Overcoming IT Monitoring Tool Sprawl with a Single-Pane-of-Glass Solution

Best Practices to Achieve Unified IT Monitoring

An eG Innovations White Paper

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Total Performance Visibility

Introduction

As businesses have become increasingly reliant on information technology, it has become essential to monitor the applications and infrastructure that support the business, to ensure that they are available and performing well. IT application and infrastructure monitoring helps detect performance anomalies, triage issues quickly, and ensures that the business is operating efficiently.

However, despite its importance, IT monitoring is often an afterthought, deployed after an IT infrastructure and applications are already in place and functioning. Without a planned and well-defined monitoring strategy in place, most IT organizations – large and small – find themselves caught in the trap of "too many monitoring tools": custom in-house tools, open source tools, packaged tools, and more, that add up over time.

A recent survey by Enterprise Management Associates (EMA) found that 65% of enterprise organizations have more than 10 monitoring tools. These monitoring tools are, of course, not all unnecessary, but the real questions are: Does your team need to manage so many monitoring tools? Does every nail require a different hammer? What are the potential consequences?

> *65% of enterprise organizations have more than 10 monitoring tools.*
>
> **EMA Survey, 2015**

There are many reasons why enterprises end up having too many monitoring tools. This white paper first examines why this occurs and how the situation gets out of control, and then presents best practices to consolidate monitoring tools in a way that it increases operational efficiency, reduces shelf-ware, and benefits the organization.

Monitoring Sprawl: How Did We Get Here?

Specialized Requirements

IT services are not client/server-based any more. A single IT service relies on many technologies and tiers. For example, a web service requires one or more web server front-ends and multiple middleware tiers, communication across tiers may be through message queues, and the

data the service accesses may reside on database servers. Each of these tiers may be hosted on virtual machines (VMs) running on a virtualized server and storage may be provided by specialized SAN devices. Since each of these technology tiers is very different from the others, specialized management skills are needed for each tier. Moreover, IT organizations tend to be structured along the lines of these tiers, which leads to many administrators using a different set of tools for their respective domains of expertise.
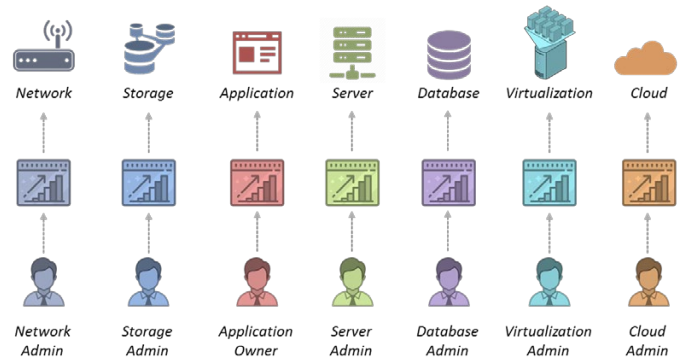

Figure 1: Monitoring is often silo-based: Different monitoring tools are used for different IT tiers

Furthermore, even within a specific tier, multiple monitoring tools may be in use: one for monitoring performance, another for analyzing log files, yet another to report on traffic to that tier, and so on.
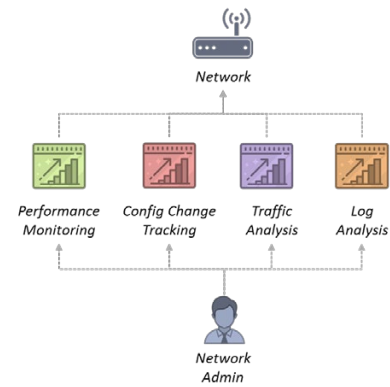

Figure 2: Multiple tools may even be used for the same infrastructure tier (e.g., network monitoring)

Short-sighted selection of monitoring tools can also lead to further sprawl. When faced with a problem, an IT administrator may implement a new tool simply to solve the specific issue at hand. Such ad hoc tool choices contribute to a growing collection of monitoring tools that result in increased costs and usage of personnel resources. Tools procured in this way also have a tendency to become shelf-ware over time – they are used to solve a specific problem

and if that issue does not reoccur, they are never used again.

Another reason for monitoring tool sprawl is personal preferences and previous experience of IT administrators with a specific software solution. IT administrators and managers may have used a monitoring tool in past roles that they view as required for the job. Despite having one or more existing monitoring tools already in place, the new tool gets implemented, rendering the existing solutions partially or completely redundant.

Inheritance and Bundles

Mergers and acquisitions can add to the software sprawl. Every time two organizations merge, the combined organization inherits monitoring tools from both organizations.

Figure 3: Company mergers and acquisitions can contribute to monitoring tool sprawl

Many hardware purchases include proprietary monitoring software. Almost every storage vendor bundles their own monitoring tool with a purchase. Therefore, an organization that is leveraging storage arrays from multiple vendors can easily end up with a diverse group of storage monitoring tools.

And, software vendors sometimes package monitoring tools with their enterprise deployments as well, so organizations that enter into these agreements can find themselves with yet another tool.

SaaS-Based Monitoring Options & Freeware

With the advent of quick-to-deploy SaaS-based monitoring tools, it has become very easy for organizations to keep adding them. SaaS-based helpdesks, monitoring tools, security tools, can be easily purchased from operating budgets, so IT staff can deploy their own open source and free tools, as needed. All of these add to the overall number of monitoring tools the organization must maintain.

The Problem of Too Many Tools

Needle in the Haystack

Although each monitoring tool has its own unique focus and strengths, overlap in functionality is extremely common. And, because there is no integration between these tools, performance problem diagnosis is tedious and time-consuming. Administrators must first sift through alerts from disparate sources, eliminate duplicates, and then manually correlate reported performance issues to get actionable insights. Further complicating this process, analyzing alerts across tiers often requires a great deal of expertise, potentially adding more resources and more time.

Figure 4: It is difficult to pinpoint the source of the problem when analyzing alerts from multiple tools

For fast remediation in a multi-tier service delivery, problem diagnosis must be centralized and automated, but this cannot be easily achieved with multiple tools. Finding the needle in the haystack is difficult, but with what appears to be duplicate needles across many haystacks, it is easy to be led astray and waste valuable resources and time.

Of War Rooms and Blame Games

Most monitoring tools are designed for specific subject-matter experts (application, database, network, VDI, etc.). Without unified visibility into the IT environment, war room discussions can easily turn into finger-pointing: an application owner blames the network tier for slowness, a database administrator blames developers that have not used optimal queries, virtualization administrators point to the storage team, and so on.

Figure 5: Problem diagnosis becomes challenging when IT war rooms turn into blame game

Everyone believes it is "not my problem". But there is a problem somewhere, and without a single source of truth – a holistic view of service performance – no one can have visibility into what went wrong and where the fix is needed. So, additional time and effort is needed to manually correlate events and solve the problem, while the business and users suffer.

> *IT teams spend 46 hours per month in war room troubleshooting sessions.*
>
> **TRAC Research**

Time and Money

Maintaining a number of monitoring tools adds cost, on many levels. There are hard costs with license renewals and maintenance, plus the time spent in support requests, working with the various vendors, deploying upgrades, and training personnel to handle multiple tools. All of these factors impact the total cost of ownership (TCO), with the cost of maintaining shelf-ware and redundant tools being the most extravagant of them all.

> *74% of respondents who say cost and complexity are their top challenges are using multiple tools.*
>
> **IDG Quick Pulse Research, 2015**

Addressing the Toughest IT Challenge: Why is the Application Slow?

IT operations teams are no longer measured by how low the CPU utilization of their servers are and how much more bandwidth is available on the network. Instead, IT performance is measured based on user experience. If users are happy and productive, then the IT team is doing a good job. Conversely, the toughest performance issues that IT teams have to deal with are the ones when users complain that their applications are slow.

> *98% user experience problems rely on several parts of the IT infrastructure*
>
> **Forrester Research, 2014**

Since many software and hardware tiers are involved in supporting a single application, identifying the root cause of the issues by analyzing every tier, one by one, is a herculean task: is the problem caused by the network, or the database, or by the application code, or virtualization or storage?

Every minute of downtime or slowness cost businesses money. Therefore, IT teams are under pressure to lower the mean time to resolution. Here are some relevant stats:

- The average cost of application failure per hour, according to IDC, is 500,000 to $1 million.

- A 1-second delay in page load time translates to 1% drop in sales for Amazon ($1.6 billion annually)

Dealing with multiple independent monitoring tools for each tier of the infrastructure, manually analyzing alerts and metrics from each of the tools and correlating performance data across the different tools makes problem diagnosis slow, laborious and expensive. This, in turn, affects both user satisfaction and business productivity.

The Solution: Unified IT Monitoring from a Single Pane of Glass

The solution to this problem is centralizing and unifying monitoring of IT infrastructures. Every IT manager wants to have a single-pane-of-glass monitoring solution – one holistic dashboard across all IT tiers—from desktops to servers, application code to hardware, virtualization to storage, network to cloud. This simplifies monitoring across silos by delivering centralized and unified visibility, making it easy to diagnose and troubleshoot user experience issues

and application failures that are generally difficult to resolve. Typically, a single-pane-of-glass monitoring tool is expected to be:

End-to-end	Provides centralized infrastructure-wide visibility from one console
Intelligent	Provides insights to pinpoint the root cause of problems
Automated	Uses automation for discovery, monitoring, and problem remediation
Proactive	Delivers trustworthy alerts, before end-users are affected and call the helpdesk
Simple to use	Allows IT support staff and helpdesk technicians (non-domain experts) to use the tool for problem triage

Looking at this wish list, it is understandable that one may wonder: Is such as tool really available? How would you implement monitoring using a single-pane-of-glass tool? Let's take a look at some of the popular views surrounding the use of a single-pane-of-glass-tool, dismiss some myths, and uncover the reality of what can be achieved with such a solution.

Single Pane of Glass: Myths

1 The first myth says that **a single-pane-of-glass monitoring tool can replace all the existing tools in the enterprise and be a super console** – i.e., the single source of monitoring truth. Over the years, monitoring tools have struggled to keep pace with evolution of multi-tiered IT service delivery technology and the vast array of software and hardware choices available in the market. Therefore, it is extremely unlikely that there will ever be a single do-it-all monitor for the entire IT infrastructure that can effectively perform all the tasks that every IT administrator would want to perform and, therefore, replace all the existing tools. Considering

A super doctor who can cure all alignments doesn't exist!

a healthcare metaphor: a super-doctor who can cure all ailments just doesn't exist. Similar to how specialized medical practitioners are needed for diagnosis and treatment of specific ailments, domain experts in the IT world need to use specialized deep-dive monitoring tools. Moreover, it is practically impossible to get all the domain experts to agree to use one common tool.

2 The second myth says that **a single-pane-of-glass monitoring tool is a manager of managers that receives alerts from all the other tools and provides an aggregated view of the state of the entire IT infrastructure and the entire service delivery chain**. In theory, this would simplify troubleshooting as all the administrators can use a common console. However, this manager-of-managers does not replace all of the existing monitoring tools. Since the detailed metrics and analysis for each tier are still provided by the tier-specific monitoring tool, with this approach there is no correlation across performance alerts from the various tiers. Despite delivering an aggregated view, this manager-of-managers approach does not solve the challenge of reducing alert volume and diagnosing the root cause of problems quickly.

> *79% IT teams reported that reducing alert noise is a top challenge. 50% IT pros received 50 alerts per day from their monitoring tools.*
>
> **Big Panda Survey, 2016**

The two views above are clearly myths: There can be no one tool that will replace all your existing tools, and simply aggregating metrics from other tools into one dashboard does not simplify managing alert floods and accelerating problem diagnosis.

Single Pane of Glass: Reality

When an end-user complains of a slow application, instead of spending time in endless war rooms, the ideal scenario is where an IT service manager (or even helpdesk staff) can:

- Look at a centralized dashboard, get performance visibility of all infrastructure tiers
- Pinpoint the problematic tier
- Isolate the root cause, and

- Inform the right IT personnel for further analysis and troubleshooting

So, instead of Myth #1 (replacement of tools) or Myth #2 (aggregation of metrics without correlation), **IT teams must focus on intelligently consolidating performance alerts, metrics, events and log data across the service delivery chain into a single dashboard and automatically correlating this data**. Look for a single-pane-of glass solution that monitors all parts of the IT infrastructure and includes intelligence that understands inter-dependencies, differentiates the cause of the problem against the effects and automatically pinpoints the root cause.

When end-users complain of application slowdowns, IT administrators can rely on such a single-pane-of-glass solution to:

- Track the end user experience – either synthetically or, passively by watching real transactions and users

- Get code-level visibility of business-critical applications and services

- Monitor every layer, and every tier of the IT service delivery

- Automatically correlate performance across the service delivery, based on interdependencies between the tiers (e.g., the web server depends on a database, a VM depends on a physical machine, etc.)

With this capability, when a problem is detected, administrators can easily identify the root cause of the problem: is it the network, or database, or application code, or virtual platform or storage? This, in turn, allows administrators and even helpdesk staff to call the correct IT technician or department for an issue, sometimes avoiding the need for a war room meeting at all. Once properly identified and routed, the IT technician may then choose to use additional in-depth performance analysis tools for troubleshooting within their domain.

Defined in this way, single pane of glass is a reality today. And, it is extremely useful to provide service-level IT insights and deep performance diagnostics that ensure a great user experience, every time, and improve both efficiency and business outcomes.

➕ A Healthcare Analogy

The single-pane-of-glass unified monitoring tool is like a general practitioner for your IT infrastructure. Just as one goes to a general practitioner first when an unidentified health issue arises, when there is an IT performance issue, IT administrators should first consult a single-pane-of-glass tool.

Needed only when there is expertise needed to solve a complex problem
Expert Tools/Point Solutions

Neurologist

Patient   General Physician   Cardiologist

Diagnoses and addresses 80% of problems
Single-Pane-of-Glass Monitoring Tool

Ophthalmologist

Just as the patient may be treated by different specialists in the healthcare world, in the IT world, administrators will still need deep dive tools for their respective tiers, to further diagnose complex problems. This approach to IT performance monitoring is practical, cost-effective and is the most direct way to remediate issues quickly.

Who Benefits from Such a Single-Pane-of-Glass Monitoring Solution?

C-Level Executive	- View high-level reports regarding overall IT service health
Application Owner, IT Service Manager	- Get access to service-level views - Understand user impact - Track application slowdowns
Helpdesk Technician, IT Support Staff	- Validate user experience problems and application issues in real time - Identify the source of problem and route to the right IT personnel

Domain-Specific IT Admin	- Quickly identify which tier is causing a problem - Eliminate finger pointing with a single source of truth - Get deep-dive performance visibility and analytics for troubleshooting
IT Operations Lead, IT Manager/ Director	- Monitor overall IT infrastructure health - Track resource usage patterns - Perform capacity planning and resource expansion
IT Architects, IT Consultants	- Use reports to conduct performance assessment - Understand pre- and post-migration performance variations - Get actionable insights for infrastructure right-sizing and optimization

eG Enterprise: Single Pane of Glass for Your IT Infrastructure

eG Enterprise from eG Innovations offers unified performance monitoring, diagnosis and reporting for today's IT infrastructures. Its universal monitoring technology provides visibility into every layer of every tier of an infrastructure—from hardware to applications, desktops to servers, virtualization to storage, and network to cloud—all from a single pane of glass. By understanding infrastructure inter-dependencies and auto-correlating performance metrics across all tiers, eG Enterprise identifies the root cause of performance issues in seconds and accelerates IT troubleshooting.

With eG Enterprise, IT administrators can:

- **Gain end-to-end visibility:** Monitor any of 180+ applications, 10+ operating systems, 10+ virtualization platforms, 20+ storage devices and any SNMP-enabled network device from one web console (See supported technologies »). Monitor user experience synthetically and by observing real user activity, thereby enable IT admins to quantify SLAs their commitments, and highlight times when slowdowns occur.
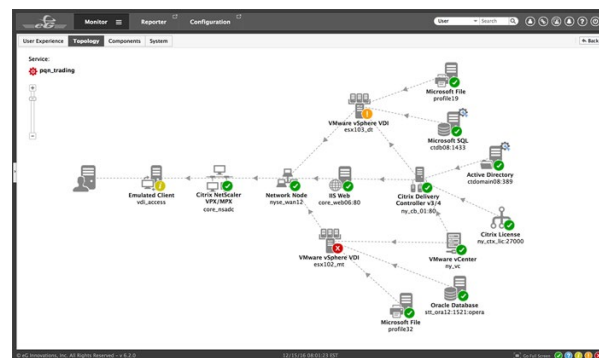

Figure 6: Digital user experience monitoring

- **Proactively monitor the target infrastructure:** The auto-baselining capability embedded in eG Enterprise monitors allows them to detect time of day, day of week of abnormalities, and alert administrators to potential problems in advance.

- **Intelligently diagnose problems:** Leverage built-in correlation rules to correlate alerts across tiers and pinpoint the root-cause of problems. Get deep diagnostics and actionable insight needed to troubleshoot issues, right-size the infrastructure and plan for future growth.

- **Automate monitoring and recovery:** Built-in domain expertise enables monitoring to be automated. Pre-defined models for each tier enable monitoring to be set up quickly, without needing extensive configuration. When problems occur, recovery actions can be automatically initiated, minimizing mean time to repair.

- **Get started with a small learning curve:** A 100% web-based architecture ensures easy deployment and a minimal learning curve. Color-coded topology views and easy-to-use layer model dashboards ensure that even less technically adept IT admins can effectively use the tool to triage problems quickly.

Figure 7: Infrastructure topology & root cause diagnosis

Figure 8: eG Enterprise offers unified IT performance monitoring from a single pane of glass

> *We have no more frustrations because now we know where the problem is, and the root cause of issues is detected in minutes. With the eG Enterprise performance monitoring suite we deliver a robust and reliable environment that guarantees maximum uptime and user satisfaction.*
>
> **Wilfried Landsheert,**
> **Director, Systemat Digital Hub 2017**

Making Single Pane of Glass a Reality Though Smart Consolidation of Tools

Consolidating IT monitoring tools may seem simple on the surface – just a matter of committing to the time and effort required for thorough auditing and paring of redundancies. But, consolidating tools through the implementation of a unified IT monitoring strategy puts monitoring and diagnostic power in the hands of your entire team at once, which, beyond helping decommission overlapping tools and cutting costs, also improves the business. End-to-end, service-centric visibility and diagnostics helps build process around cross-silo performance management. This reduces the sprawl and, even more importantly, leads to greater IT efficiency and value.

Do not try to replace all your tools with one tool, and do not try to aggregate all metrics into a single tool without effective performance correlation. Instead, look for a single-pane-of-glass solution that can act as your go-to tool to solve most of your IT problems with built-in intelligence to auto-correlate metrics, alerts and events across the infrastructure and help you pinpoint the root cause quickly. If you decide on this centralized tool first, then a review your existing tools can determine which ones are superfluous and which ones are needed as specialist's tools. This strategy will simultaneously minimize the monitoring tool sprawl in your organization and also increase operational efficiency.

Next Steps

🌐 | For more information, please visit www.eginnovations.com/solutions/unified-monitoring

✉ | Email us at info@eginnovations.com

LIVE DEMO

Request a personal walkthrough to learn first-hand how eG Enterprise can help improve performance and operations in your business environment.

FREE TRIAL

15-days of free monitoring and diagnosis, in your own infrastructure. Try it and learn exactly how eG Enterprise helps you ensure a great end-user experience and improve IT operations.

About eG Innovations

eG Innovations provides the world's leading enterprise-class performance management solution that enables organizations to reliably deliver mission-critical business services across complex cloud, virtual, and physical IT environments. Where traditional monitoring tools often fail to provide insight into the performance drivers of business services and user experience, eG Innovations provides total performance visibility across every layer and every tier of the IT infrastructure that supports the business service chain. From desktops to applications, from servers to network and storage, eG Innovations helps companies proactively discover, instantly diagnose, and rapidly resolve even the most challenging performance and user experience issues.

eG Innovations' award-winning solutions are trusted by the world's most demanding companies to ensure end user productivity, deliver return on transformational IT investments, and keep business services up and running. Customers include 20th Century Fox, Allscripts, Anthem Blue Cross and Blue Shield, Aviva, AXA, Biogen, Cox Communications, Denver Health, eBay, JP Morgan Chase, PayPal, Southern California Edison, Samsung, and many more.

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