. “The initial licensing fees for both OpenView (HP) and Vantage (Compuware) were in the hundreds of thousands of dollars and simply far beyond what our budget would allow,” Says Tom Lamb, CTO at UNCC. “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

TABLE 1: Issues impacting monitoring systems design and strategy

Key Infrastructure Issue	Implication for Monitoring System
Infrastructure size and complexity	For large infrastructures, simpler solutions will keep the cost of changes at predictable levels. Consider de-centralizing monitoring hosts and system management responsibility.
Cost of Outages	The higher the cost of outages, the more should be invested in additional monitors (capable of detecting failures) to avoid them.
Redundancy and diversity of infrastructure components	More monitors are justified to ensure that the “b channel” components are available before failover.
Expected rate of network and system change	The higher the rate, the simpler the monitoring configuration should be. Ensure that additions, changes & deletions can be made as easily.
Size and experience of staff tasked with analyzing monitoring output data	Ensure that all relevant monitoring data is included in reports, but not necessarily linked to alarms. Understand how reports will be used before developing them.
Support staff availability	Stable systems require fewer monitors and paradoxically, enable more sophisticated monitoring systems.
Heterogeneity of equipment and software	24/7 NOC/Help Desk support permits dramatically simpler monitoring vs. pager-based.

overall price tags began to approach the million-dollar mark.”

“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.”

“Each step of the deployment process was very quick,” says Lamb. “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.” “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.

CONCLUSION

University Information Technology professionals achieve significantly greater business benefits from monitoring, including higher application availability, higher employee productivity, and lower IT capital and operating costs by deploying GroundWork Monitor.

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