WHITE PAPER

Application Monitoring for On-premises, Hybrid, and Multi-cloud Environments

solarwinds government

Introduction

Applications live everywhere within government and education organizations—on-premises, in the cloud (AWS®/GovCloud, Azure®, Google®, Cloud.gov), or in some combination of these. Yet, no matter where your applications live, they still need to be monitored for performance and optimization.

How can you successfully monitor all your applications, no matter where they are?

Let's look first at the application monitoring challenges organizations face, then at how government and education IT pros can overcome these challenges with one integrated solution.

MONITORING CHALLENGES

First and foremost, the greatest challenge is monitoring applications across a range of platforms and locations. Yet, there are a slew of additional challenges that government and education IT pros face every day.

Visibility, control, and access

In today's environments, the machines that house applications can be almost anywhere—in an office, in the local data center, across town in another office location, on another base or campus, or within a cloud. How do you monitor all these machines?

Yes, there are a wide range of consoles that provide information on each type of machine—as well as consoles offered by cloud providers—but the last thing a government or education IT pro wants to do is log into multiple consoles and get all the different sets of information. Factor in the console offered by the cloud provider, and things can get downright unwieldy.

And what about the virtual environment? No government or education IT pro wants to buy a virtual management tool to manage that environment as well as a physical monitoring tool to monitor in-house machines. The goal is to get all that application monitoring information in one place, the proverbial single pane of glass.

Understanding dependencies

Every government or education IT pro knows that nothing exists in a vacuum; simply monitoring servers and applications does not provide the whole picture, especially when it comes to performance optimization.

If something's running slowly, it may be the virtual environment, or the underlying database, or the storage device. It's never a matter of "let's look at Server A to see how it's running." There are a multitude of interdependencies in every environment, and multiple sources must be considered to find a problem or increase performance. In fact, those dependencies go several layers deep

if one considers application processes, services, and components; and this doesn't even take into consideration containers and other evolving technologies.

Multi-cloud environments

Some organizations are not comfortable trusting one provider with all their cloud data. For the sake of the proverbial "not putting all your eggs in one basket," many break up their data among multiple cloud providers. While the security and disaster-prevention efforts are undeniable, this adds to the monitoring challenge. Monitoring cloud data and applications can be challenging enough; how does the government and education IT pro successfully manage data and cloud applications across multiple providers?

Baselining

One of the primary potential advantages of moving applications to a cloud environment is improved performance. Yet, to know if you're actually getting better performance, you must have a current performance baseline. In fact, there are a multitude of advantages in having a performance baseline, so the government and education IT pro is always aware where performance anomalies stand relative to ordinary, day-to-day performance.

WELCOME TO SERVER & APPLICATION MONITOR (SAM)

How can you successfully monitor applications—no matter where they are—AND solve all of the above challenges? The answer is SolarWinds® Server & Application Monitor, or SAM. In a nutshell, SAM monitors any application and any server, any place within your organization's environment where those applications and servers reside.

SAM starts out by automatically discovering all applications and servers that are part of the environment, then begins monitoring those servers and applications. SAM does this by using a range of polling methods that are not specific to an application's location. For example, SAM uses WMI for Windows® and SNMP for Unix, Linux®, and Mac®; the government and education IT pro can install agents within the server for Windows, Unix, and Linux; and SAM integrates performance data for cloud-based applications via AWS and Azure APIs.

Once everything has been discovered, SAM does a lot more than simple monitoring. SAM provides:

- Availability monitoring
- Performance monitoring
- Intelligent alerts
- Environment dependency mapping
- Root cause analysis

- Capacity planning
- Troubleshooting tools
- Custom scripts execution
- Automated reports

WHAT MAKES SAM UNIQUE?

There are many, many application monitoring solutions government and education IT pros can choose to monitor their environment. That said, SAM goes beyond most other solutions to provide unique advantages.

TEMPLATES

SAM comes with more than 1,200 application performance templates, out of the box, such as Active Directory®, Java®, XenApp®, IBM® WebSphere®, Skype®, Office 365® email, and more. SAM also comes with in-depth application monitoring dashboards for Microsoft® Exchange®, Microsoft IIS™, and SQL Server®.

Have homegrown applications? Not a problem. SAM can easily monitor in-house or custom-built applications, for which government and education IT pros can then build alerts, so all applications are included in the alerting process.

CLOUD INFRASTRUCTURE MONITORING

Many organizations are understandably concerned about losing control of the infrastructure in a cloud environment. SAM provides the ability to monitor the Infrastructure as a Service (IaaS) environment for both the Amazon AWS and Microsoft Azure cloud. SAM also provides end-to-end system performance and application monitoring capabilities using agent-based and agentless technologies that provide application and system metrics.

Multiple cloud environments? SAM can monitor across multiple data centers, remote locations, and other cloud providers, such as private or hybrid cloud deployments.

MORE THAN JUST APPLICATION AND SERVER MONITORING

Seasoned government and education IT pros know that successful performance monitoring involves far more than simply looking at applications and servers. As we discussed earlier, nothing exists in a vacuum.

SAM provides customizable maps that let the IT team create logical application groups, and also helps the team visualize cross-server communication and application dependencies. Users can then map infrastructure dependencies to get a complete picture, which can help quickly identify the root cause of application performance slowdowns.

If you invest in SAM, you have the added value provided through AppStack™—a built-in feature that visualizes the relationships and dependencies between applications and the supporting infrastructure to help identify the root cause of application problems. SAM users also have the advantage of PerfStack™, a built-in analytics dashboard that correlates and charts system monitoring metrics for advanced troubleshooting.

Additional unique features of SAM include the ability to:

- Monitor server storage volumes, disk usage, and capacity metrics
- Monitor the health and availability of virtual hosts and guests alongside physical servers
- Automatically discover and help remotely manage hardware and software asset information on all servers and workstations

UNIFIED VIEW: THE ORION® PLATFORM

As we've already discussed, SAM can monitor applications on-premises, in a hybrid environment, or in a cloud—or multi-cloud—environment. One of the primary advantages and unique features of SAM is the ability to see all this application performance information through a single, unified view.

SAM is part of the Orion Platform. Orion integrates a broad range of SolarWinds systems and network monitoring applications into a single unified system, allowing organizations to monitor, visualize, and analyze the performance of networks, applications, systems, and databases on-prem, in a hybrid environment, or in the cloud. Case in point: government and education IT pros can use Database Performance Analyzer (DPA) to monitor associated databases and Network Performance Monitor (NPM) to visualize critical paths with NetPath™ to improve performance.

And, because the Orion platform supports multiple applications, it provides centralized management across all "plugged-in" applications.

CONCLUSION

As computing environments get more complex, and more widespread—particularly across multiple cloud providers—monitoring and optimizing performance can seem daunting. With SAM, government and education IT pros can feel confident in the ability to monitor a range of applications, servers, and additional aspects of the environment, and optimize performance no matter where any of those applications or devices are located.

Add in the ability to centrally monitor and manage everything, and the government and education IT pro has the proverbial "win-win" solution with SAM.

ABOUT SOLARWINDS®

SolarWinds (NYSE: SWI) provides powerful and affordable IT management software to customers worldwide from Fortune 500® enterprises to governments including nearly every U.S. civilian agency, DoD branch, and intelligence agency, as well as a large number of state and local government, education, National Health Service, European Parliament, NATO customers as well. In all market areas, the SolarWinds approach is consistent—focusing exclusively on IT pros and striving to eliminate the complexity that they have been forced to accept from traditional enterprise software vendors. SolarWinds delivers on this commitment with unexpected simplicity through products that are easy to find, buy, use, and maintain while providing the power to address any IT management problem on any scale. Each solution is rooted in the company's deep connection to their user base, which interacts in an online community, THWACK®, to solve problems, share technology and best practices, and directly participate in the product development process.

SolarWinds provides IT management and monitoring solutions to numerous common public sector IT challenges including continuous monitoring, cybersecurity, network operations, compliance, IT consolidation, data center operations, cloud computing, mobile workforce and devices, DevOps, and scaling to the enterprise. SolarWinds software is available through numerous channel partners and systems integrators worldwide as well as the U.S. General Services Administration (GSA®) Schedule, United Nations Global Marketplace (UNGM), Crown Commercial Service (CCS), and United Nations Atlas.

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