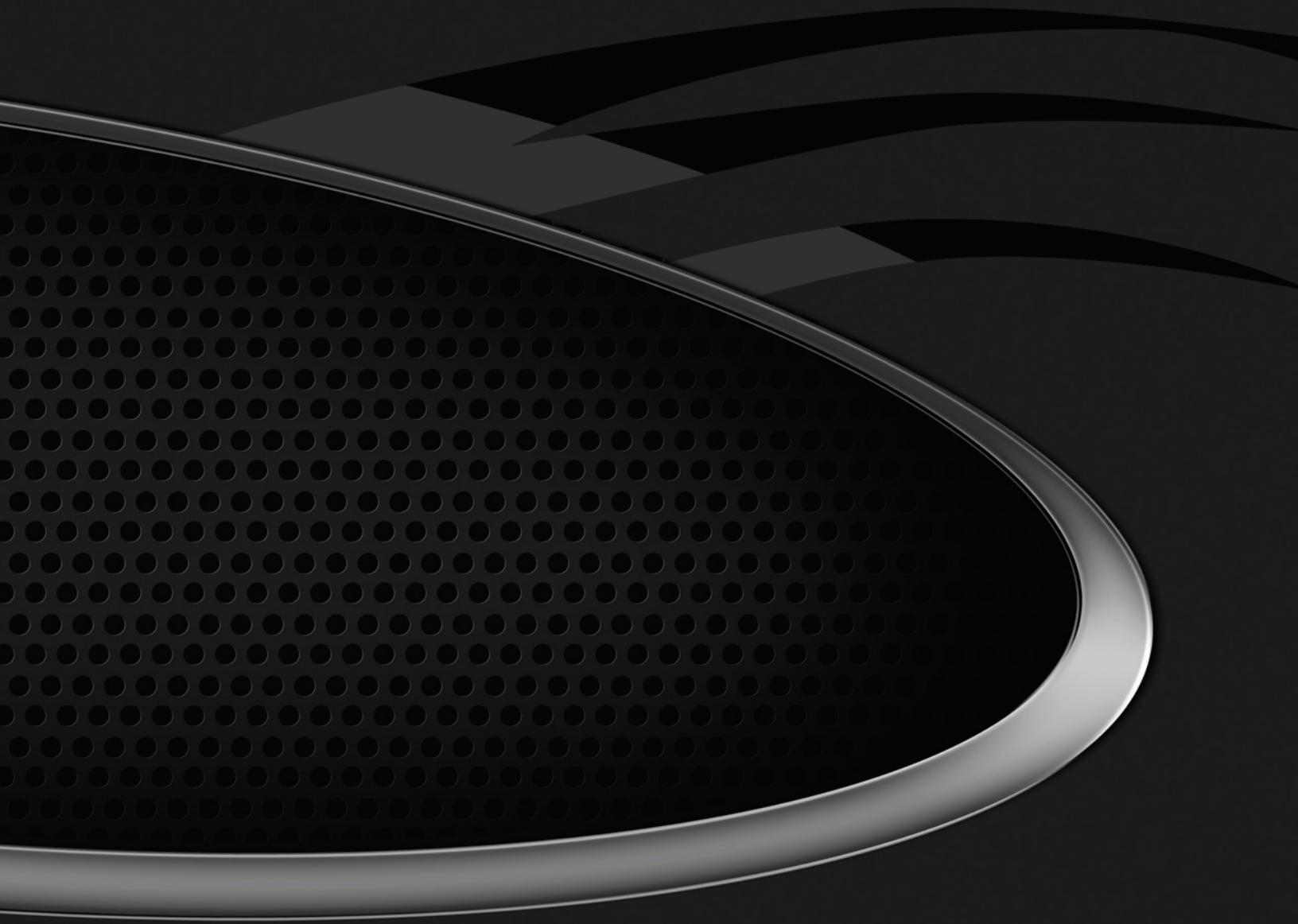
Riverbed® Cascade™



riverbed®

Think fast.™

"Riverbed Cascade has given us the end-to-end application visibility not found in our existing tools. I use Cascade frequently to identify and resolve performance and availability issues for infrastructure management and business-critical applications."

— Neil Wasserman, VP of IT, DTCC

Manage, Secure, and Optimize the Performance and Availability of Business Services

Server virtualization, data center consolidation, and Web services initiatives are changing the IT landscape. Organizations are increasingly finding significant gaps in their ability to secure and manage the availability and performance of key business services.

Riverbed Cascade™ combines visibility into end-to-end application delivery dependencies with Network Behavior Analysis (NBA) to address these management gaps. Riverbed's management solution spans network, security, and data center operations groups to provide application performance management, improved threat and compliance management, and CMDB discovery.

Cascade provides a new way of managing application performance and security by analyzing the interactions of users with the applications, systems, and network devices that comprise the application delivery infrastructure. Cascade delivers the critical data customers need to quickly resolve problems that affect service — such as unauthorized usage, availability and performance issues, and security threats — as well as to inform consolidation, virtualization and optimization initiatives.

How it Works

Cascade collects network flow data and enhances it with application and user identification, behavioral analytics, and network performance metrics. Because you can create groupings based on logical business categories, Cascade presents a complex infrastructure in a business context. Pre-defined and customizable behavioral analytics enable users to identify performance, availability, and security issues before they disrupt business services. Complete and accurate usage and dependency data provide the key inputs for making the right optimization and change management decisions. Cascade also provides an extensive set of integrations, which enable it to interoperate intelligently with other systems to increase their value and improve your workflow. Cascade's passive, agent-less deployment allows fast implementation.

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How it's Used

Cascade provides users the ability to effectively manage change in their IT infrastructures. As a result, customers are able to ensure the availability, performance, and security of business services as well as to reduce costs and satisfy regulatory requirements. Specifically, customers use Cascade for:

Application performance management – Behavioral analytics combined with user-defined policies deliver the information and enforce the policies needed to proactively assure service delivery. Contextual alerts provide the information needed to quickly resolve issues.

Improved security – Extensive analytics identify hard to- detect security threats such as zero-day attacks, "boutique" malware, and credentialed attacks.

Visibility into WAN and virtualized environments – Get full visibility into traditionally "blind" environments such as optimized WANs and virtualized systems.

Automated regulatory compliance – Visibility and reporting capabilities support automated planning and policy enforcement and reduce the effort and cost required to support audits.

Data center consolidations and moves – Application dependency mapping provides the information needed for proper planning. Change impact information ensures smooth implementation.

CMDB Discovery – Discovery and dependency mapping that is pervasive, continuous, and passive for coverage that is accurate, cost-effective, and enterprise-wide.

Key Capabilities

Proactive Service Assurance

- Define service-level objectives
- Monitor for service-level changes
- Enforce usage policies

Case in Point – An electronics insurance provider operates multiple call centers that service thousands of retail locations. When the WAN links between the call centers and their data centers became congested, service was disrupted. Without visibility into the WAN traffic, network operations personnel had no way of identifying the cause of the disruption. After several hours — with the revenue losses climbing — they contacted their security operations team to confirm that the problem was not due to a DDoS attack. Using Cascade, the security team immediately identified a new Exchange server that had come online and was consuming an increasing amount of bandwidth in a failed attempt to replicate. With this information, the network operations team was able to resolve the performance problem in minutes. Furthermore, they implemented a user defined policy to monitor core WAN links for proactive service assurance to prevent future revenue losses due to protracted performance problems.

Effective Planning and Risk Management

- Automatically identify assets and applications as well as their dependencies
- Understand actual usage
- Understand the impact of change
- Identify bandwidth utilization by application
- Forecast capacity needs
- Optimize investments and deployments

"The GUI is the best GUI I've seen in my life…the ease of immediate use is beyond description."

— Carl Cammarata, CISO, CUNY

Case in Point – A financial company was in the process of planning a data center migration. Cascade was implemented just prior to the move and immediately showed that there were a number of applications on the system that were improperly documented or completely unknown to IT and that the number of users who were accessing data center services was significantly higher than they had accounted for. Because Cascade was not available during the planning process, the company had used incomplete application documentation and out-of-date network maps. If the migration had moved forward, a number of critical applications would have been rendered nonfunctional and the business would have suffered serious disruptions. As a result, the company postponed the migration and integrated Cascade into the planning process.

Faster Problem Resolution

- Identify dependencies
- Distinguish between application response time and network latency
- Integrate context information into workflows
- Segment alerts based on operational role

Case in Point – An education organization was experiencing Internet access problems every day at 9:30 am. A sniffer had been on the link for weeks but they were seeing so many packets and so much activity that they couldn't decipher what was happening. They used Cascade to identify the top ports being used at that time, which applications were using those ports, and which clients were using those applications. They discovered that the anti-virus updates on a group of desktops had been mis-configured; instead of accessing an internal server, they were going to an external Internet site to download the updates and creating a surge on port 80. Correcting the mis-configuration resolved the daily slowdown.

Security

- Identify malware without signatures
- Identify internal or credentialed attacks
- Identify unauthorized applications, hosts, or servers on the network
- Understand the context of a security event
- Segment alerts based on operational role

Case in Point – A worm had broken out at a publishing company and two weeks later, the network security team was still trying to contain it. Within minutes of being installed, Cascade detected the worm, identified the infected hosts, and provided a containment plan. The company estimated that without Cascade, it would have taken them an additional 150 hours to contain the worm.

Cost-Effective Enterprise-Wide Coverage

- Passive deployment
- Centralized analysis console
- Intelligent interoperation with other systems

Case in Point – A retail organization with more than 100 stores across 13 states needed a solution to assure service levels across WANs that ran revenue-generating kiosks and services. Company controls prohibit the deployment of remote probes, precluding installation of a number of probe-based solutions. The company was able to achieve its goals cost-effectively with the deployment of Cascade, which required only a single, centralized deployment but gives them enterprise-wide visibility and coverage.

Riverbed Cascade Saves You Money

Reduced MTTR

Cascade's unique end-to-end view of the application delivery path expedites the troubleshooting process for both security and application delivery events. As a result, IT understands the inter-relationships among all the applications and the network and server components that work together to deliver application services to business users. This delivers savings by:

- Reducing revenue loss from business service disruptions
- Reducing troubleshooting staff-hour requirements of highly skilled network and security staff

Minimal Hardware Deployment

Cascade provides visibility and security with minimal deployment of devices such as IDS sensors or network probes. The lightweight deployment model scales by number of data centers as opposed to WAN links or remote sites. This delivers savings by:

- Significantly reducing capital expenditures required to reach full deployment
- Eliminating operations expenses related to maintaining remote hardware and agents

Optimized Use of Skilled Staff

Cascade's focus on ease of implementation and accelerating workflow reduces the amount of time spend by skilled staff on management processes. This delivers savings by:

- Increasing the percentage of workflow that can be completed at a lower pay scale
- Freeing up highly skilled personnel for problem avoidance and planning activities, eliminating the need to hire costly outside resources
- Reducing the overall operational expense of network, application, and security management processes

WAN Bandwidth Reduction

Cascade customers can avoid costly bandwidth upgrades by identifying and minimizing non-business use of expensive WAN resources. This delivers savings by:

- Assisting in prioritization of WAN links that would most benefit from optimization, enabling you to focus capital expenditures for best results
- Identifying cases where bandwidth upgrades can be avoided, reducing ongoing WAN expense

Minimized Business Service Outages

The Aberdeen Group estimates that, on average, outages and slowdowns affect revenues from business services by 9 percent. Cascade has unique abilities that enable early detection of and assurance against service disruption. This delivers savings by:

- Significantly reducing the time required to restore disrupted services which minimizes the operating cost of problem resolution
- Reducing the number of service-affecting incidents, thus maximizing services income

The last thing you need is just another management tool. That's why Riverbed is focused on providing solutions that deliver a superior return on your investment. As any of our 200+ customers will attest, Cascade:

- **Accelerates your existing workflows**
- **Augments existing management tools**
- **Optimizes the use of skilled resources**
- **Provides information to help you avoid costly security and performance events**
- **Provides value across multiple operations groups**
- **As a result, you save on both operating and capital expenditures.**

"After evaluating solutions from several vendors, we decided that Riverbed offered a product that could provide us with a clear and immediate picture of activity on our internal network and grant us the ability to respond efficiently and effectively to internal threats."

— David Olbrys, Global Infrastructure Security Coordinator, Cabot

How Cascade is Unique

Behavioral analytics – The practice of applying static thresholds to protocols across segments of a network or to server performance is no longer practical in today's complex environments. Cascade automatically learns the typical interactions between users, applications, and systems and automatically constructs performance and availability baselines. Advanced behavioral analytics identify abnormal activities and provide root cause and impact analyses so you can resolve issues before they affect business. You benefit from proactive problem resolution and reduced mean time to repair (MTTR) while ensuring the availability, performance, and security of business services.

Dependency mapping – Cascade automatically discovers the servers, network paths, applications, and users that comprise and communicate across your IT infrastructure as well as their interdependencies. User/application, application/server and server/server dependencies are used to construct interactive dependency maps that significantly improve troubleshooting and planning workflows.

Application delivery perspective – Cascade uses relationship data to construct an application delivery path between back-end servers in the data center and application users. This unique application delivery perspective significantly enhances troubleshooting and planning workflows and provides the foundation for effective service delivery monitoring. Cascade alerts use this information to automatically inform operations personnel of the most likely causes of security and performance issues and aids to assist in problem resolution and prevention.

User-defined policies – Cascade provides the ability to define and monitor authorized usage, security, and performance policies. Policy violations generate alerts that provide rich contextual information about the policy, the specifics of the violation, the affected users, and possible mitigation actions. This unique policy-based approach allows customers to better support regulatory compliance, IT governance, and business service best practices.

Application and user identification – Today's Web, virtualization, optimization, and multi-tier application platform technologies obscure the relationships between infrastructure, users, applications and business purpose. At the same time, effective IT management requires enhanced visibility into application usage – both end-to-end and across core network segments – to support today's performance and security requirements. Cascade provides this visibility by combining network flow data with layer 7 application fingerprinting and user identity information.

Enhanced workflow – Whether integrating with NMS, SEM, or CMDB systems, informing consolidation initiatives, or helping operations personnel troubleshoot and resolve performance and security issues, Cascade goes farther than any alternative offering to improve the existing workflows and operational productivity. It automatically provides valuable contextual information and integrates with and shares data with a broad range of management tools and systems. It enhances your ability to understand how business services are delivered across your infrastructure while leveraging existing investments to maximize ROI.

Conclusion

Riverbed is the IT infrastructure performance company whose industry leading WAN Optimization solutions give organizations an order-of-magnitude increase in the performance and value of their existing network, application, and storage infrastructure. With Riverbed, organizations no longer need to sacrifice IT strategy when cutting costs.

Riverbed frees business from common IT constraints by arming CIOs with WAN Optimization solutions that increase network throughput and application performance by up to 100 times; provide enterprise-wide network and application visibility; store three-to-10 times more data; and support distributed users better. Further, Riverbed lets companies achieve all this with the same amount of network bandwidth, storage and servers they have today. In fact, customers can often reduce their current IT infrastructure footprint after deploying Riverbed's products.

These capabilities may sound "unbelievable," yet they are market-proven by thousands of successful enterprise deployments. Riverbed helps budget constrained CIOs extract more value from their IT infrastructure without requiring significant upgrades to support operations in their data centers, remote offices or for their mobile users. With Riverbed, CIOs can effectively navigate this era of tight or shrinking budgets while continuing to support today's fluid, ever-changing, and increasingly dispersed enterprises.

Thousands of the world's most demanding businesses, including half of the Forbes Global 100, trust Riverbed to make their IT infrastructure faster, less expensive and more responsive – by an order of magnitude.

Riverbed: Believe it.

riverbed®

Think fast.™

About Riverbed

Riverbed Technology is the IT infrastructure performance company. The Riverbed family of wide area network (WAN) optimization solutions liberates businesses from common IT constraints by increasing application performance, enabling consolidation, and providing enterprise-wide network and application visibility – all while eliminating the need to increase bandwidth, storage or servers. Thousands of companies with distributed operations use Riverbed to make their IT infrastructure faster, less expensive and more responsive. Additional information about Riverbed (NASDAQ: RVBD) is available at www.riverbed.com

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