

The Power of Two: Why Network and Application Visibility Are Better Together

An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) White Paper
Prepared for Riverbed

April 2015



*IT & DATA MANAGEMENT RESEARCH,
INDUSTRY ANALYSIS & CONSULTING*

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Executive Summary

Enterprises have long considered live visibility into both network and application activity to be “must-haves” for many aspects of IT planning and operations. But the greatest value and impact is achieved when those two viewpoints are brought together so that relationships and dependencies can be revealed and understood by multiple relevant stakeholders. Never has this need for unified visibility been more critical than it is with the move to the hybrid enterprise, through which IT leverages a mix of on-premises and cloud-based resources to meet the needs of the served organization. This report reviews the primary challenges that IT teams face in establishing unified visibility and the key requirements that management solutions must meet to address those challenges, and it examines a Riverbed solution that has been specifically designed to offer a path to success.

Business Drivers for Unified Visibility: A Focus on Service Quality

The network usually receives the blame for poor application performance. Sometimes this blame is warranted, but finding the truth behind service degradation is often difficult. IT operations teams need unified visibility into how applications interact with the network in order to assure service quality. However, unified visibility requires a detailed view of application dependencies overlaid with live data insights into application and networked-infrastructure performance, giving the operations team a cohesive view of service quality.

Many enterprises are experiencing a business environment where application and network performance and availability are essential to generating revenue and maintaining customer relationships. In a recent study by Enterprise Management Associates (EMA), IT decision makers identified “ensuring network performance” as their number one data center challenge.¹ Another EMA study revealed a shift in operational priorities for IT organizations, with 66% of enterprises saying they had increased their emphasis on service quality as a measure of success for the network management team and 55% identifying application performance as another measure of network management success that is growing in importance.²

Addressing these new business drivers is no simple task. Outages are still a common problem. EMA research revealed that 51% of enterprises experience network-related outages several times a month, if not more often.³ The same study revealed that 50% of enterprises experience application-related outages at least several times a month. In response to this environment, enterprise IT organizations have new requirements for their monitoring tools. This research found that two out of every five enterprises now require that network management tools be integrated with application performance management tools. Furthermore, with rapid rollouts of applications and services via the cloud and agile development methods, enterprises want a better understanding of application-to-infrastructure interdependencies. EMA research on advanced operations analytics and one-on-one interviews with operations teams have demonstrated that enterprises experience dramatic improvements in performance and availability when they apply application discovery and dependency mapping (ADDM) tools to their infrastructure and integrate those tools with performance monitoring tools.⁴

¹ EMA, “[Obstacles and Priorities on the Journey to the Software-Defined Data Center](#),” January 2014.

² EMA, “[Managing Networks in the Age of Cloud, SDN, and Big Data: Network Management Megatrends 2014](#),” April 2014.

³ EMA, “[The Many Faces of Advanced Operations Analytics](#),” September 2014.

⁴ EMA, “[The Many Faces of Advanced Operations Analytics](#),” September 2014.

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Barriers to Unified Visibility: What Keeps Networks and Applications Separated?

Many IT operations teams have a compartmentalized or fragmented approach to management tools, which presents a natural barrier to unified visibility. For instance, EMA research⁵ has consistently found that network management teams regularly use between four and 10 different monitoring tools. This proliferation of standalone tools adds complexity to performance management efforts.

When that type of tool proliferation is combined with the siloed nature of data center operations, monitoring becomes even more complex. IT organizations have evolved to have multiple functional teams tasked with managing separate technology stacks, including networks, servers, and applications. Each functional team has its own silo of monitoring tools to manage these technology domains. In most cases, these tools have evolved in isolation from each other. In a troubleshooting situation, each team turns to its own tools for root-cause analysis. There is no shared collaborative data set that gives an end-to-end view of services.

The source of performance problems might not be immediately obvious to a siloed management tool because the root cause might have to do with the relationships between infrastructure layers rather than with one particular part of the infrastructure. For instance, network managers will use a network performance management tool, and application administrators will use an application performance management tool. Both tools might detect performance degradation, but neither is able to get to the root cause of the issue on its own. Other times, none of the tools will detect a problem at all, and the operations team will only become aware of them when users complain. Consequently, operations teams will blame each other for a service problem rather than working together to resolve it. This situation can have a negative cascading effect on enterprises that require an agile IT organization. Operational overhead increases as valuable engineering resources are devoted to resolving issues, service interruptions last longer, and IT operations becomes less responsive to new business initiatives.

A true unified visibility platform that pulls together network and application monitoring can solve this siloed operational model, but the path to integration is not entirely clear. These monitoring tools have evolved separately over the years, and aligning these very different data sources into something that is useful and usable is challenging.

Requirements for Unified Network and Application Visibility

As enterprise applications become more componentized and networked, an understanding of relationships and dependencies between infrastructure and application elements is critical. A unified visibility architecture must be able to understand and present the relationships between application components and network components to provide an end-to-end view of a networked application. An ADDM tool can provide a good foundation for this relationship presentation. The unified visibility architecture should also provide near real-time data on the health and performance of application and infrastructure components within the context of the relationships and dependencies presented. This data can come from multiple sources, including network monitoring and application monitoring platforms. As the unified visibility tool pulls together and correlates this data from platforms that are typically used in isolation by siloed operations teams, IT starts to develop a 360-degree view of the health and performance of its applications and services.

⁵ EMA, "[Managing Networks in the Age of Cloud, SDN, and Big Data: Network Management Megatrends 2014](#)," April 2014.

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Multiple functional groups in the IT organization will need to use a unified visibility solution so that the silos can collaborate on service problems. Given that administrators and engineers with diverse skill sets will be sharing the unified visibility platform, it should be easy to use and should facilitate collaboration across multiple IT functions. Furthermore, this unified visibility should be made available to line of business managers and application stakeholders so that they are aware of IT's ability to maintain application performance and resolve service problems. This extension of infrastructure visibility will reinforce the value of IT to the business.

Riverbed SteelCentral Portal: A Solution to Unified Visibility

Riverbed's new SteelCentral Portal provides end-to-end visibility into end-user experience, network performance, and application performance. It's a front-end platform that draws monitoring data from Riverbed's suite of SteelCentral performance management products to provide a unified visibility console for IT operations teams.

The building blocks of SteelCentral Portal are two Riverbed technologies that were previously two distinct offerings. The first core technology is Riverbed's RPM Dashboards, a first-generation front-end dashboard and reporting engine that presented data from Riverbed's SteelCentral family of network and application performance management products. The second core technology is OPNET AppMapper, an end-to-end ADDM platform for enterprise applications and services. While AppMapper presented logical views of application and infrastructure dependencies, it did not present live performance data. To find that information, administrators had to dive into RPM Dashboards or individual monitoring tools.

By combining RPM Dashboards and AppMapper into a new front-end platform, Riverbed's SteelCentral Portal provides a single source of truth about application performance. It integrates user experience, application performance, system performance, and network performance data from any combination of these four Riverbed SteelCentral products:

- **SteelCentral NetSensor** (formerly OPNET AppSensor Xpert) – An infrastructure component monitoring platform that tracks the health and performance of network devices, servers, storage systems, and application components. It collects data through synthetic testing and protocols, such as Simple Network Management Protocol (SNMP) and Windows Management Instrumentation (WMI), to track device information.
- **SteelCentral NetProfiler** (formerly Cascade Profiler) – A network monitoring and reporting platform that analyzes and presents packet capture data from SteelCentral NetShark, flow data from SteelCentral Flow Gateway, and network data from Riverbed's SteelHead WAN optimization appliances.
- **SteelCentral AppResponse** (formerly OPNET AppResponse Xpert) – A network-based application performance management technology that combines application transaction data, end-user experience monitoring, and network intelligence for visibility into application performance.
- **SteelCentral AppInternals** (formerly OPNET AppInternals Xpert) – An application performance management platform that combines end-user experience monitoring, code-level application transaction tracing, and deep application component monitoring.

Riverbed has emphasized ease of use with SteelCentral Portal. Upon installation, it offers automatic and guided discovery and setup. Given that IT operations teams can use any combination of the four SteelCentral monitoring platforms as data sources for the technology, Portal is designed to automatically choose the best data sources when populating its interface with performance information.

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IT operations teams can get up and running quickly with Portal, which presents an application dependency map with real-time, integrated performance data. When administrators identify a trouble spot on the application map, they can dive deeper by clicking into the map for reporting and root-cause analysis capabilities.

Riverbed has also emphasized collaboration with Portal. It serves as a common front-end interface for a group of monitoring tools that are typically used by separate administrative teams in the data center. Portal gives network, infrastructure, user experience management, and application teams a single shared source of infrastructure visualization and performance data for troubleshooting service issues. It also offers role-based views tailored to the functional areas for which administrators are responsible, as well as summary insights for relevant managers, architects, and IT executives. Rather than working in isolation, these teams can work together, sharing the same monitoring data.

EMA Perspective

After years of providing siloed monitoring tools to the various administrative functions of IT operations, the infrastructure management industry has recognized that this fragmented approach is untenable. At least half of enterprises experience application- and network-related outages on a monthly, if not weekly, basis. In a business environment where applications are critical to revenue generation and employee productivity, siloed IT operations is unacceptable.

Enterprises need unified visibility into applications and infrastructure so that IT operations teams can work together with a shared collaborative platform that streamlines workflows. In particular, application visibility and network visibility need to be better integrated. However, the vendors who offer the tools traditionally used to monitor network/infrastructure and application performance have developed them in isolation from each other. They use different sources of data and different models for presenting that data. Enterprises need network and application monitoring data presented as an end-to-end service assurance view, with insight into application dependencies and real-time data.

Riverbed SteelCentral Portal is a leading example of a front-end platform that pulls together multiple mature network and application performance management platforms into a unified visibility console. It gives everyone in IT operations an intuitive view of the various dependencies of a networked application, with real-time performance data overlaid. It also grants administrators a visual means of identifying service problems by diving deeper into the platform for reporting and troubleshooting. With Portal, IT operations can better collaborate on service problems and streamline their workflows for faster resolutions.

About Riverbed

Riverbed, with more than \$1 billion in annual revenue, is the leader in Application Performance Infrastructure, delivering the most complete platform for the hybrid enterprise to ensure applications perform as expected, data is always available when needed, and performance issues can be proactively detected and resolved before impacting business performance. Riverbed enables hybrid enterprises to transform application performance into a competitive advantage by maximizing employee productivity and leveraging IT to create new forms of operational agility. Riverbed's 26,000+ customers include 97% of the Fortune 100 and 98% of the Forbes Global 100. Learn more at www.riverbed.com.

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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