Unified Performance Management: Moving Beyond the Silos

An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) White Paper
Prepared for Riverbed
November 2015
# Unified Performance Management: Moving Beyond the Silos

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 Executive Summary
Enterprises are adopting hybrid clouds and software-defined infrastructure to accelerate their ability to deliver scalable applications in a very competitive business environment. These new architectures are extremely complex, which is forcing IT organizations to establish multidisciplinary cross-domain operations teams to support them. These teams need unified performance management and service assurance platforms that encourage collaboration and provide cross-domain operational visibility. Riverbed SteelCentral Platform is an example of a management system that combines application performance management (APM), network performance management (NPM) and network configuration management into a unified solution that helps IT operations support application delivery more effectively and efficiently.

Enterprises Must Break Down Silos to Support Hybrid Infrastructure
After years of industry talk about the grand possibilities of cloud technologies, reality has finally caught up with the hype. Enterprises are adopting hybrid cloud infrastructure to enable high-velocity delivery and scaling of applications and services. This trend has blurred the lines between internal and external infrastructure, placing new burdens on IT operations.

As enterprises adopt hybrid cloud, their internal infrastructure starts to resemble the architectures that characterize public cloud data centers. In other words, these enterprises establish software-defined data centers (SDDCs) to enable this transition. SDDCs are characterized by highly converged and programmable infrastructure with cross-domain orchestration and management platforms. IT operations must adapt their monitoring and troubleshooting systems to support these new conditions.

Enterprise Management Associates (EMA) research has found that the most important aspect of an SDDC architecture is centralized management from a single control point or platform. Nearly half of enterprise adopters of SDDC architecture identified centralized management as a priority.¹ Unfortunately, however, most enterprises traditionally adopt a decentralized operational approach. They maintain distinct organizational groups that are responsible for operating individual technology domains (networks, storage, servers, security). These individual teams use their own tools and their own processes, with minimal collaboration.

Surveying enterprise adopters of SDDC architecture, EMA research has found that silos are the kiss of death for hybrid infrastructure operations. When we asked these enterprises to identify the disadvantages of their management silos, increased operating costs emerged as a major problem. In all, we found several pain points that could be addressed by a unified performance monitoring platform.

- 37% experience increased operating costs
- 32% struggle with slow provisioning of new application environments
- 32% say troubleshooting is more painful

¹ EMA, “Obstacles and Priorities on the Road to the Software-Defined Data Center,” April 2014.
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Given these problems, IT organizations are increasingly unifying IT operations. Eighty-two percent of enterprises in this SDDC survey told EMA that it was important for them to address management silos in order to establish more efficient provisioning, management, and operation of application environments. In fact, in a separate survey of mainstream medium and large enterprises, roughly 40% of respondents indicated that they had replaced siloed operations teams with integrated, cross-domain operations centers.²

These new cross-domain teams not only need to integrate organizationally, but they also need an integrated IT management platform. In particular, siloed APM and NPM systems are problematic. They discourage collaboration, and they complicate efforts to correlate and analyze IT monitoring data up and down the infrastructure stack.

Many Enterprises Don’t Have the Right Performance Management Tools to Succeed

If enterprises are going to make the transition to hybrid infrastructure, IT organizations must take a hard look at the management tools they have in place. Not only must they examine the divisions between technology domains, but also assess how fragmented the management tools are within each silo.

EMA research has found a glut of management tools within IT silos. In particular, medium or large enterprises typically have between four and 10 network monitoring and troubleshooting tools in active use. Some large enterprises admit to using 25 or more.³ And these numbers do not even include so-called “shelfware,” management tools that are installed but never used. These numbers indicate that just within the network domain, IT is often using several tools to complete a single task. From a cross-domain vantage point, the management-tool picture becomes even more troubling. If each silo is cobbling together handfuls of tools to monitor and troubleshoot its own domain, how can IT organizations unify operations across domains?

Rather than collaborate across silos, IT organizations with these disjointed toolsets focus more on protecting their own turf. They evolve operational practices that are optimized to prove their domain’s innocence rather than solve the problem. When engineers gather in a war room to troubleshoot an issue, they point fingers at each other rather than work together. This blame game would be more difficult to perpetuate if various constituencies within IT operations were working within a unified IT operations platform based on common information.

Enterprises Have Recognized That They Need to Make a Change

IT organizations are adapting their operational tools and practices. As mentioned above, they are establishing cross-domain operations teams to support SDDCs. EMA research is also uncovering evidence that IT is changing how it procures IT operations tools. Thirty-nine percent of enterprises now require that their network management tools be integrated with application performance management systems, and 37% require integration of network management tools with end-user experience monitoring.⁴

³ Ibid.
⁴ Ibid.
The integration of APM and NPM systems gives two separate factions within IT operations a common platform for monitoring and troubleshooting infrastructure and services. If the application team and the networking team are looking at the same data set within the same context, they have an opportunity to work together on solving problems.

**Riverbed SteelCentral: A Platform Approach to Performance Monitoring**

Application performance, network performance, and end-user experience are all interrelated. If you have tools that measure each in a vacuum, you will have an incomplete understanding of your infrastructure. When IT operations combines monitoring and management systems into one platform, it streamlines workflows, both within and across silos. The IT team gains multiple unified perspectives on the same managed environment. IT also starts to understand how various infrastructure elements combine to provide an application environment. The dependencies among these domains become better understood, which makes it easier for IT operations to find the source of trouble.

Riverbed’s SteelCentral Platform combines packet-based and code-level APM with flow and packet-based NPM. While Riverbed offers several individual APM and NPM products under the SteelCentral brand, the company is aligning these systems to function as a single platform for IT operations.

SteelCentral Portal is the infrastructure-wide view that pulls together data from all these monitoring technologies and delivers insight on the entire application environment, from the network layer all the way to the application layer. SteelCentral Portal integrates Riverbed’s performance management products into an operational platform and visualizes enterprise infrastructure via an application-dependency map infused with live monitoring data. IT administrators can use Portal’s wizard-based application discovery feature to build a graphical service model for enterprise applications. This reduces the amount of time spent building a reporting framework for IT operations. It presents a topology map to the user with live performance data and metrics pulled from the various pillars of the SteelCentral Platform.

![Figure 1: Screenshot of Riverbed SteelCentral Portal high-level summary view of application performance.](image)
SteelCentral Portal integrates four core systems: AppResponse, an application-level packet analytics APM system; AppInternals, an APM tool that analyzes code metrics and infrastructure telemetry; NetProfiler, a network flow and packet-based NPM system; and NetSensor, a network availability and performance management system that utilizes synthetic testing and SNMP and WMI polling. More recently, Riverbed integrated its NetAuditor network configuration management system into Portal and the SteelCentral Platform. Within this platform, SteelCentral Portal serves as the front-end interface where IT operations can identify performance problems and drill down from anywhere to get contextualized insight from all of the various components of SteelCentral.

Recent Enhancements to the SteelCentral Platform
The aforementioned integration of NetAuditor into the SteelCentral Platform addresses a major problem that IT organizations have been struggling with for a long time. When EMA asked enterprises to identify the root causes of their last three difficult troubleshooting processes that required collaboration across technology domains, they indicated that network configuration changes were at least partially responsible for 42% of those difficult infrastructure performance problems.\(^5\)

Given the frequency of network configuration changes triggering performance problems, enterprises will see value in an IT operations platform that can correlate configuration changes with performance issues. With NetAuditor, Riverbed’s network change and configuration management system, integrated into the SteelCentral performance management platform, IT can now see which network paths that are experiencing performance problems as a result of configuration changes. These changes are presented in the context of overall application performance. IT administrators can drill down from SteelCentral Portal’s service map and see if a configuration change is causing a link failure or some other issue. This integration can reduce the time it takes IT operations to identify network configuration changes as the root cause of service quality problems.

In addition to front-end platform integration via SteelCentral Portal, Riverbed has also added direct integration between its APM systems. Code-level and packet-level application performance monitoring offer very different views of application health. If context can be established between these two views of application performance, IT operations can have a more complete picture of what is causing a problem. Riverbed has stitched together its packet-based APM product, AppResponse, and its code-level APM product, AppInternals, to provide better context between them.

With this new integration, application managers can streamline their troubleshooting process. Previously, when a complaint about performance was received, an application manager would often go into the AppInternals console to check on code-level health, server response times, and other metrics in the compute infrastructure domain. If those indicators were all right, the application manager might have to log out and look elsewhere. Now the packet-based AppResponse system is integrated. From within AppInternals, the administrator can pull network-based APM metrics, such as webpage object load times and network delay, from AppResponse. Viewing this data in the context of transaction traces in AppInternals gives two different perspectives on the same application. With this contextual drill down from AppInternals into AppResponse, the administrator can investigate network-based incidents from within the code-level APM tool. These integrations between the SteelCentral APM platforms help IT operations reduce the time it takes to diagnose an application performance problem.

**EMA Perspective**

EMA research and interactions with IT practitioners have revealed that enterprises are adopting hybrid, software-defined infrastructure that requires a new approach to IT operations. IT organizations need multidisciplinary cross-domain teams to operate SDDC architecture and hybrid cloud. These environments are too complex to manage with siloed management systems. IT teams need to consolidate and integrate their monitoring and troubleshooting performance tools.

A cross-domain performance management platform can help IT manage these complex environments more effectively and efficiently. These tools can collect and analyze data from multiple sources, including network flows, packets, device metrics, application transactions, and synthetic tests. Then they can present all of this analysis in one console with context. IT operations teams with disparate skill sets can collaborate within such a platform, pivoting from one point of view on the application environment to another to find the source of trouble and correct it quickly.

Riverbed is consolidating its SteelCentral product portfolio into an integrated performance management platform. First it established SteelCentral Portal as a front-end point of integration for its network and application performance management platforms that did the hard work of building a cross-domain monitoring and reporting framework. Now the company is providing further platform enhancements by directly stitching its two APM systems together for improved contextual operations. Riverbed has also enabled IT organizations to quickly visualize and understand how configuration changes affect application performance. These are the types of product enhancements that help enhance service delivery with a cross-domain operations group.

IT organizations need to consolidate and integrate their management tools if they are going to successfully operate hybrid infrastructure. EMA does not recommend that IT teams abandon all their specialized point management tools in favor of a single platform. There will never be a single management platform that meets every possible management use case in every technology domain. But EMA does recommend that enterprises enhance those point management tools with a unified performance management platform that enables cross-domain operations teams to work together to deliver high-performing, reliable applications and services. Enterprises that are struggling to unify IT operations should evaluate a platform like Riverbed SteelCentral to determine if it meets their requirements.

For more information about Riverbed SteelCentral, go to [www.riverbed.com/SteelCentral](http://www.riverbed.com/SteelCentral).
About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA's clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals and IT vendors at www.enterprisemanagement.com or blogs.enterprisemanagement.com. You can also follow EMA on Twitter, Facebook or LinkedIn.

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