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OPNET APPRESPONSE XPERT

REAL-TIME APPLICATION PERFORMANCE MONITORING BASED ON ACTUAL END-USER EXPERIENCE

BUSINESS CHALLENGE

Problems can happen anywhere — at the end user device, on the network, or across application infrastructures and networks. IT operations staff often know there's a problem but can't get to the right level of analysis quickly or easily enough. Frequently, expert staff must be taken off key projects in order to troubleshoot the issue.

IT operations teams need a performance management solution that provides visibility across the entire application delivery environment. They need intelligence into the end-user experience, application transactions, and network performance to quickly diagnose root cause before the enterprise is impacted.

THE RIVERBED SOLUTION

Riverbed® OPNET AppResponse Xpert® joins together advanced application and transaction insight, comprehensive end-user experience monitoring, and deep network intelligence into a single appliance to provide total visibility into your application performance problems.

It helps you discover where and when bottlenecks are occurring so that you can troubleshoot problems faster, and it streamlines workflows and reporting to enable cross-team collaboration and put an end to finger pointing.

Use it to gain actionable insights to monitor and improve business-critical application performance and make users happy.

OPNET AppResponse Xpert passively monitors the network and collects packet, application, and transaction data for continuous monitoring and fast troubleshooting. Using high-speed packet acquisition and multi-stage analytic processing, it delivers powerful capabilities, such as automatic application discovery and rich application insights, end-user experience monitoring for web and non-web applications, and response time decomposition.

Moreover, it delivers real-time and historical application transaction analytics, VoIP and video quality monitoring, and deep network intelligence.
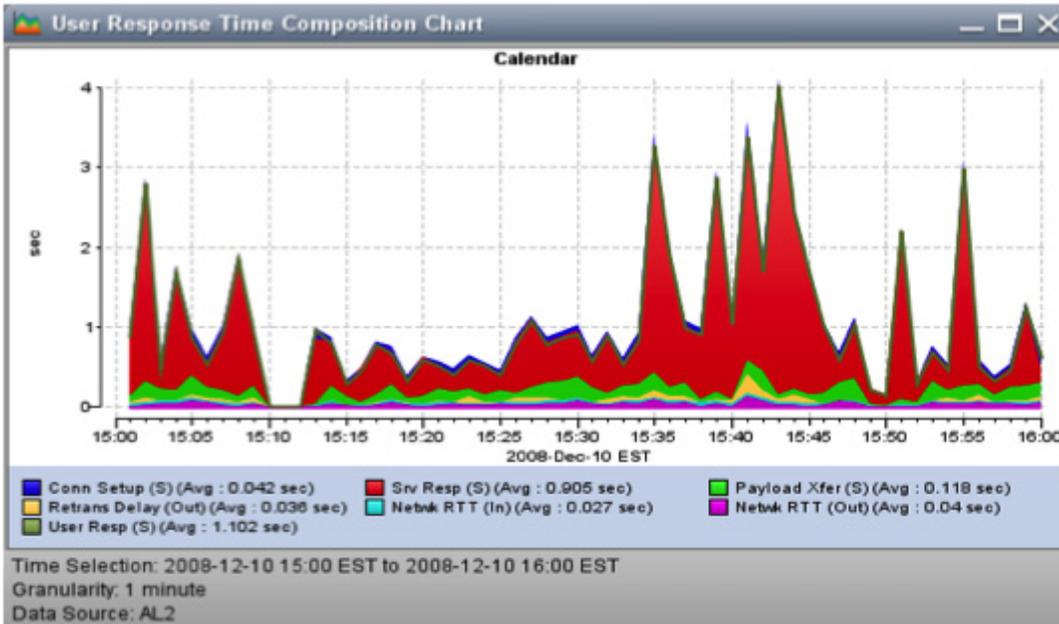
Figure 1. OPNET AppResponse Xpert automatically calculates a breakdown of user response time into network and server delay so you can quickly determine where the problem is occurring.

ADD-ON MODULES

A variety of optional modules provide specialized analysis capabilities, including:

Deep network intelligence

- AppResponse Xpert Shark module adds rich network intelligence to supplement the existing end-user experience monitoring and transaction analysis provided by OPNET AppResponse Xpert. It speeds troubleshooting with streamlined workflows and deeper network insight, letting you get to the right level of information needed to solve problems quickly and easily

Per-user Citrix transaction analysis

- CX-Tracer™ module provides unprecedented end-to-end visibility into Citrix XenApp user transactions, enabling you to quickly pinpoint the root cause of Citrix performance problems. CX-Tracer automatically correlates front-end user sessions to their back-end counterparts, enabling end-to-end analysis of individual Citrix XenApp user sessions to quickly determine why performance is slow and whether the problem originates with the client, network, server, or application.

Database transaction analysis

- Database performance module identifies the impact of the database on end-to-end application performance. By monitoring database performance at the transaction level, you can identify the particular SQL statement or database call responsible for application delay and equip your database team with actionable information. Its agentless approach introduces zero overhead on database operation and does not require privileged access to database systems or database diagnostics logging.

VoIP and video quality monitoring

- Unified communications module monitors and reports on live VoIP and video call quality, enabling you to proactively manage the performance and user experience for a broad range of VoIP and video services for enterprise and call center environments. Proactively resolve communication issues by monitoring IP voice, video, and data traffic side-by-side to determine how application services are being delivered and compete for common resources.

NetFlow reporting

- NetFlow Monitoring module collects and analyzes NetFlow records, providing visibility into remote traffic for capacity planning and network traffic analysis.

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KEY BENEFITS

» MINIMIZE DOWNTIME

- Rapidly identify and triage problems
- Detect emerging performance issues before users are materially impacted
- Ensure performance of web-based business transactions

» IMPROVE IT PRODUCTIVITY

- Enable operational consistency
- Reduce "finger pointing" among IT teams
- Proactively manage usage and performance trends

» REDUCE COSTS

- Protect user experience and minimize impact of downtime on business
- Reduce risks and avoid costs through strategic planning
- Reduce tool complexity

KEY FEATURES

End-user experience monitoring

- Monitor end-user experience for all users, all applications, all the time
- Its agent-less approach introduces zero overhead
- Break down application response time into contributing sources of delay
- Monitor and analyze performance of web applications at the page level

Support for large-scale deployments

- Supports up to one million connections through an intelligent and scale-as-you-grow performance architecture
- Improves ROI by increasing throughput and number of connections in a single box by 50 percent

Application visibility

- Automatically discover applications
- Track performance by application, user, transactions, business division, and location
- Measure performance of VoIP calls while they are in progress, including Microsoft Lync VoIP
- Monitor and troubleshoot high-definition video quality, such as Cisco TelePresence, Cisco Tandberg, and Polycom telepresence systems

Transaction analysis

- Report web application performance for all individual transactions
- Trace user transac¬tions over Citrix XenApp servers for end-to-end visibility
- Monitor performance of database transactions, pinpointing specific SQL statements responsible for application delays
- Supports Oracle, SQL Server, DB2/UDB, Teradata, Sybase ASE, and Informix databases

Network analysis

- Network traffic monitoring
- Support for NetFlow v5, v9, sampling, J-Flow, sFlow, and IPFIX
- Troubleshoot DNS and network-layer issues
- Troubleshoot quality of service (QoS) issues and DHCP
- Monitor microburst activity and alert with microsecond granularity

Miscellaneous

- One-minute resolution for aggregated performance statistics is more precise than the typical 5- and 15-minute collection intervals
- Stores performance and forensic data in large capacity, long-term storage for sub-sequent troubleshooting, trending, and capacity planning
- Alert against SLA violations using dynamic thresholds that automatically adjust limits based on historical performance
- Seamlessly drill down from dashboards to details for fast root cause analysis
- Export flow data to Riverbed Cascade® Profiler for end-to-end network monitoring, troubleshooting and reporting

Deployment and customization

- Flexible deployment options include both hardware and virtual appliances
- Diverse family of appliances supports a broad range of throughput and storage requirements
- Virtual appliances restore visibility of traffic between virtual machines within a server
- Dashboards and reports are easily customizable to provide application-specific, intuitive screens and workflows adapted to your needs

PROJECT INTEGRATION

- Cascade Profiler application-aware network management solution provides enterprise-wide reporting and analysis, combining data from Cascade Gateway, Cascade Shark, Steelhead, and OPNET AppResponse Xpert appliances, as well as virtual solutions into a single, integrated view.

- Cascade Pilot packet analysis software uses an intuitive, graphical user interface to help you work faster by rapidly isolating the specific packets needed to diagnose and troubleshoot complex performance issues. It enables you to quickly analyze multi-terabyte packet recordings on remote OPNET AppResponse Xpert appliances without having to transfer large packet capture files across the network. Because Cascade Pilot uses indexing to speed analysis, it can quickly dissect large trace files to focus on specific transactions for multi-tier user transaction analysis and performance prediction in Riverbed OPNET AppTransaction Xpert®.

- OPNET AppTransaction Xpert software provides detailed analysis of multi-tier application transactions. Using code-level and network-level forensic data from OPNET AppResponse Xpert and other sources, it builds a detailed transaction model for root-case analysis and predictive studies.

- OPNET AppMapper Xpert® software automatically discovers application and infrastructure relationships to create a runtime application dependency map. It leverages the instrumentation from OPNET AppResponse Xpert® and other Riverbed OPNET solutions to build a comprehensive model of the application ecosystem.

- OPNET AppResponse Xpert® BrowserMetrix software utilizes JavaScript instrumentation to measure actual end-user experience for web applications.

- OPNET AppSensor Xpert® software provides broad infrastructure monitoring for a more complete picture of the application's operating environment. It uses remote instrumentation interfaces to capture performance information from servers, application components, the application delivery network, and vendor-specific management systems.

- OPNET AppInternals Xpert® software traces user transactions through the application and provides deep monitoring for the individual components.
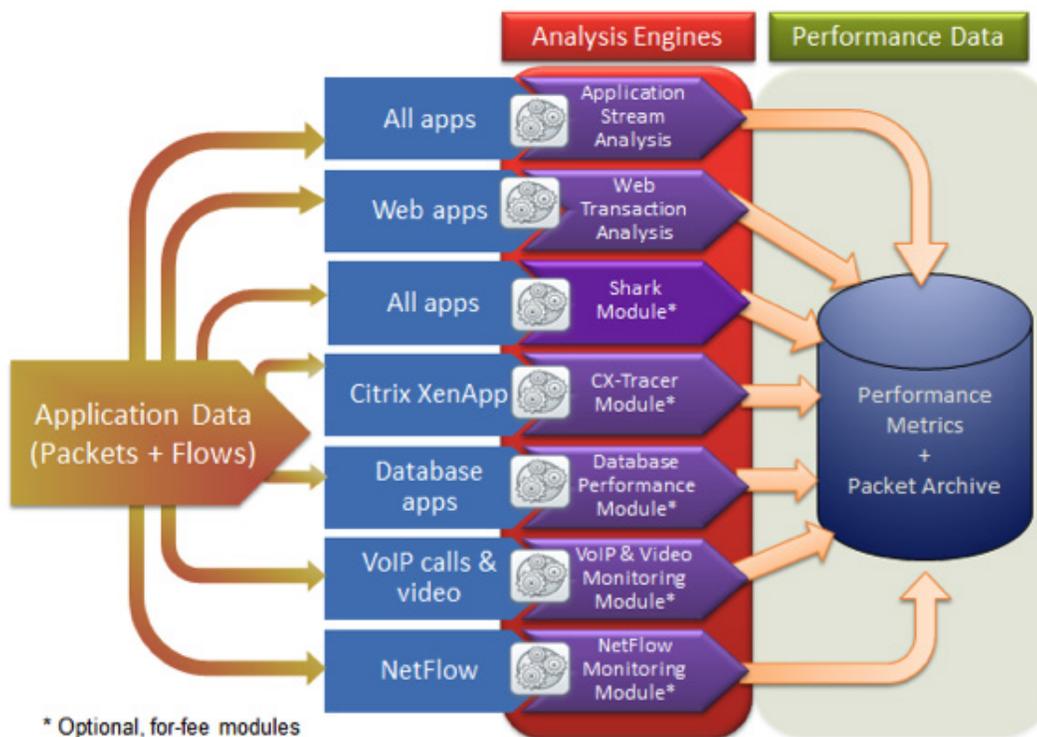

Figure 2. The OPNET AppResponse Xpert appliance provides end-user experience monitoring, transaction analysis, and deep network intelligence, allowing IT operations teams to deploy a single appliance in key locations to monitor and troubleshoot performance problems faster and more easily.

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PRODUCT MODELS

OPNET AppRespose Xpert Appliance Family		
Model	**Monitoring Interfaces**	**Storage**
ARX 1200	3 x 1G (Fiber/Copper) 1 x RJ45 (10/100/1K)	3TB
ARX 2200	3 x 1G (Fiber/Copper) 1 x RJ45 (10/100/1K)	3TB
ARX 3300	4 x 1G (Fiber/Copper)	6TB
ARX 3800	4 x 1G (Fiber/Copper)	16TB
ARX 4300	4 x 1G (Fiber/Copper)	29TB; expands to 173TB
ARX 5100	2 x 10G (Fiber)	42TB; expands to 186TB
ARX 6000	2 x 10G (Fiber)	48TB; expands to 264TB

OPNET AppReponse Xpert Hardware Options	
Model	**Description**
AppResponse Xpert Director 300	Central administration for multiple physical / virtual OPNET AppResponse Xpert appliances
ARX Expansion Chassis 300	Optional 72 TB expansion chassis for ARX 4300, 5100 and 6000 appliances

OPNET AppResponse Xpert Software	
Model	**Description**
AppResponse Xpert VMon	Virtual appliance that runs as guest VM on ESX/ESXi servers; available in 60GB and 260GB versions
AppResponse Xpert v2000	Available in 60GB and 260GB versions
AppResponse Xpert Rover	

RIVERBED: THE APPLICATION PERFORMANCE COMPANY

With products and solutions including WAN optimization, performance management, application delivery, and storage acceleration, Riverbed helps organizations manage and accelerate performance.

To learn more about Riverbed performance management and other Riverbed products and solutions, visit **riverbed.com/rpm**.

GARTNER MAGIC QUADRANT RECOGNITION

We're a leader in the Gartner Magic Quadrant for Application Performance Monitoring