IDERA® | Uptime Infrastructure Monitor Whitepaper

The "12 Pitfalls" of Enterprise IT Systems Management

How to Maximize Performance, Availability and Capacity... Cost Effectively.

High availability and performance of mission-critical applications is a matter of business survival. If applications fail – or suffer from low performance levels – revenues and customers are lost. IT operations managers and administrators need to adopt a complete IT dashboard with total visibility over the IT service delivery process, including deeply monitoring servers, applications, IT services and networks. Performance, availability and capacity management solutions that can quickly be deployed, automate processes, and adapt to changing enterprise situations – without breaking IT budgets - are essential for strategic IT departments.

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IT systems monitoring, long a staple of many IT shops, has taken on a new urgency as companies continue to expand their data centers and computing power across vastly distributed networks and systems. Capacity management (especially in light of virtual environments) adds a new dimension to this challenge, as enterprises find they can no longer afford to simply "throw hardware" at problems to increase the level of available resources. Organizations need ways to more intelligently manage changes in capacity demand.

In recent years, the response offered by leading systems management vendors to these challenges has been a form of overkill, the IT equivalent to selling high-end, $1,000 Swiss Army knives for problems that a simple $10 paring knife could handle. Companies such as BMC, Computer Associates, Hewlett-Packard and IBM offer information technology service management (ITSM) suites that purport to address IT monitoring, capacity planning, as well as a range of other requirements. However, these large, expensive and unwieldy frameworks have often failed to meet the growing demands of many IT groups, including easy to use, fast deployment and affordability. Despite huge investments in software, consulting and training, IT often lacks the visibility and agility it requires to ensure operational excellence.

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Recognizing the limitations of conventional ITSM frameworks, a better class of solution is emerging to address IT needs: The complete IT dashboard, with integrated server, application, IT service and network monitoring combined with deep performance, availability and capacity management. This approach not only combines unified IT monitoring and capacity management into a single package, but is also relatively easy to deploy and can be found at favorable price points. IT operations managers and administrators are discovering that they no longer have to buy into heavy ITSM frameworks or make do with cobbled together low end, freeware or point tool solutions. An integrated IT dashboard can offer a rapidly deployable, cost-effective alternative that keeps servers, applications, services and networks running at their peak. These solutions will be discussed at the end of this white paper.

Market Drivers:

Server Sprawl and ITSM Shelf-ware

Enterprises rely on IT to maintain a competitive edge in their markets, build customer relationships, and manage operations. They require an on-demand, 24x7 infrastructure, resulting in a need for better performance, greater availability, and more capacity.

Often, the response by businesses and IT departments scrambling to meet this challenge has been increased "virtual server sprawl" – the almost unchecked growth of virtual servers across the enterprise that have been springing up in recent years to meet this insatiable demand for computing power and data. The cost of maintaining these systems is high, both in terms of IT budget and staff time. Gartner's most recent estimates put the IT operations tools market at $10 billion, with more than 200 software vendors. However, IT operations managers are under tremendous pressure to cut costs while improving service availability.1

Many mid and large enterprises have attempted to better manage this systems growth by adopting either point tools or large ITSM framework products. While point tools can be deep, their data is very difficult to integrate into a holistic view of the IT environment. The data simply cannot be rolled up into aggregated high-level views and reports. In the large framework tools, many of the features end up unused as "shelf-ware," due to the complexity and training costs associated with implementing these high-maintenance systems. Many IT organizations simply aren't providing the resources – in time, budget, and staff – to sort through the intricacies of deploying and integrating either a "tool soup" of point tools or a large scale framework solution.

Many of the features in large frameworks end up unused as **"shelf-ware,"** due to the complexity and training costs associated with implementing these high-maintenance systems.

Thus, IT operations managers and administrators are left with the job of figuring out how to achieve greater transparency in the monitoring and reporting of system events, yet are unable to find the perfect fit tool set.

Two Sides to Performance and Availability Problems:
Monitor the Present, Anticipate the Future

IT managers and administrators face the challenge of being able to monitor the performance of growing arrays of servers and applications (physical and virtual), while needing to plan for future capacity.

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[1] *Hype Cycle for IT Operations Management, Gartner, Inc., Milind Govekar, Donna Scott, Ronni J. Colville.*

Effectively addressing both server monitoring and capacity management needs simultaneously can help these professionals find ways to cut costs and better consolidate IT infrastructures. The following section explores the key issues that both of these categories present to IT operations managers and administrators:

Challenges for Enterprise Server Monitoring

Companies keep adding more and more servers to their enterprise infrastructures, many of them virtualized, which adds exponentially more complexity and increases the risks of performance and availability problems. Optimizing and troubleshooting distributed server and virtual server farms requires the ability to track both hardware and software across the datacenter – to not only prevent or discover failure points, but also to spot underperforming systems before they cause outages.

Challenges for Enterprise Server Monitoring:

1. What needs to be monitored
2. No clear and holistic view of the data
3. Too many – or too few – "agents" for the job
4. Too many manual tasks
5. Too much complexity and hidden costs
6. Hodgepodge of point and low-end tools

Server monitoring spans three areas of operations: monitoring server operation (the running status); monitoring server traffic (both in and out); and monitoring the results of server use (keeping logs, statistics, and analysis). This encompasses monitoring physical hardware, server performance, services, and the network.[2]

The following are the most pressing issues in enterprise server monitoring:

1. **Determining what needs to be monitored:** Assessing exactly what kind of data needs to be monitored can be confusing. Many server monitoring solutions offer both real-time and historical monitoring of server performance. However, many employ "agentless" or SNMP monitoring, which does not utilize a resident program directly on targeted servers. Such solutions do not capture enough detail to aid in alerting or root cause analysis without considerable customization. Conversely, the large ITSM suites generate a deluge of monitoring data, making it difficult to sort through reports to pinpoint the most important data points.

[2] *"Server Infrastructure Tools, Monitoring Software," Nelson King, ServerWatch.*

2. **No clear and holistic view of the data:** As is the case with holistic medicine, root-cause analysis in IT administration seeks to address the underlying causes of problems, rather than merely treating the symptoms. In many enterprises, however, administrators are not aware of the underlying problems, and often are alerted to issues after they are encountered and reported by end users. Many solutions on the market today – both point tools and the heavy ITSM frameworks – do not provide high level, transparent views of existing multi-platform systems and don't enable easy drill down that quickly pinpoints why systems are down or underperforming. Additionally, since IT operations managers and administrators don't have access to required metrics from specific applications or processes that may be affecting system performance, they are unable to directly correlate the impact of business systems transactions with system performance.

3. **Too many – or too few – "agents" for the job:** When it comes to the use of agents for the collection of data, many companies go too far to either one extreme or the other. Many solutions offer agentless monitoring, relying on SNMP feeds. However, such feeds do not offer the deep, detailed data that provides a true picture of server performance. At the other extreme, the large ITSM packages introduce heavy-footprint agents, which can create enormous load and overhead on the servers they are monitoring.

4. **Too many manual tasks:** Many IT operations managers and administrators are bogged down in manual scripting and system monitoring tasks that take up a significant portion of their workweeks. One common example are backups: many solutions don't automatically monitor server backups, and, as a result, administrators aren't immediately notified when a server crashes and a backup system is being used. This results in considerable manual work when events do happen.

5. **Too much complexity and hidden costs:** Many of the high-end framework products on the market today are not easy to use and end up as 'shelf-ware' after numerous painful attempts at deployment. In addition, conventional ITSM frameworks carry a heavy payload of hidden costs. Many enterprises, in fact, are forced to spend valuable IT budget on not only ITSM software and accompanying hardware, but also service and consulting fees. Often, these efforts fail because companies underestimate the amount of resources and time required to put these systems in place, including extensive end-user training. Typically, these expenses often double the original cost of the software.

6. **Hodgepodge of point tools and low-end tools:** Many organizations mistakenly think that deploying point tools, low-end tools or open source tools is a viable and low-cost alternative for IT systems management. However, multiple point tools can lead to a 'tool soup' that can't be integrated into higher level dashboards and end up costing more. Lower end tools usually require excessive custom scripting and rebuilding, they tend to lead to misspent resources and reduced productivity. Such situations also cause IT organizations to become over-dependent on the individuals managing these tools and scripts.

Lower-end and freeware monitoring tools usually require excessive custom scripting and rebuilding, and tend to lead to misspent resources and reduced productivity.

At the end of this document, we will highlight the types of solutions that can help enterprises cost-effectively tackle these problem sets.

Capacity Management Challenges for the Enterprise

In capacity planning, models of an organization's software and hardware infrastructure can be used to determine how to best allocate resources. Solutions for this type of capacity management can be expensive. However, a proven and cost effective model of capacity management and planning is trending analysis that can compare baseline and historical capacity to current/future needs.

Capacity Planning Challenges:

1. Lack of expertise for capacity planning
2. Reliance on complicated capacity-planning solutions
3. Poor data and not enough of the right data
4. No clear and holistic view of the data
5. Multiple tools required
6. Inability to convert data into actionable results

The following are the most pressing challenges for enterprise capacity planning and management:

1. **Lack of expertise for capacity planning and management:** True capacity management, even with the modules provided in large-scale ITSM products, requires an extensive knowledge of statistics to interpret incoming data and make recommendations for realigning resources. In fact, capacity planning in this sense is beyond the capabilities of most systems management solutions, due to

the complexity of modeling up to thousands of systems (physical and virtual) to simulate transactions and conduct “what-if” analyses.

2. **Reliance on complicated capacity-planning solutions:** Some vendors offer capacity planning solutions that are essentially business intelligence applications, employing predictive analytics algorithms. However, predictive software can leave too much to chance with many changing variables. Such solutions are often too complex for even the most sophisticated users to operate and interpret.

3. **Poor data and not enough of the right data:** Often, enterprises do not collect data over a long-enough period of time to spot short or long-term trends that will help IT operations managers and administrators make decisions about managing system workloads. The reason is that many solutions do not collect enough data to provide an essential baseline and trend for analysis. As is the case with server monitoring, many companies also have a difficult time determining what metrics to focus on for their capacity planning and reporting.

4. **No clear and holistic view of the data:** While a number of solutions on the market today – particularly the ITSM frameworks – provide the essential metrics required for capacity planning, they do not provide high-level, transparent views of existing multi-platform systems (physical and virtual), and don’t enable managers and administrators to see a complete, high level view of; How much capacity they have; How much capacity they are currently using; When they will run out of capacity.

5. **Multiple tools required:** Multiple tools are generally needed to collect or gather data from the different platforms for capacity planning. A multi-platform enterprise running Unix, Linux, Windows and VMware servers may require different tools for each platform. Aggregating this data for thorough capacity management and analysis can be a full-time reporting job.

6. **Inability to convert data into actionable results:** While some solutions on the market deliver fairly detailed reports on capacity requirements, few actually correlate the results of capacity reports to actions and processes for better IT service delivery. At the end of this document, we will highlight the types of solutions to look for that can help enterprises solve capacity management challenges.

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There are solutions on the market today to help companies address many of the IT systems management and capacity planning issues defined above. However, most solutions either fail to provide a complete IT dashboard for unified monitoring across all servers, applications, IT services and networks (like point tools or low-end tools) or they are large ITSM framework vendors with highly complex and expensive solutions that demand long deployment timelines and costly on-site consulting. Given these limitations, many IT organizations are seeking new and effective solutions..

What to Look For in Today's Solution

The Complete IT Dashboard

To address today's systems management challenges, IT decision-makers are increasingly implementing integrated IT monitoring solutions. This approach employs intelligent monitoring, alerting and reporting across all aspects of the datacenter. Solutions are now available at a fraction of the cost of the large-scale ITSM frameworks, and yet deliver the deep performance, availability and capacity management that enterprises require. This emerging class of systems management tools offers a compelling value proposition to IT operations managers and administrators that need to deliver high levels of performance and availability to their business end-users, but without blowing a hole in their IT budgets.

> An investment in a large ITSM framework is no longer necessary to achieve comprehensive reporting, monitoring and capacity planning within a server infrastructure..

Integrated Server, Application, IT Service and Network Monitoring.

Complete datacenter monitoring across all elements plays a major role in achieving high performance and availability in today's systems. Why should IT managers and administrators be stuck with an un-integrated 'tool soup' (many point or low-end tools) or expensive framework solutions? The best approach is a solution with integrated and unified capabilities that can address a range of requirements – including performance, availability, capacity and SLA monitoring across the entire IT datacenter (all server platforms, applications, IT services and Networks).n.

> The best approach is a solution with integrated capabilities that can address a range of requirements – including server monitoring, application monitoring, Network monitoring SLA monitoring for complete performance, availability and capacity management.

Streamlined Navigation.

Many IT systems monitoring and management suites on the market require extensive click-throughs across multiple modules. Vice versa, multiple point and low-end tools require diving into many separate products with uncorrelated (and non-standardized) metrics and data. Both lead to wasted IT staff time and budget. From a single, high level IT dashboard, end-users should be able to point and click, quickly drilling down and accessing the root cause of a problem. A streamlined navigation should help end users instantly figure out what is happening in their datacenter with deep resource, process, and service metrics.

Rapid Time to Deployment and Value.

Long deployment timelines and expensive on-site deployment services are a thing of the past. Today's ITSM solutions should be deployable within days, not months – as a Do-It-Yourself deployment with in-house resources. Business is moving too fast for IT operations and administrative staff to get mired in long deployment cycles. The solution should be highly intuitive for rapid and easy adoption by end-users, without the need for weeks of training and consulting engagements.

Enhanced Automation.

Both the large, heavy ITSM frameworks and low-end/point tools require extensive manual intervention by the IT operations and administrative staff, to deploy, maintain and/or integrate. That eats up value IT staff time. Ideally, the right solution should do more of the work for you. Areas that should be automated include service discovery, monitored element discovery (servers and network), virtual machine discovery, service restarts, report generation/distribution, and capacity provisioning/de-provisioning when workloads increase (via virtual or cloud environments) to name a few. Through greater automation, IT teams can focus their time and resources on higher-priority and proactive tasks that provide more value to the business.

Cost Effectiveness.

An investment in a large ITSM framework is no longer necessary to achieve a complete ITSM dashboard with unified monitoring, alerting and reporting across all servers, applications, IT services and networks. Nor is it necessary to commit weeks or even months of IT staff resources to cobble together low-end, open-source or point tools, which can be costly in the long run. The best approach is rapidly deployable ITSM solutions that provide the right, detailed data for complete datacenter visibility, in a highly automated fashion, for a minimal investment. This is the value proposition integrated IT monitoring solutions offer to enterprises of all types and sizes.

Success Stories: Lower Costs, Higher Performance

Companies that have adopted this new generation of IT systems management solutions report significant levels of IT savings and increased productivity.

Bank of Montreal Financial Group (BMO)

BMO was looking for a solution that could help its IT administrators identify potential issues quickly and drive out inefficiencies in a cost effective manner. BMO needed to better monitor its infrastructure and aid in application testing, to take control of its IT environment quickly, driving both better utilization and problem resolution. The company implemented an integrated IT monitoring solution (Uptime Infrastructure Monitor) to improve its server and applications monitoring, system performance, and capacity planning and forecasting. BMO reports a 53% savings in installation, and a 25% boost in staff productivity and business efficiency. Plus, the bank's IT team reports that they are now able to consistently pinpoint and head off infrastructure problems before they cause outages.[3]

Telekurs Financial

Telekurs was able to migrate away from a heavy ITSM framework (HP) to an integrated IT dashboard (Uptime Infrastructure Monitor) providing complete visibility over the performance and capacity of their datacenter. Telekurs saved money by lowering its licensing costs and eliminating consulting costs. In addition, the new solution delivered ROI to the company by significantly boosting the productivity of its IT staff. Overall, the company reports that its integrated IT monitoring solution cut its costs by 60% compared to the ITSM framework it formerly used, and experienced a five-fold increase in ROI.[4]

> "After easily deploying Uptime Infrastructure Monitor to over 125 servers, we are seeing an immediate and significant cost savings in licensing, and especially in consulting fees. In fact, time spent on monitoring and planning processes by consultants and internal resources has dropped dramatically."
> **- Wally Beddoe, Vice President of Technology, Telekurs Financial**

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[3] *"Large North American Financial Institution Drives Down IT Costs by 50%-70% While Increasing Productivity," Uptime Infrastructure Monitor software Case Study..*

[4] *Large Financial Company Decreases IT Costs While Using Historical Trends to Plan for the Future," uptime software Case Study.*

Conclusion:

Stronger IT Management, More Productive IT Administration and Lower Costs.

Monitoring servers, applications, IT servers and networks are essential to helping a company maintain service level agreements, meet contractual obligations, improve customer and user experience, and move forward into new markets.

The benefit of unified IT systems management and monitoring across the enterprise becomes obvious very quickly. With properly monitored IT service delivery, a company can ensure that its mission-critical applications and databases (email, CRM, ERP, website, e-commerce, middleware) are operating at optimum efficiency and productivity. End users, including employees and customers, are neither frustrated nor disappointed by unreliable service. Reliable IT service delivery will help develop a sense of trust and confidence in IT, an important component in raising the value of IT and IT staff, within the company.

The adoption of unified IT systems management and monitoring can alter, for the better, the entire role of a company's IT team. IT operations and administration staff can focus on maximizing IT performance to meet ever-changing business requirements, as opposed to constantly troubleshooting IT fires. Indeed, smart IT management can not only create a competitive advantage for the business, but can easily communicate that increase in value to the business leaders.

Free IT Dashboard Solution Checklist:

If you are considering evaluating IT Dashboard solutions, this "IT Systems Management Vendor Evaluation Checklist" 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