

Online Retail Best Practices

How Web and Mobile Performance

Optimize Conversion

and User Experience



Milliseconds Mean Mega-Dollars

Seconds matter. It's not overstating the case to say that even the smallest delays can collectively translate into significant lost revenue. Milliseconds can add up to mega-dollars.

In virtually every sector of online retailing today, consumers have no time and less patience. They want a high-quality, reliable buying experience on your website. Simply put – they want it now. And if you fail to meet those expectations – if you can't deliver sub-second response times and enable the user to immediately engage with your content, products, and apps – they're off to visit (and buy from) your competitors.

The cliché is true: You don't get a second chance to make a first impression. And that trend has only amplified as more users turn to smartphones and other portable devices for their online shopping.

Whether it's revenue, customer traffic, cart abandonment, bounce rates, or length of session, the correlations are consistent: Speed is the number 1 feature of successful websites because speed translates into a higher-quality buying experience. Faster pages mean a better user experience. That translates into better conversion rates – and better profitability. And that forms the foundation of the highly sought-after "omnichannel strategy" that ties together in-store, mobile, social, and desktop experiences.

By optimizing website performance, online retailers can directly improve the user experience and increase engagement and brand loyalty, as measured by time on site, size/value of shopping cart, and frequency of return visits.

How can retailers ensure a consistently high-performance experience for growing numbers of users – even during peak seasons/events? How do you keep people coming back, consuming content, using services, spending money, and sharing with friends? The answer is twofold: It starts with careful pre-production load testing to avert preventable disruptions, delays, and failures. And, it means careful real-time monitoring of post-deployment real user experiences, so you can be aware of and respond to unexpected situations as they arise – taking corrective actions before it's too late.

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Pre-Launch: Testing for Performance

Before your site launches – or before the big revamp prior to your peak selling season – development and testing teams need to ensure the new selling environment is responsive enough to provide a quality experience to the buyer. But given the scale of world-class online retail apps, it can be difficult to conduct performance testing that replicates the load of thousands of simultaneous users.

In addition, performance engineers rarely want to execute a single test. They need to conduct a series of tests that build upon prior test results. Akamai CloudTest addresses this need for a series of high-load performance testing. Using real-time analytics, a visual test creation environment, dynamic provisioning of a Global Test Cloud, and the ability to start/stop/pause/restart tests, CloudTest gives you complete testing flexibility to accelerate the iterative testing process.

This acceleration also translates to less time and expense for performance testing. Instead of betting on a single flight of tests right before launch, you can perform more comprehensive testing throughout the development lifecycle and create higher-performing, reliable, and fast online retail apps that generate more sales revenue.

Post-Launch: The Importance of Real User Monitoring

After you launch – when the spikes hit – you need to be aware of any disruptions as soon as possible. The key for online retail is seeing actual user experiences in a timely fashion. Getting reports days or weeks later won't salvage your sales and marketing losses. You need to know about substandard performance in time to take action.

When it comes to these post-launch performance improvements, traditionally the focus has been on back-end server stability and scalability, which are certainly worthy initiatives. However, 80%-90% of page load time – which is ultimately what the retail customer cares about – is spent on the front end, in the browser. That's why retailers must test and measure from that crucial real-world user perspective. The real user monitoring (RUM) discipline quantifies the correlation between page load time and user engagement, and shows where you can optimize performance to directly improve profitability.

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Akamai's mPulse RUM solution captures and aggregates the performance and engagement metrics that matter most to retailers. That data comes in real time, giving you the real user intelligence that correlates the impact of performance on the bottom line. That means you can take immediate action and feed critical information back into the development lifecycle.

Timeliness is everything – fresh metrics matter most – which is why mPulse analytics collect real-time information from real user experiences. Best of all, mPulse is intuitive and accurate. It takes the important pieces of statistical analysis, lets you tailor the data presentation to your needs, and conveys the results in vivid, compelling, easy-to-understand visualizations.

How do these metrics affect online retail and other consumer-facing sites? Maybe you're seeing high exit rates on specific pages or uneven conversion rates across the site. Maybe you have high figures for app downloads, but low app usage. These are all symptoms of user experience and user engagement problems. And most often, they can be traced directly back to the technical performance of the site. Akamai's mPulse RUM solution helps you uncover the correlation between site performance and visitor behavior so you can make immediate corrections and optimizations.

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Spikes Happen

If only site traffic was a steady, consistent, and predictable component of your online retail plan. Of course, that's never the case. Depending on your target market and business strategy, you can see increases in traffic that coincide with a range of internal and external events all year round. It's not just the classic holiday shopping scenario. Maybe your business sees greater traffic when summer travel season arrives. It could be associated with a big sports event or the start of the school year. Maybe you have monthly or weekly promotions that bring surges in site traffic.

Regardless of the source or the reason, "spikes happen" – and you need to be ready. The stakes are high since a disproportionate share of your revenue – and the lion's share of your profit – can come in during these peak periods.

Everyone recognizes the critical nature of site performance. Yet even well-established online retail sites experience visible, sometimes costly, performance problems during peak traffic periods. During the last Cyber Monday holiday, Akamai analyzed global mobile session traffic and calculated the peak conversion rate of 4.75% was reached when the page load time was 3.3 seconds. A one-second increase brought the conversion rate down to 3.52%, a 26% drop. Clearly, a slower page load time has a negative effect on users and their propensity to purchase.

Preparing for traffic spikes is essential. And to lock down your site for peak periods, you'll need a fairly long runway to ensure that excellent performance is "built in."

However, the application environment must constantly change. In an agile development world, few businesses can afford to feature-freeze their environment for months. Even if you can efficiently code-freeze your application elements, you're still vulnerable to the variabilities of third-party components – CDNs, shopping carts, payment systems, and more – that also contribute to the user experience.

Clearly, this isn't an easy problem to solve. To ensure fast performance under peak loads, you must commit to performance testing before and after site launch.



The Akamai Performance Value Proposition for Online Retail

For those charged with selling on consumer-facing retail, media, and entertainment websites, Akamai offers a value proposition that appeals to both business managers and performance experts.

- **RAPID TESTING FOR RAPID DEPLOYMENT:** Build your tests faster without coding, and deploy cloud-based load servers across the globe in minutes. You can analyze results instantly, while tests run continuously from your own lab or in the cloud.
- **FULL PERFORMANCE COVERAGE:** Run the dev lab through to live production. Cover internal and external traffic with a single solution, while continually testing to any scale. Address the issues you uncover. Then iterate and test again.
- **REALISTIC TESTING:** With Akamai, you can test using hundreds to millions of users to meet real-world needs. You can model true user behavior, timing, pace, and scale to accurately stress-test your production environment.
- **AFFORDABLE TESTING:** With Akamai, you pay only for what you need on demand. There's no need to purchase and provision test hardware. Akamai's cloud approach reduces pre-test prep time and eliminates high maintenance fees.
- **INFORMATION FROM THE SOURCE:** Akamai presents a detailed understanding of how web and mobile application performance impacts user behavior. That lets you fine-tune and optimize application performance to significantly improve retention, conversion, and profitability. You can eliminate those blind spots by quantifying the true cost of web and mobile performance, and using that analysis to make informed strategic and tactical decisions, with real-time analytics that report events within seconds of their occurrence.
- **FAST PERFORMANCE METRICS:** Akamai analytics let you tap enormous datasets for meaningful correlation to business metrics. You gain comprehensive insight into your business by capturing 100% of all user traffic, regardless of volume. You can focus on conversion opportunities and improve your understanding of different patterns and user behaviors.
- **ACTIONABLE INSIGHTS:** View and act on the data that matters most, with customizable dashboards and standard data views. Akamai reduces false positives and enables you to direct your resources to the areas that have the biggest impact.

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The New Performance Mandate for Retail

For retail strategists and merchandising professionals, performance is a non-negotiable requirement for both web and mobile shoppers. Without high performance, there is no quality user experience, no favorable reputation/brand, no customer loyalty – and no sale. Virtually any online retail enterprise fails if the site does not meet the demanding performance expectations of the market.

Moreover, the impact can be even greater than you realize. The first-order impact of performance failings is the loss of a sale. While it's difficult to measure the value of a lost customer, the impact is palpable.

Just as important, however, is the second-order effect: reputational/brand damage. When site performance lags, unhappy visitors not only defect to competitors, they also take to social media to publicly express their dissatisfaction. This, quickly and broadly spreads the damage to your brand, and drives away unknown numbers of potential customers.

Akamai uses the power of cloud computing to quickly and affordably test consumer-facing web and mobile applications at scale. This proven testing technology – available from the cloud and using the cloud – addresses the limitations of traditional performance testing technologies and methods for today's major retail sites. More important, it provides online retail companies with the ability to achieve their strategic goals by translating site speed into improved conversions, increased loyalty, and greater revenue.



Critical Factors for Performance-Testing Retail Sites

- Test for spikes
- Analyze and act in real time
- Don't forget about the user experience
- Monitor everything
- Test what you think doesn't need to be tested
- Don't wait until just before the holidays
- Test expecting failure
- Test in production

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Start Testing Today

Ready to load test your website and apps? Visit Akamai.com/cloudtest for more information.

Learn more

Akamai secures and delivers digital experiences for the world's largest companies. Akamai's intelligent edge platform surrounds everything, from the enterprise to the cloud, so customers and their businesses can be fast, smart, and secure. Top brands globally rely on Akamai to help them realize competitive advantage through agile solutions that extend the power of their multi-cloud architectures. Akamai keeps decisions, apps, and experiences closer to users than anyone – and attacks and threats far away. Akamai's portfolio of edge security, web and mobile performance, enterprise access, and video delivery solutions is supported by unmatched customer service, analytics, and 24/7/365 monitoring. To learn why the world's top brands trust Akamai, visit akamai.com, blogs.akamai.com, or [@Akamai](https://twitter.com/Akamai) on Twitter. You can find our global contact information at akamai.com/locations. Published 05/19.

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