

User Experience Observability

Observe All That Matters

How Active and Real User Observability provide comprehensive web performance insight

LogicMonitor | Digital Experience

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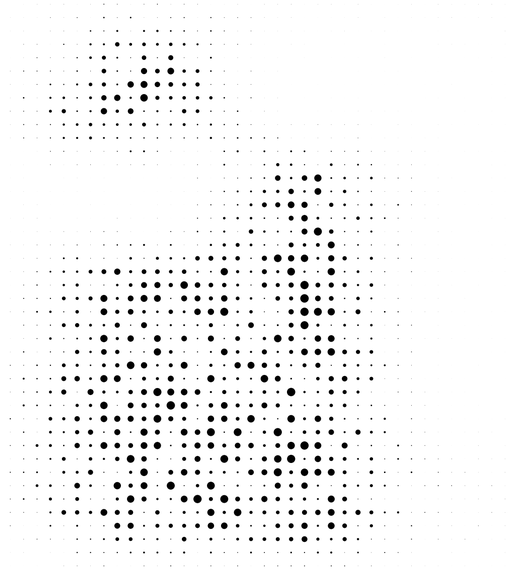
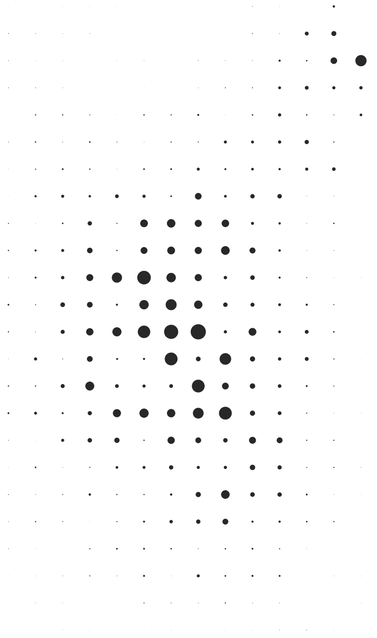


The Complexity of Modern Web Infrastructure

There is no doubt that as our lives and businesses have become more and more reliant on online systems, the complexity of those systems has increased dramatically. A modern website is now likely to draw content and services from a number of different servers and data centers, a third party DNS infrastructure, multiple CDNs and load balancers, site accelerators, social sharing widgets, and any number of third-party tracking tags and pixels.

All of these components add to the functionality of the site, yet each one also represents a pitfall where performance can go awry. That's even before you take into account all of the different variables on the user's end, such as what kind of device they're using, the browser and OS they're running on that device, their CPU, and memory capacity. These are all elements that need to be observed and tracked in order to know how your end users are interacting with the site and how your systems are operating.

In order to observe those elements, you need an arsenal of tools that give you insight into the performance of your online systems. That includes an external point of view to get the perspective of real end users, as well as data pertaining to the network paths that users come in on, the way your traffic flows across the network, and the observing of internal applications and server health.



A complete view

While internal metrics are important, no application performance management strategy is complete without having a comprehensive view of the end-user or customer experience and all the elements that can affect that experience, whether at the browser level or within the many layers of infrastructure and services that support any given website.

The way to obtain this complete view is to simulate an end user's interactions with your site, then constantly test your site with those simulated users, and observe actual user activity. Active and Real User Observers are the respective Catchpoint methods for providing complete observability of your customers' experience with your site.

What's at stake?

When customers encounter a site that is slow, unreliable, or inefficient, they're very unlikely to come back to it. Regardless of the industry you're in, delivering an optimal customer experience is paramount to your business's bottom line.



Real User Observability

Real User Observability, or Real User Measurement (RUM), is a passive tool. It uses code placed on a website or mobile application that transmits performance metrics on user engagement visibility. As your site receives visitor traffic, the JavaScript automatically sends data on those users' experiences back to your observability service. No further intervention is required, hence the use of the term "passive".



RUM data comes from real users, regardless of what geo location they're in, ISP they're using, device or browser. You passively collect data, analyze it, and make sound business decisions based on what your users are reporting to you about their real experience.

A Real User Observability tool is not only used to understand performance from actual users, but also to understand how performance impacts your business and how it drives revenue. Do you lose customers if they bounce because of a site outage or slowdown? How much do performance levels affect conversion rates?

You can observe how your users are interacting with your site, and correlate your site's performance to those interactions. You can then make sound business decisions on where to improve the performance of your site and make additional investments in your web infrastructure.

RUM can tell you a lot about your customers. Are they coming over a certain ISP? Are they coming over certain network types such as a mobile network, WiFi network, or tier 1 broadband network? Are they coming on a certain device, such as an Android, an iPhone, OSX, or Windows? Are they using a Chrome browser or Internet Explorer?

What are your users doing?

Once you've identified your users' characteristics, you'll need to know what part of the site they're interacting with — whether it's the checkout or log-in page. This lets you see which pages are the most trafficked parts of your site.

This can provide you with insights into what kind of customer experience you're delivering under various conditions. For example, you can see if your site can handle the heaviest traffic volumes. You can see if your site performance is consistent across different end user devices, browsers, operating systems, mobile networks, or geographies. You can see which pages customers are visiting the most and optimize your performance across the most critical business paths on your site.

RUM performance metrics explained

RUM uses the navigation timing API that is supported in the majority of modern browsers today. With the performance metrics gathered, you can spot abnormalities over time, trends, which parts of your site are performing slowly, and where you can make improvements. These improvements will be guided by correlating performance data with customer engagement metrics such as shopping cart abandonment, conversion rates, bounce rates, logins, what pages a customer visits, and how much time they spend on your site. Improving all these metrics can increase site revenue.

Real User Observability enables you to plan infrastructure investments to support your site. By identifying when traffic is highest, you can plan to increase capacity during those times. You can see if you need to use a different CDN or DNS provider. You can dedicate your engineering and development resources to the most problematic parts of your website. RUM, and the insight it provides, is a key part of any strategic optimization initiative for your website.



Real User Observability and mobile

Users are accessing your site from a variety of mobile devices and mobile carriers, accounting for the majority of Internet traffic today. Being able to understand where your visitors are coming from, what mobile devices they're using to access your site, and how you can improve your site on those devices should be a strategic business initiative for any online business.

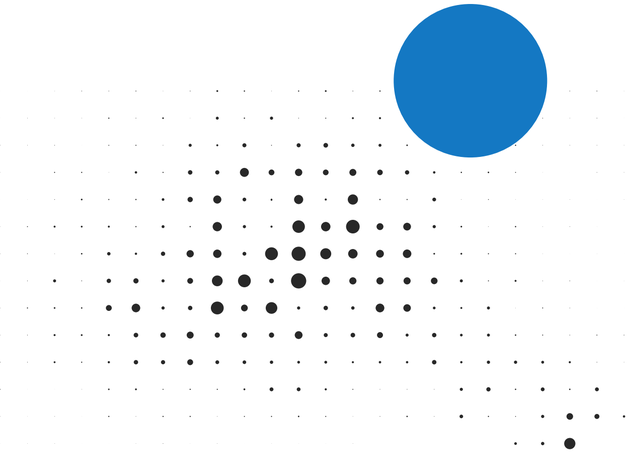
RUM helps you to measure the impact of changes you make to your web environment on mobile or desktop environments. If you add a new data center, use a new CDN, or change your DNS providers, you can measure the effect on your users' engagement levels and quality of experience. Even if you are just changing the content constantly, you can see how those changes affect customer engagement.

Dealing with noise

One downside of RUM is noise. A poor Internet connection, a weak wireless signal, an older device, and too many users trying to access the same network path all create noise that can make the real user experience appear to be worse than it otherwise would be. It then becomes important to separate population groups, such as different geographies and ISPs, so that one population doesn't skew your performance data. RUM allows you to break down performance data into its individual components as opposed to presenting an average of all the user experiences.

Active Observability

While RUM is a passive solution that observes site visitor behavior, active observability — or synthetic observability — is active, observing 24x7 from specific geographies and specific ISPs using a software agent that simulates end users. These agents measure page load times of URLs or business processes on the site, and your observability system captures data from that simulated user.



You control the entire testing environment, to calibrate the tests to run however you see fit. With active observability, it's possible to set the location and ISP — set a test to run on tier one Internet backbone locations, last mile nodes, or consumer ISPs. It is also possible to tell it to run on wireless networks or in any on-premise location.

If you have applications that run within your own infrastructure, you can test from that location and control how often it runs: every five minutes, every hour, every two hours, etc. Unlike RUM, it is also possible to eliminate the noise of uncontrollable variables like device and connection and identify how different aspects of your system, like your CDN and DNS providers, are actually impacting performance.

Active Observability is primarily used to measure site performance from specific locations and specific ISPs, or multiple ISPs in the same location. You can benchmark your site against your competitors' sites. Then measure key transactions, testing your site before it goes into production and real users interact with it. Active Observability supports the detection, alerting, and troubleshooting of performance issues quickly and easily.

You also have control over how much data you can collect. With an Active Observability web test, you get complete insight into the request that the browser is making. You can see each individual timing component and how each component impacts the overall performance of that site. You are also able to capture elements such as screenshots, response headers and response content. From there, you can drill down into deeper network health metrics such as trace routing information and DNS performance. In addition, it's possible to run a simple ping test to see if the servers are responding.

Custom metrics

With Catchpoint, you have the ability to generate custom metrics as well. Our solution can report back individual server names, and whether the browser was able to read from the cache or not (cache hit or cache miss). It can then pull information about all the parts of your infrastructure into one view and act on that data when any issues are detected.

Active Observability is not just about the web — you can also use it to monitor the performance of APIs on your site or those you may be providing to your customers. Capture performance data on streaming media, DNS lookups, and trace routes of the network path from server to browser and pinpoint where bottlenecks are in your Internet infrastructure.

When you identify poorly performing parts of your site, you can make changes and test your site after those optimizations have been made, then track performance trends over time. Observing third-party services such as CDN providers, external DNS providers, and third party tags, and making sure they adhere to the service level agreements you have with them, is a crucial part of monitoring today's complex websites and an ideal use case for active monitoring.



How Real User and Active Observability Complement Each Other

Catchpoint not only observes single URLs or web pages, but also the key interactions that a user has on a website, such as login and checkout processes. While you use Active Observability to test these processes, you can use RUM to establish how users typically interact with your site in order to know what to test. This is one of the ways that Real User and Active Observability complement each other.

Active Observability allows you to test specific user interactions with your site, but it doesn't tell you if your actual users are engaged or provide business metrics on customer conversions and revenue generation. That's where RUM comes in; it helps you correlate the site performance measured by Active Observability to actual customer engagement and revenue metrics.

Active Observability allows you to test from different locations, ISPs, and network types that a real user would use. Monitoring backbone eliminates last mile noise and focuses on backbone Internet issues impacting your ISP providers, and your application performance. These tests can be run 24 hours a day, 7 days a week. RUM only observes your site when users are on it.

While you can simulate the path a user might take on a site with Active Observability, you can't feasibly test every possible user path and interaction. Real User Observability lets you observe the exact user paths and by observing those paths over time, active tests can be more finely tuned.

RUM can provide some information about application and network health, though that data isn't as granular. For example, RUM can't show the steps your site takes to DNS lookup and resolution as Active Observability can. Active Observability can give you a concrete availability number that can tell you, say, if your site is up 99.99% of the time. With RUM there are more factors outside your control and one device or browser can skew all the data from the other performance improvements you may have made.





Similarly RUM doesn't allow you to benchmark against your competition because you don't control the environment as you do with Active Observability. Active observers allow for more of an apples-to-apples comparison.

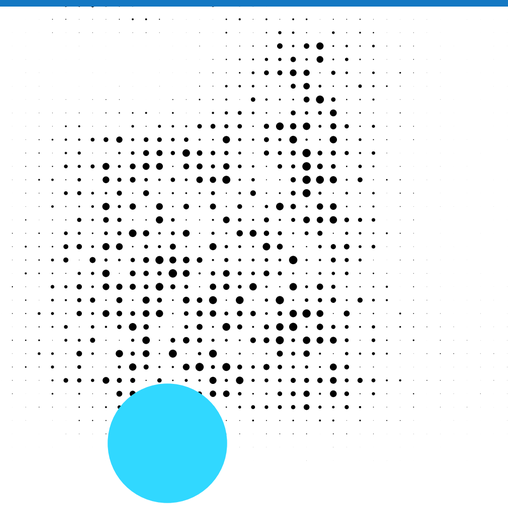
RUM can be reactive because you are capturing data after a user has visited, but it can also be proactive because you can actually see how changes are affecting user engagement and improving customer experience. Active Observability, meanwhile, is always proactive. It allows you to detect performance issues before they impact real users.

A winning combination

Put the two methods of observability together and you create a holistic view of performance, which generates the best results for your site. Observe all the different aspects of your system and ensure that your users are engaged and your infrastructure is healthy enough to support all users on your site.

Developing a Comprehensive Observability Strategy

When building your observability strategy, make sure that you fine-tune your alerts and tests to what your users are actually reporting to you. You want to be able to correlate site performance to bounce rates, conversions, revenue, and the number of pages on the site that your customers visit.



Once you understand the optimal performance levels you must deliver to keep your users engaged, set your observability alerts to those thresholds. If the thresholds are breached, you can identify and remediate the issue before your customers are impacted.

Where RUM comes in

RUM allows you to identify the top pages your customers are visiting, what the timing metrics are on those pages and their engagement and conversion rates. It can tell you what browser they're using and how those performance metrics compare by browser.

Looking at those metrics in context with your Active Observability data gives you powerful decision-making capabilities. When you make changes to your site, you can see the effect on both overall site performance and customer activity, giving you the metrics you need to ensure a positive customer experience.

In turn, this data allows you to make sound business decisions on where to optimize, where to slim down your site, and where to invest in additional infrastructure if need be.

Active Observability's analysis capabilities enable you to see how any optimizations you make would actually improve your site. RUM allows you to see how your end users' interactions with your site change and whether they're having a better customer experience. The two together can guide very specific decisions, such as where to put your data center so that it's closer to your key customers. You end up with a continuous feedback loop that you can use to expand and optimize your infrastructure and deliver your product with confidence.

Conclusion

RUM captures site performance from the actual end user's perspective and business metrics on what those customers do on your site. RUM is not activated until there are actual users on your site. Active Observability, on the other hand, provides a controlled environment that tests your site and the back end infrastructure that supports your site at regular intervals which you determine. It can be set to simulate where your users are coming from and what they are doing on your site (information that RUM can provide). You set up the tests and the alerts exactly the way you want them.

Together, the two methods of observability deliver a holistic view of your customer experience and help you to make improvements that ensure amazing customer experiences every time users visit your site. They give you the metrics to feel confident that you are delivering an amazing customer experience, increasing conversion rates, and driving revenue in the process.

About LogicMonitor

LogicMonitor® is the AI-first platform for Autonomous IT, enabling enterprises to operate complex digital systems with greater resilience, efficiency, and confidence. By unifying visibility from user to code across infrastructure, cloud, Internet, and digital experience, LogicMonitor delivers the intelligence required to anticipate issues, eliminate blind spots, and take action automatically. Powered by Edwin AI, LogicMonitor helps IT and business leaders reduce operational toil, protect revenue, and accelerate innovation in an increasingly complex digital world. For more information, visit www.logicmonitor.com and our blog, or follow us on LinkedIn, X, Facebook, and YouTube.

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