IDERA® | Uptime Infrastructure Monitor Whitepaper

The 5 New Realities of Server Monitoring

How to Maximize Virtual Performance, Availability & Capacity... Cost Effectively.

Server monitoring has never been more critical. Today, your servers are a vital cog in the IT machine, a machine that increasingly represents the core of your business. Whether a server's used for email, e-commerce or ERP, downtime is not an option. The effective monitoring of servers is essential to ensure your business and its applications are running. If you're responsible for the performance and availability, as well as maintenance, of these servers, your job is tough and getting more complex every day.

Many server monitoring solutions on the market today are big, complex and expensive, or are a cobbled-together mess of point tools and low-end modules that have narrow or limited functionality and no unified view of IT. That can make finding a server monitoring solution that fits your needs difficult. The key is to understand the needs of your IT environment (both today and in the future) and then select a unified tool that meets those requirements.

This short guide will review the "5 New Realities" of server monitoring and will help you better understand the available choices when searching for a server monitoring solution.

The Reality of Server Monitoring: Complexity is Increasing.

Reality #1:
Monitoring Today's 'Hybrid' IT Environment

The Problem

The growing datacenter faces two problems; growth in the number of servers and growth in different server technologies. This growth can be attributed to new projects, growing lines of business, mergers and acquisitions and more. However, the end result is the same. Increasing numbers of servers and technologies that need to be monitored and managed, often without an increase in IT resources. That is a daunting challenge.

Your new 'hybrid' infrastructure now undoubtedly includes a mix of physical, legacy, virtual and even cloud servers and applications. Many platforms now reside as part of your service delivery, including flavours of Windows, Linux, UNIX, Netware, VMware, Hyper-V, Amazon EC2, Rackspace and more. While monitoring a single server platform can be challenging, administering this heterogeneous mix of server environments can feel downright impossible.

When looking at server monitoring solutions, an important factor to consider is the in-house IT talent available. Many enterprise organizations don't have a specialist for every platform (Windows, Linux, IBM, Solaris, Novell, VMware, etc.). In fact, lean IT departments depend on smart IT generalists that can tackle many issues. However, it's essential to arm the IT staff with tools that increase their ability

to monitor and manage the IT environment. A slew of point tools aren't the answer. Having a tool for every server platform leads to many problems, including:

- No unified view of server health across platforms and environments.
- Differing data collected by each tool, with no easy way to compare or aggregate the data for reporting (ex. integrated capacity reporting across all server platforms).
- Endless time and budget wasted on purchasing, installing, configuring and paying yearly maintenance fees for multiple point tools and additional modules
- Weak integration between separate monitoring tools.
- No integrated view of the entire application or IT service delivery. Most point tools and modules only monitor their small part of the process.
- No proactive monitoring and delayed mean-time-to-repair. Managers and administrators must run multiple tools to locate and fix problems.
- Less teamwork and more IT "blame game." Each IT silo/group has their own tool and no unified view.

How You Succeed

To make a hybrid datacenter easier to manage and monitor, a complete, multi-platform and multi-environment server monitoring solution should be used to monitor, alert and report on every type of server and OS in your organization. With the right multi-platform monitoring platform, administrators are empowered with a unified dashboard that provides a "single pane of glass" for watching over the entire infrastructure and application delivery process. This type of solution helps IT staff manage the challenges of monitoring various server platforms in a complex IT environment. As a result, IT productivity is increased and administrative effort is reduced, making IT more efficient.

Checklist:

- Multi-platform and Multi-environment Server Monitoring. Look for tooling that can cover all server and application platforms, including UNIX, Windows, Linux, Novell, VMware and more, as well as cloud platforms.
- A Unified IT Dashboard for Servers, Applications and Networks. Look for a unified product providing 100% visibility across all servers in the IT service delivery process
. This will make monitoring a complex environment easier and more scalable. Trying to manage, integrate and afford multiple point tools or modules can be a nightmare, both on staff and budget. Ideally, look for a unified IT dashboard that covers all server platforms, as well as application and network monitoring needs. If possible, find a solution that also includes SLA monitoring and reporting.
- Fast to Deploy and Easy to Use. Look for a solution that meets requirements, yet is easy to deploy and use. How fast can IT go from alert to fix? How fast can reports be generated? Can reports be automated and scheduled? How easy is it to add custom monitors or custom dashboards? Can IT deploy in one day or week? Can it easily integrate with other IT tools and the service desk (via API)? These are all important questions that should be considered when looking for a server monitoring solution.
- Simple, Flexible Licensing. Look for high value in terms of both cost and staff time needed to deploy, maintain and use it. Is it good value for what you get? Can it be deployed DYI (Do-It-Yourself) or does deployment and configuration require additional professional services? Is it simple to administer or does it need a full time administrator to maintain it? Is the solution all-in-one or do you have to pay for each new module? If it's modular, what is the cost of the all the modules needed? Do those modules actually integrate well? Is it priced per element, CPU, socket, etc.?

Reality #2:

Growing IT Environments and Business Demands, Shrinking IT Resources

The Problem

Ultimately, IT managers and administrators are asked to do a lot more, with a lot less in today's environment. Some analysts estimate that without a unified tool to help, one full-time administrator can only manage 11 UNIX servers or 30 Windows-based servers. For a 1,000 server environment, this would equal 30 to 100 full-time server administrators. This is headcount that most businesses simply cannot afford to hire and retain in today's economic climate.

How You Succeed

To have any hope of meeting the demands of monitoring an IT environment that's growing in size and complexity, administrators need to reduce the time and effort required to monitor and administer servers. Automating monitoring can pay huge dividends in decreasing the complexity and increasing the productivity of IT staff. This needs to include routine automated monitoring of performance, availability and capacity metrics, as well as automated and proactive alerts and reporting. To easily scale, unified server monitoring needs to be easy to install, maintain, and customize. In addition, the solution needs to enable monitoring across multiple datacenters and offices so that, whether datacenters are based in Tokyo or New York, an administrator can get real-time status reports and alerts fast.

Checklist:

- Comprehensive Server Monitoring. Look for a multi-platform server monitoring tool that automatically captures granular server metrics and proactively measures them against user defined thresholds.
- Intelligent Alerting and the Three "R's." Look for alerts that are smart enough to avoid the dreaded "sea of red" alert storm. It's essential that a tool understands infrastructure and application inter-dependencies, so it sends the Right information, to the Right person, at the Right time (RRR). For example, consider that a network device is down. Are all of the servers behind that network device down as well, or is just the single network device down (and the servers are fine)? That's the difference between a false alert storm going to the server team or a single alert on a network device going to the network team.
- Fast Do-it-Yourself Deployment. Look for installation and full deployment that's fast, with no additional services required. Avoid the lengthy, multi-month deployment times of legacy monitoring solutions, as well as the nightmare of trying to deploy, configure and integrate various point tools or modules.
- Customization. Look for the ability to easily add custom monitoring, including net new customizations written in any language or the ability to import scripts from older monitoring tools.

Reality #3:
Understanding Service Levels and Your Infrastructure

The Problem

The helpdesk is getting flooded with calls from business users... again. A quick look at your current monitoring tools show the associated servers are up and running. What next? What happens if you hear complaints about slow CRM response times or dropped shopping carts on your website and the servers appear to be operating at 75% capacity? What is going on? The executives want answers, what are you going to do?.

How You Succeed

Monitoring at the server level is important, but it's only part of the story. Servers play a key role in a complex ecosystem that makes up your IT service delivery, one that consists of applications, databases, middleware, network devices and more. In today's datacenter, application monitoring is a must have and this is especially true in the context of end-user transactions and service levels. What really matters is whether sufficient service levels are being delivered by IT. SLA monitoring and reporting that monitors and reports an all aspects of IT service and application delivery can help you connect all the dots.

Achieving this goal requires full visibility and control of the IT infrastructure that's relied upon to deliver a specific business service or application, regardless of the platform or environment it's running on. The right server monitoring solution should make setting and reporting on SLAs easy, even across a hybrid IT environment. Proactive SLA monitoring that alerts before IT services go off the rails is critical, as is the ability to communicate SLA performance to management, via business level reporting.

Checklist:

- Visibility into all Service Level Components. Look for a server monitoring solution that monitors the infrastructure and applications that make up a service. A unified monitoring solution should cover all servers, VMs, applications, networks and services that are part of an SLA.

- Quick SLA Monitoring and Reporting Set up. Look for an easy to set up SLA platform that quickly links infrastructure and applications together to define a service. Schedule automated reporting for IT and business users on a weekly, monthly and/or quarterly basis.
- Know Before You Miss an SLA. Look for a product that can proactively alert IT staff before an SLA is missed. Proactive and intelligent alerting and reporting should notify IT when a service level is trending to miss its SLA target, in plenty of time to fix the problem Look for SLA functionality that can account for non-priority hours, like maintenance windows, or off hours (nights, weekends, etc.).
- Dry Run SLAs Before Signing Them. Look for SLA features that include "back testing" with historical data. Running potential SLAs against historical data (the past 6 months for example) will clearly show if IT can meet it. This removes the risk to IT and should be essential before committing to an SLA. Never sign up for an SLA until you know you can meet it.
- Easy SLA Management Reports. Look for reporting that can be automatically scheduled and sent to IT with all the details required, while sending periodic reports to business managers in a format they can easily understand. Meeting an SLA is only part of IT's responsibility, communicating it to business managers in a way they can understand is just as important..

Reality #4:
Monitoring Virtualized Environments

The Problem

Companies of every size have adopted virtualization technologies for good reason. Virtualization promised to help pool IT resources and drive cost savings while increasing IT performance, flexibility and scalability. If only it were that easy.

While virtualization has great potential, it also has serious challenges when it comes to monitoring and management. Virtualized environments are an ecosystem of interrelated parts, all of which must be functioning optimally to ensure that business applications remain available. When virtualization gets implemented, an entirely new layer of "moving parts" gets added to the mix, increasing the complexity of the IT environment and making monitoring a much deeper challenge.

How You Succeed

While VMware and other vendors offer various point tools for monitoring virtualized infrastructure and applications, they fail because they can't provide a complete view of the entire IT ecosystem. Companies need an easy, efficient and complete way to monitor both the virtualized and non-virtualized datacenter environment. A unified monitoring solution is needed to watch over all servers, hosts, applications, databases, and virtualization platforms like VMware in an integrated way. By combining this unified and comprehensive infrastructure and application view (that includes extensive monitoring and reporting coverage for the virtualized environment), IT can fully optimize their virtualization investments while ensuring high service levels.

Checklist:

- Extensive VMware Health Checks. VMware is the virtual platform of choice for over 80% of the virtualization market, however VMware's monitoring tool selection is point tool based Unified views that include applications and infrastructure outside the VMware domain are not possible. Therefore, it's essential to look for a unified solution that can provide deep monitoring on the VMware environment (including what to virtualize next, metrics on memory ballooning, VM density optimization, VM workload profiling, VMotion tracking, VM zombie killer reports, etc), while also monitoring other servers and applications in the virtual and physical environments.
- SLA Monitoring and Reporting in Virtual Environments. Look for SLA management that can map and report across the virtual and physical environments that make up your application and service delivery.
- Monitor Virtual and Physical Environments Together. Monitoring the physical and virtual environments with separate tools wastes time and budget. Multiple server monitoring tools are difficult to integrate and can't provide a clear picture of IT service and application delivery across platforms. IT needs a unified view across all platforms and environments (including all servers, VMs, applications, networks and services) to enable a more proactive IT department and faster mean-time-to-repair.

Reality #5:
Understanding Service Levels and Your Infrastructure

The Problem

If there is one area that still haunts IT managers and system administrators, it's capacity. Do you know exactly how much capacity you have in your virtual and physical environments? Do you know how much is being used at this moment? Do you know when you will run out of capacity, before it happens? If you do, are you able to quickly produce management reports that clearly show when and why you'll need additional capacity? These are the types of capacity questions that can be nearly impossible to answer without the right tools and historical data at your fingertips.

What You Need to Win

Effective capacity planning and server resource reporting starts with the ability to collect and manage data from multiple platforms and across multiple environments. When proper capacity management is implemented, it can show IT's current global capacity position (across all environments) and help predict when IT will run into capacity problems. Setting alert thresholds for capacity and reviewing capacity trends will quickly put IT back in control. Additionally, reporting should be able to identify underutilized server resources and make them available for reallocation.

Checklist:

- Collect Historical Performance Data. Look for a unified server monitoring solution that collects and stores performance data from all servers, VMs, applications, networks and services, regardless of platform. This enables detailed, multiple platform capacity reporting and historical capacity trending that answers three critical IT capacity questions: How much capacity do I have? How much capacity am I using? When will IT run into capacity problems?
- Intelligent Capacity Alerting. Look for capacity alerting that understands capacity trends and quickly alerts when capacity thresholds are breached. This gives IT staff time to find and fix capacity problems before outages occur.
- Automate Capacity Fixes, Add New Capacity and Enable Self-Healing. Look for a server monitoring solution that can recognize capacity threshold breaches and can automatically

take actions to rectify the situation. Need more capacity? Have a solution that can dynamically spin-up new capacity when it's needed, alert you about the issue (and ask for your approval if necessary) and then automatically de-provision capacity when it's no longer needed. This makes capacity management more dynamic and controls sprawl and zombie VMs.

Today's mixed environment and hybrid datacenters are making server monitoring more complex than ever. Applications and services are spanning multiple platforms (Windows, UNIX, Linux, etc.) across multiple environments (physical, virtual and cloud). Most server monitoring tools simply cannot provide the unified monitoring necessary. Most solutions are too big, too complex and too expensive, or they are a cobbled-together mess of point tools and low-end modules that have narrow or limited functionality with no unified view of IT.

The key is to understand the needs of your IT environment (both today and in the future) and select a unified tool that meets those requirements.

Free Server Monitoring Checklist and Calculator:

If you are considering evaluating unified server monitoring solutions, this **"IT Systems Monitoring Checklist and Calculator"** is an excellent way to start. It's designed to be vendor agnostic and customizable to help you compare different products. A free download is available here:

- Download Here: IT Systems Management Vendor Evaluation Checklist