

Overview

To deliver IT performance, you need visibility. Whether you're managing major IT initiatives such as cloud computing and infrastructure consolidation, or just monitoring your existing business applications, Riverbed® Cascade® gives you a cost-effective, comprehensive way to manage network and application performance.

Riverbed® Cascade®

The Value of Network and Application Visibility

Managing a corporate network is an increasingly challenging task. You are expected to monitor and predict application performance, maintain security and manage external service providers. But high-bandwidth applications, cloud computing, branch office consolidation, WAN optimization, and other innovations are creating visibility gaps. While expectations from the network team have grown, many network management tools fail to provide a full picture of the modern IT environment. As a result, IT organizations have limited ability to deliver consistent performance to end-users, and identify the source of problems.

Can You Deliver IT Performance?

Do you often hear about IT performance issues from end-users, instead of discovering them yourself? Do these issues result in application outages? Can you quickly identify the source of problems once they occur? Does it take too long to gather network and application information in preparation for IT consolidation projects, data center moves, or WAN optimization deployments?

To deliver the performance that the business needs, you need a network and application visibility solution that is:

- **Real time** – providing up-to-the-minute performance information
- **Easy to deploy** – without having to modify your applications or your network
- **Proactive** – alerting you to problems before users call to complain
- **Comprehensive** – enabled for all types of networks and applications

Riverbed Cascade is an enterprise-wide visibility solution, covering all your data centers, offices, and mobile users. It collects network traffic data from devices such as switches and routers, and uses this data to discover applications and evaluate their performance. It uses advanced behavioral analytics to track performance over time and alert you to any deviations from normal behavior. That way you can resolve problems before end-users are impacted.

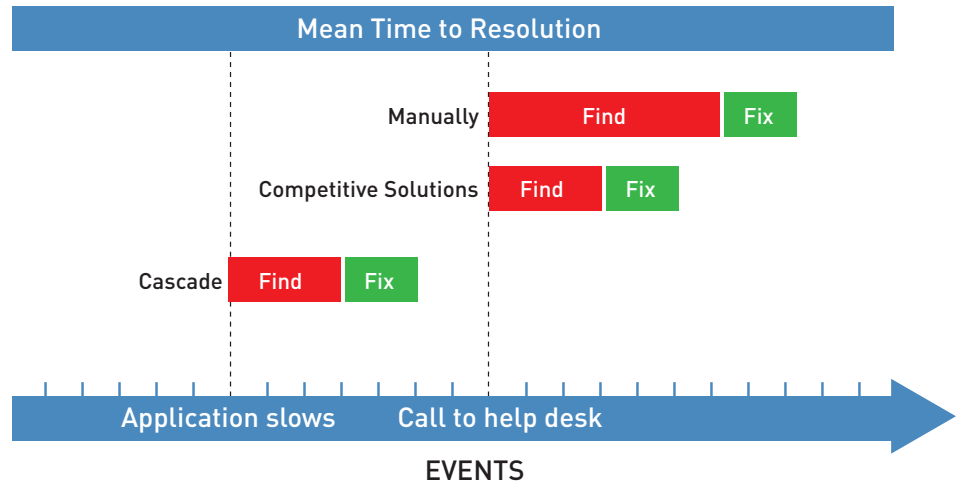
Cascade lets you drill down into network data to determine the source of any performance bottlenecks. It also provides a full graphical representation of server, application, and user dependencies, so you can resolve current application delivery problems and plan future IT investments.

Typical results include a three-year ROI of 364 percent and a payback period of just 5.5 months. Mean time to resolve IT incidents is reduced by an average of 83 percent, and the duration of help desk calls by 87 percent, according to third-party research*.

* "Achieving Business Value with Network and Application Visibility", by Lucinda Borovick and Randy Perry, IDC, April 2010

“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



With Riverbed Cascade, you can respond to IT performance problems faster.

Riverbed is leading the convergence of network assessment and acceleration, combining network and application visibility with the WAN optimization benefits of Riverbed Steelhead® products, and giving customers a complete solution for accelerating applications, adapting the infrastructure, and continuously assessing application performance.

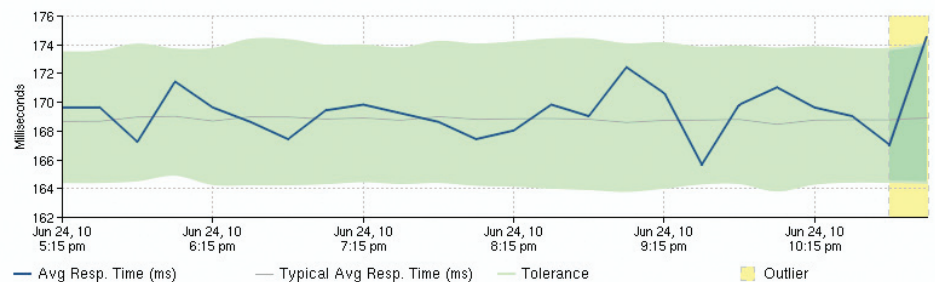
Managing Application Performance

Cascade monitors performance by tracking dozens of key metrics, such as application throughput and response time. It learns the normal behavior of applications on your network through a completely automatic, dynamic model, so you don't need to set any hard-coded thresholds. It even learns automatically which events happen on a daily or weekly basis. Cascade is an agentless, non-intrusive solution that doesn't require any physical probes in branch offices, providing an easy, cost-effective way to monitor a wide variety of applications.

Once a key application metric goes outside the normal range, Cascade sends an alert. An administrator can then troubleshoot the problem by drilling down into the network information with a few simple clicks. Cascade's business-centric views allow you to easily navigate from interfaces to applications, servers, and users.

If you're using Riverbed Steelhead® products to optimize your WAN, you can benefit from multiple levels of integration with Cascade, including the ability to find the best optimization candidates, quantify the benefits, and seamlessly report application performance across optimized and non-optimized sites.

Current vs. Typical Average Response Time (ms)



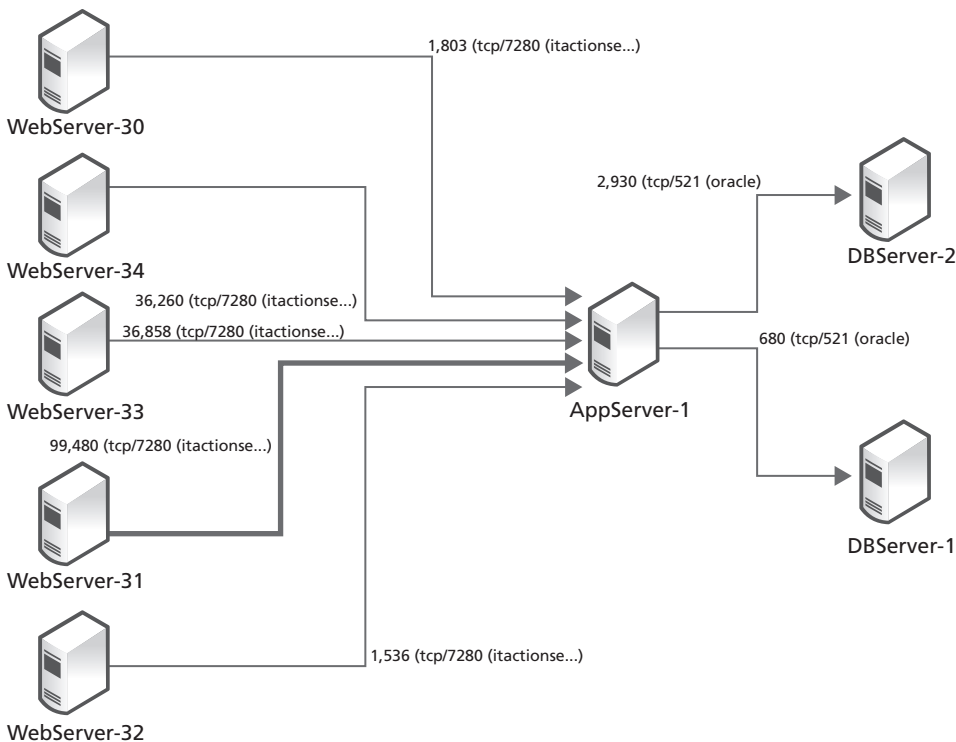
Cascade learns normal application behavior and alerts you to any meaningful changes.

Consolidating IT Infrastructure

Whether you're consolidating a few servers or entire data centers, you need a cost-effective way to discover applications and devices on your network and who is using them. Cascade saves you money because:

- It's a cost-effective, agentless solution that can discover all systems within hours, identify server and client dependencies, and help you understand the impact of your proposed changes.
- The quicker you finish the discovery phase, the sooner you can move to your new, lower-cost environment, and get rid of inefficient or underutilized servers.

Discovery and dependency mapping are also invaluable for disaster recovery initiatives, helping you find which systems to protect and what capacity is needed at the backup site. Cascade helps you ensure the availability and performance of the backup software and start recovery faster.



Cascade discovery and dependency mapping significantly simplifies the IT consolidation process.

Achieving Security and Compliance

Behavioral analytics and real-time alerts can be used to deliver security to your organization, as well as performance. Behavioral changes may reflect worms, unauthorized connections, scanning, and other security threats. An analytics-based approach allows identification of advanced attacks such as zero-day, "boutique" malware and threats from credentialed insiders. Intrusion detection is key to achieving compliance with regulatory requirements and IT mandates.

How Cascade Works

Cascade collects network flow data from routers, switches, and other devices, and augments it with layer 7 application identification obtained via packet inspection. If the same flow is reported multiple times, Cascade deduplicates it for accurate reporting. It stores flow information and uses it to measure performance metrics, identify changes from normal behavior, and generate reports and alerts.

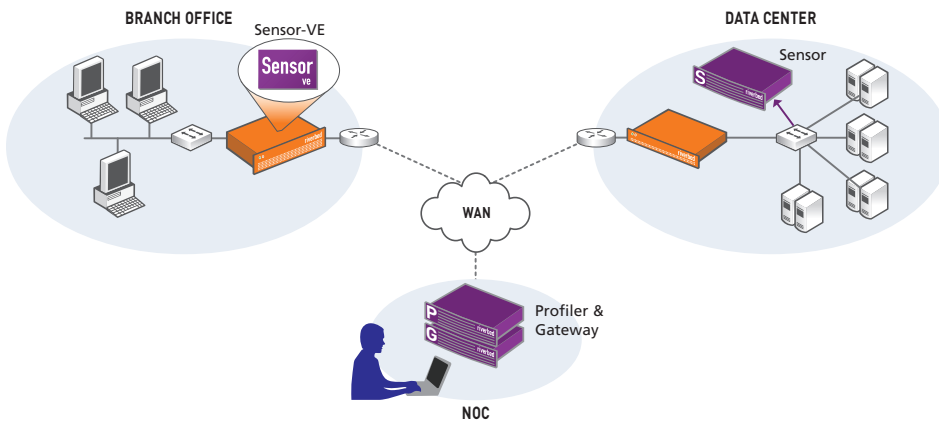
“With Cascade, we can provide senior management with information on the IT infrastructure that can help them make better business decisions that save money, resources, and efficiencies. This has elevated our IT group from just providing a utility to contributing meaningfully to the business.”

— *Christophe Duprat, IT director, International Herald Tribune*

Cascade consists of four components:

- **Gateway** – Collects flow data, supporting all flow types (NetFlow, sFlow, IPFIX etc.)
- **Sensor** – Captures packets from SPAN ports or taps, provides layer 7 application classification, and collects performance metrics; usually deployed in the data center
- **Sensor-VE** – Virtual edition of the Sensor, deployed in branch offices
- **Profiler** – Provides reporting and analysis of the collected data and sends alerts

Gateway, Sensor, and Profiler are appliances that are sized based on the number of flows per minute or the network interface. Sensor-VE is deployed as an RSP package on a Steelhead appliance. Cascade does not use agents or synthetic transactions, nor does it require physical probes in branch offices.



Cascade components as typically deployed in the data center and branch office.

Key Benefits

An ROI study of Cascade customers, conducted by IDC in 2010 on behalf of Riverbed, found a remarkable three-year ROI of 364 percent and a payback period of just 5.5 months. The study uncovered benefits in several areas:

- Improvements in IT staff productivity, cost reduction, and an increase in user productivity due to less downtime, resulting in average annual benefits of \$31,679 per 100 users.
- Average MTTR was reduced from 12.8 hours to 2.1 hours.
- Average duration of help desk calls was reduced by 87 percent because the help desk staff more easily identified the source of problems and estimated the resolution time.
- \$53,431 average annual savings on server purchases and \$123,449 average annual savings on tool purchases.
- 34 percent fewer downtime incidents per month; the average incident duration cut by 51 percent.

Want to learn more about Cascade?

Contact Riverbed, the IT performance company, for more information on the products and solutions that are right for you. Thousands of companies world-wide trust Riverbed to achieve cost savings and deliver strategic advantage over the competition. Visit www.riverbed.com for more information.

About Riverbed

Riverbed Technology is the IT 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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