riverbed

Solution Brief

Synthetic Monitoring for Hybrid Enterprises

In today's application-centric world, end-user performance is a key metric by which businesses evaluate the performance of their web and enterprise applications.

Achieving a holistic view of your critical application environment on-premises and in the cloud requires the integration of multiple approaches and instrumentation across the application delivery chain. There are two primary approaches to measuring end-user experience:

- Real user monitoring (RUM)
- Synthetic monitoring

Real user monitoring provides powerful insights of actual experience of users as they use the applications. While synthetic monitoring gives IT organizations a powerful capability to identify issues before they impact users.

Real User Monitoring

Businesses today use real user monitoring to evaluate their customers' and employees' digital experiences. Real user monitoring measures one of the most critical metric, the users' actual experiences as they interact with applications. RUM constantly observes the system in the background, tracking availability, functionality, responsiveness, and other metrics.

Real user monitoring or end-user experience (EUE) monitoring aims to capture and analyze every transaction of every user of your website or application.

Synthetic Monitoring

Synthetic monitoring is a method used to monitor your applications by simulating users. It is an active testing methodology and very useful for measuring availability and response time of critical web sites, system transactions and applications.

How it Works

Synthetic testing uses distributed test engines to proactively test availability and performance of your applications and web sites—even when there is no real user traffic. With synthetic monitoring, scripts or agents are deployed across the globe at key user locations to simulate the path an end-user takes when accessing on-prem or cloud applications.

Benefits of Synthetic Monitoring

Proactively identify issues before your users notice
Synthetic monitoring does not require users to monitor the performance and communication health of an application. You can know how the packets flow between potential users and on-prem or cloud-hosted applications.

Enterprise Management Associates (EMA) latest survey[1] found that 39% of all network problems are experienced and reported by end users before network operations is aware. Synthetic monitoring is that holy grail for NetOps, DevOps and SecOps—being proactive and identifying issues to fix even before users notice it.

Always know your user experience round the clock
Modern apps are spread all across the cloud data centers such as Azure, AWS, GCP and others. Add to this mix, the unabated growth of SaaS applications such as O365, Workday, Zendesk, Zoom, SFDC and the list goes on. How do you ensure your users will get the performance you want to provide them 24/7? You can run continuous, simultaneous testing and always know the state of your user experience with or without users.

Take monitoring where your applications go
Deploy your application infrastructure to meet seasonality, unplanned demands, roll out an app as a competitive response or respond to an event such as the pandemic. Roll out your apps at the pace your business demands and NetOps will be right there in lock step. Synthetic testing gives tremendous flexibility with light-weight infrastructure that can be turned on instantaneously.

Monitor complex interactions live or pre-release
Synthetic monitoring allows you to emulate business processes and user transactions between different business applications in your live application environment. You can understand performance and user experience across critical infrastructure such as load balancers, web servers, firewalls, authentication infrastructure, databases and storage. It allows DevOps and NetOps to test the application before launch.

Baseline and objectively measure application SLAs
Using synthetic testing you can baseline and benchmark data to analyze trends, and variances between peak and off-peak hours. Managing SLAs is very important today as many companies rely on third-party vendors to host all or some of their applications. Synthetic testing affords you the ability to monitor performance of any in-house or third-party web application at frequencies you want to validate and from locations you choose, at any time. It can be used to ensure quality service delivery, accelerate problem identification, protect customer experiences and report on the SLA compliance of internal and external providers.

Riverbed Solution

Real-time user monitoring and synthetic monitoring bring their unique strengths addressing distinct visibility needs of IT operations. They are complementary capabilities that IT organizations must have in their NPM repertoire. Riverbed NPM provides both synthetic and real-time user monitoring giving you a complete view of performance from the end user perspective. Riverbed NetIM provides synthetic monitoring while AppResponse provides real-time user monitoring. Our modular architecture allows you to start with either functionality and expand to the other to meet your most critical and immediate need.

Riverbed NetIM

Riverbed® NetIM is a holistic solution for discovery, modeling, monitoring and troubleshooting your infrastructure that supports the hybrid enterprise across on-prem data center, cloud and SaaS applications. It enables companies to capture infrastructure topology, detect performance and configuration issues, map application network paths, diagram your network, and troubleshoot infrastructure problems. As an integrated component of the Riverbed's unified NPM, customers can manage infrastructure issues in the context of overall, blended performance management. NetIM supports flexible deployment models and can be implemented on-premises or in the cloud giving operations maximum agility.

[1] Enterprise Management Associates (EMA): Network Management Megatrends, 2020

Key Benefits of NetIM

- Increase IT infrastructure visibility and understanding
- Improve anomaly detection and enhance service availability
- Troubleshoot infrastructure issues with actionable intelligence
- Scale easily and efficiently with modern architecture

NetIM uses SNMP, CLI, Traps, Syslogs and API polling as well as synthetic testing to capture availability and performance information from remote infrastructure components, including network devices, servers, and applications.

You can dramatically reduce the workload associated with managing and monitoring your infrastructure with NetIM. It maximizes network availability by reducing performance blind spots, empowering proactive infrastructure management, and improving troubleshooting.

Built on modern containerized architecture, NetIM provides elastic scalability, superior performance, and flexible cloud deployment. This architecture enables various services to be decoupled and run independently as microservices in different containers. Kafka, a distributed messaging framework, provides a unified, high-throughput, low-latency stream to handle real-time data feeds. Without a need to share the underlying system specifications of a single VM, NetIM services can easily scale and deliver superior performance.

Our solution provides a variety of synthetic tests, including Ping, DNS, TCP, LDAP, databases, HTTP, external scripts for creating your own tests, and Selenium tests for recording and playing back web transactions.

With NetIM, you can test business-to-business web services that use SOAP, REST or other web services technologies to validate and baseline interactions. Synthetic testing can simulate searching (database), adding items to cart (web application), logging in (identity validation), etc., in order to measure performance of holistic application interactions.

Its ability to reliably measure website and application performance from select destinations, across predefined user paths, at any intervals and at any time of the day makes it a very powerful capability for NetOps, DevOps and SecOps.

Key capabilities of NetIM includes:

- Synthetic Monitoring
- Automated Analytics
- Topology Visualization
- Troubleshooting
- Alerts and Reports

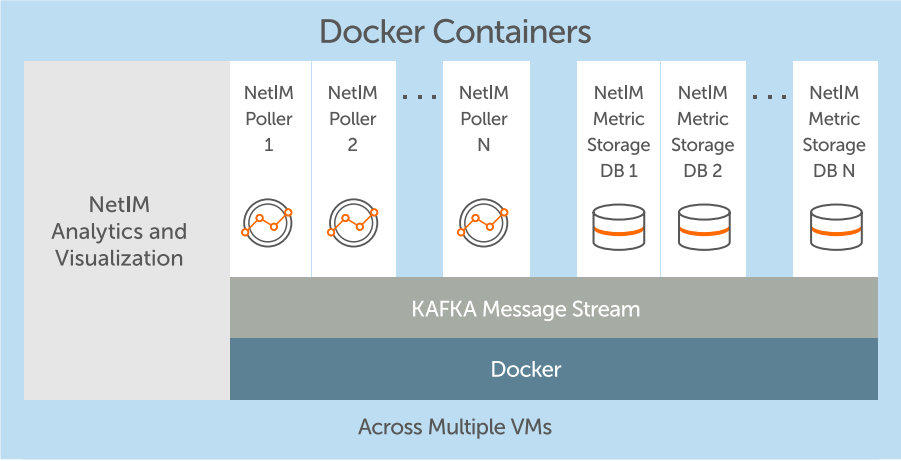

Figure 1: Riverbed NetIM containerized architecture.

Power of Riverbed Unified NPM

Riverbed's unified network performance management solution gathers all packets, all flows, all device metrics—all the time. It does this across all environments, on-premises, virtual, and cloud, to enable business-centric views across all your domains. It also integrates with end-user experience and application performance monitoring so that you can understand the impact of network performance on critical business processes.

Get Started Now

Riverbed can help you with end-to-end visibility and actionable insights. You can quickly and proactively resolve any network-based performance issues with our unified NPM solution.

For more information on synthetic monitoring and NetIM, visit riverbed.com/NetIM.

About Riverbed

Riverbed enables organizations to maximize performance and visibility for networks and applications, so they can overcome complexity and fully capitalize on their digital and cloud investments. The Riverbed Network and Application Performance Platform enables organizations to visualize, optimize, remediate and accelerate the performance of any network for any application. The platform addresses performance and visibility holistically with best-in-class WAN optimization, network performance management (NPM), application acceleration (including Office 365, SaaS, client and cloud acceleration), and enterprise-grade SD-WAN. Riverbed's 30,000+ customers include 99% of the *Fortune* 100. Learn more at riverbed.com.

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