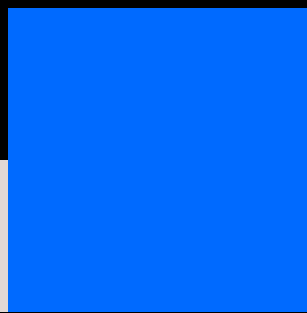
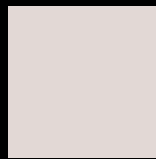


Ebook

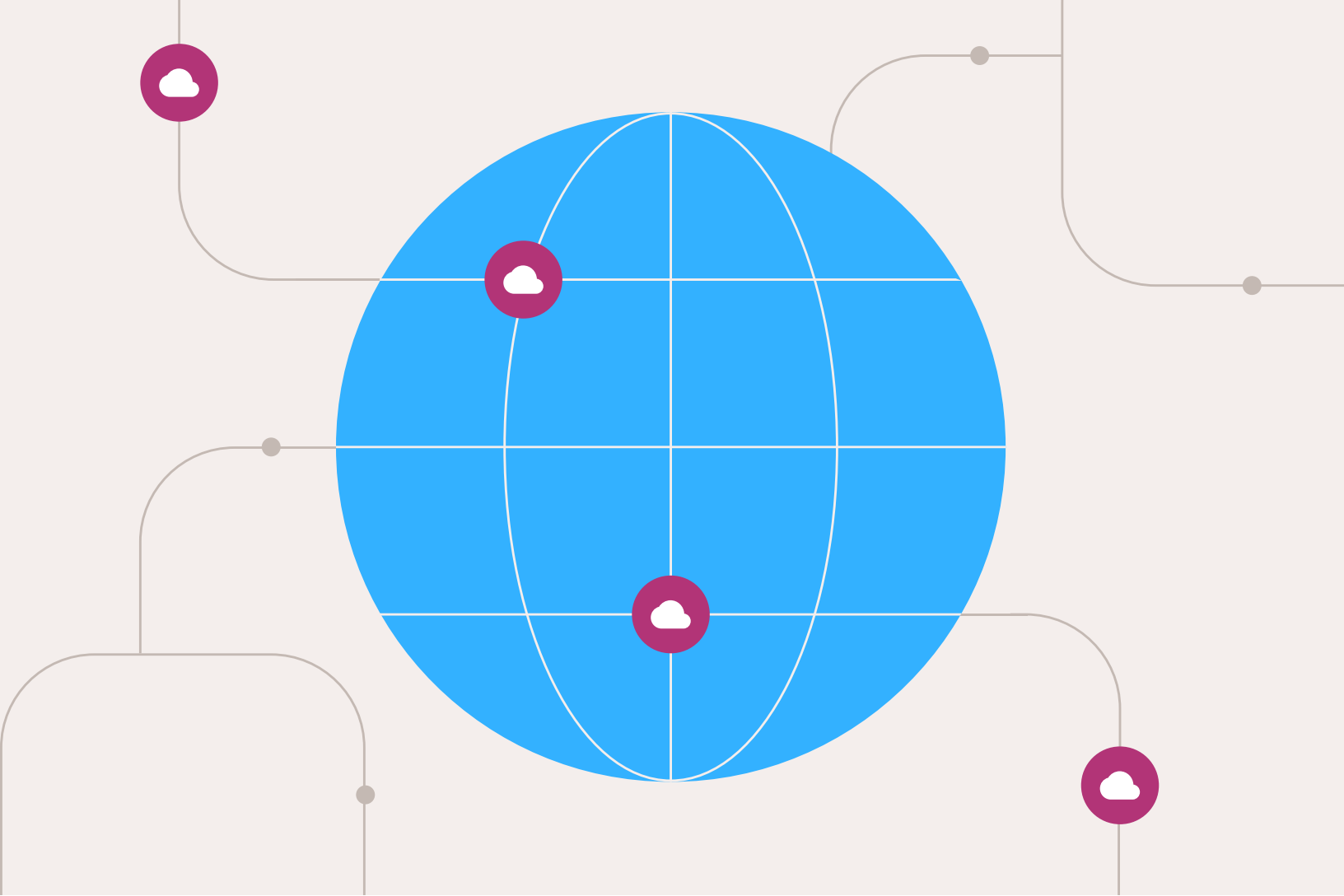
The ecommerce edge

Winning with performant, scalable,
and secure content delivery

fastly



Google Cloud



With over 6 billion internet users around the globe¹ the modern human experience, across continents, cultures, and industries alike, is increasingly digital. E-commerce makes up a vast portion of this internet traffic and activity, with reports estimating the global e-Commerce market will reach nearly \$8 Trillion by 2027.²

Studies estimate that e-Commerce will comprise over 20% of global retail sales by 2027, with shifts in buying behavior helping to drive this growth. Social media in particular is reshaping e-Commerce, with Facebook accounting for 37% surveyed of purchases globally in 2024. “TikTok’s influence has grown among younger shoppers, particularly millennials and Gen Z. Free delivery and lower prices are key motivators for online shoppers, while high delivery costs caused more than 40% of cart abandonments worldwide”.²

As the market grows and online purchasing behavior continues to evolve, consumer expectations are increasing as well. Customers are no longer satisfied to shop only in stores or online; they’re also mobile. Across devices, prospects and potential customers bounce around from site to site and have very high expectations that your site should be fast and performant, at all times. Wherever they are, on whatever platform or channel, they’re not only expecting a seamless, responsive, and instantaneous experience, they’re looking for a personalized one. In less than a second on your site, they’ve already formulated an opinion about your business,³ and if your site doesn’t perform, they’ll leave.

1. [Statista](#), 2026; 2. [globenewswire](#), 2025; 3. [Forbes](#), 2018

Challenges in ecommerce content delivery

To win and keep customers, your organization must not only deliver superior content; it must also deliver seamless customer experience. But as any web owner knows, providing consistent uninterrupted website performance is rarely as easy.

Performance challenges

E-commerce businesses have only seconds to capture customer attention. Think with Google research found that suggests that if 53% of mobile visitors will abandon a site if it takes longer than 3 seconds to load⁴ Additionally, similar research found that 79% of users say they won't return to a site that performs poorly.⁵ As our collective attention spans continue to dwindle, time spent on websites is dropping too.⁶ On average, customers spend five minutes or less on a retail website.¹ And with 72% of desktop online shoppers and a whopping 84% of mobile online shoppers selecting then leaving items before ever making a purchase, abandoned shopping carts are becoming alarmingly common.²

If your content doesn't deliver when and how it's supposed to, both prospects and customers will likely take their time, attention, and business elsewhere. E-Commerce sites must therefore be lightning fast and frictionless across websites, mobile, and applications. The challenge here is often legacy architecture that easily becomes overwhelmed by traffic surges, resulting in poor performance, slow load times, and dismal conversions. Additionally, a slow site can compromise SEO rankings, site traffic, and potential revenue.

User experience challenges

E-commerce customers not only expect a highly performant browsing experience, they also expect a **personalized** one. Over ¾ of consumers surveyed by McKinsey reported frustration with companies that don't deliver personalized digital experiences.⁷ Additionally, in another industry report, 77% of respondents had chosen, recommended, and even paid more for a user experience tailored to their preferences and needs.⁸ Where consumers are concerned, inadequate personalization is more than just a matter of preference; it's quickly becoming a matter of trust costing billions in yearly sales. (9) But exemplar personalization brands are generating 40% more revenue than companies that don't personalize digital experiences.⁷

Reliability challenges

During peak shopping periods such as Black Friday, Cyber Monday, or other holiday seasons, ecommerce websites experience a surge in user traffic. The spikes and surges of high site traffic (e.g., product releases, sales, and



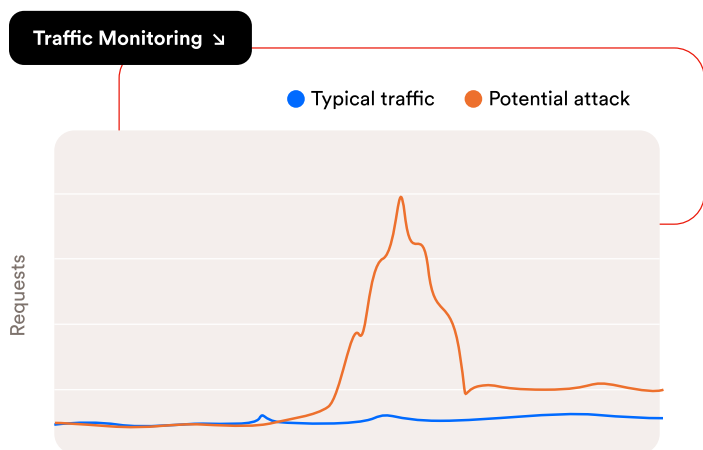
unfortunately cyberattacks) can result in a host of challenges, including but not limited to jammed or overwhelmed servers, slow loading times, compromised performance, security threats, website and/or app unresponsiveness, site crashes, and server cost increases.

1. [Statista](#), 2026; 2. [globenewswire](#), 2025; 4. [tdwebservices](#), 2025; 5. [Unbounce](#), 2018; 6. [Contentsquare](#), 2023; 7. [McKinsey](#), 2021; 8. [Forrester](#), 2017; 9. [Accenture](#), 2017

Challenges in ecommerce content delivery

Security challenges

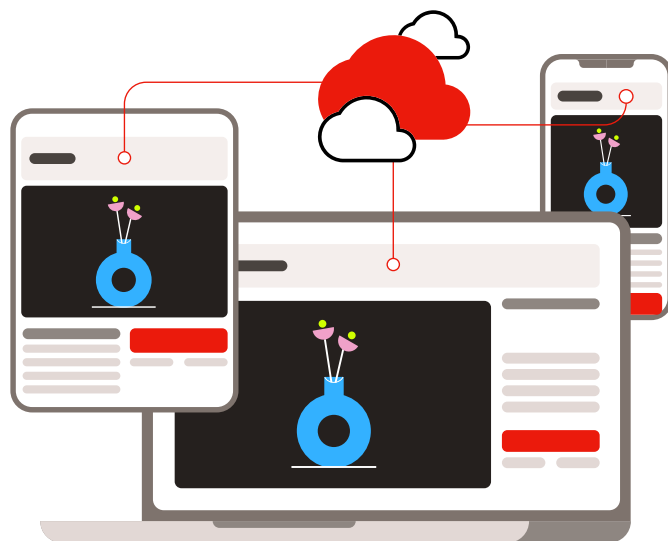
High traffic can also come with security implications; it can bring unwanted attacks and threats to your site. By nature, ecommerce sites and servers house sensitive customer data, like usernames, passwords, and payment information, which makes them valuable targets for cyberattacks. For example, in distributed denial of service (DDoS) attacks, hackers leverage botnets - that is, networks of compromised devices to flood a site with internet traffic, intentionally overwhelming its infrastructure. As bot traffic increases, bot attacks, which can be used to steal customer data and make fraudulent purchases, are increasing as well. In a 2026 Threat Insights Report, 99% of bot traffic was classified as 'unwanted.'¹⁰ These are bots that have malicious fingerprints, deceitful user-agents, that are malicious scanners, etc. These are bots pretending to be real users, and likely there for nefarious purposes.



These cyberattacks may not only cause servers to crash, but they can also be costly to both companies and consumers. In 2025, ecommerce fraud (chargebacks, online payment fraud) totaled \$48 billion, and are projected to reach \$107 billion by 2029.¹¹ Further, automated attacks can be hard to detect and difficult to distinguish from legitimate site traffic surges. Legacy content delivery solutions may not only mishandle these attacks; they may unintentionally block legitimate traffic.

Cost efficiency challenges

Website delays and outages can also be costly. In 2026, average cost of downtime for SMBs is \$5,600 per minute as a cross-industry average.¹² Another source estimates that slow-loading websites cost retailers \$2.6 billion USD annually.² Even when things are working as they should, spikes and surges happen - not only with content delivery but also with costs. Performant and personalized ecommerce requires more data. More data requires more bandwidth. With centralized IT alone and/or legacy content-delivery solutions comprised of networks with different capacity limits and unpredictable pricing models, cost inefficiency, mismanagement, and overages are common. They can unnecessarily expose your organization to risk as well as cost your business both customers and revenue.



10. [Fastly](#), 2026; 11. [Ringly](#), 2026; 12. [HDTech](#), 2025 2. [globenewswire](#), 2025

A primer on content delivery networks (CDNs) and edge computing

A CDN—that is, a geographically distributed network of servers—can help to address many of the challenges specific to ecommerce content delivery. Often comprised of edge servers, CDNs decentralize data computation, offload workloads from origin servers, and cache files across and/or at the edge of the network. They offer a layer of built-in redundancy—distributing, processing, and synthesizing data closer to end users. What this means for your prospects and customers is a better user experience. And what it means for your business is not only reduced costs and security risks but also increased revenue potential. With the right solution, you have a baseline tool to deliver superior customer experiences and differentiate your business from competitors. But not all CDNs are the same. Legacy solutions simply can't keep up in an industry where expectations and technology continue to change. That said, [here are five things to look for in a modern CDN](#).

1. Promotes peak performance

To run a successful ecommerce business, a powerful and consistently high-performing CDN is non-negotiable. Across devices and networks, your CDN must distribute content quickly and efficiently. The math is quite simple: The faster your load times and site speeds, the more likely and longer customers will stay on your site. The longer they stay, the more and more likely they'll spend. Additionally, the faster your site is, the more likely customers will find it in the first place. Search engines such as Google prioritize site speed and user experience in their rankings algorithms.

2. Improves user experience

Providing a personalized user experience not only benefits your customers, it benefits your bottom line. For example, fast-loading personalized content such as product recommendations are associated with higher customer engagement, conversion rates, average order value (AOV),

and repeat purchase rates. To deliver the personalized content and the user experience customers expect, your CDN must be able to process large amounts of data in real time.

3. Builds in reliable redundancy

Traffic spikes and surges will come—and they may come when you least expect them. Servers may go down and unwanted traffic designed to overwhelm your servers (e.g., DDoS attacks) can happen too. In any case, your ecommerce business needs to be prepared and your site needs to perform. Your CDN should offer redundancy to ensure that it can. Ideally, it should manage these fluctuations by distributing traffic load across multiple edge nodes. Its network should be sufficient to navigate all manner of internet weather. And it should be able to leverage multiple CDNs not only to sidestep traffic bottlenecks but also to provide multiple pathways to prevent outages.

4. Bolsters security

To earn and keep business, you must first earn and build trust. Your ecommerce site must protect customers' sensitive information, plus meet regulatory compliance standards. The CDN that backs it should too. It should also shield against distributed denial of service (DDoS) attacks by leveraging its distributed infrastructure to absorb and mitigate malicious traffic, preventing it from reaching your origin servers. Additionally, it should seamlessly employ various, layered security measures such as web application firewalls (WAFs), SSL/TLS encryption, and bot mitigation techniques to protect against threats and vulnerabilities. By caching and delivering content from edge servers closer to users, your CDN reduces the exposure of the origin server, making it less susceptible to direct attacks. Your CDN should provide visibility and programmability to empower your developers to make quick scaling and security decisions on the fly.

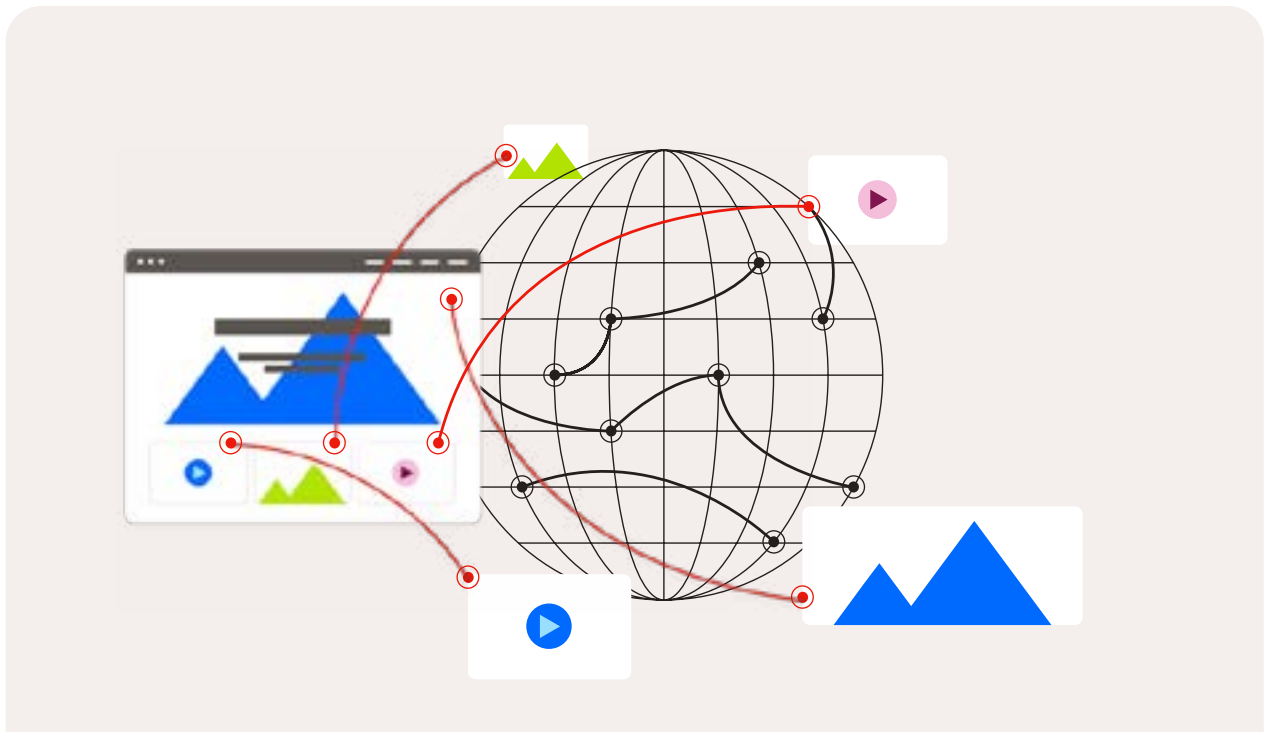
A primer on content delivery networks (CDNs) and edge computing

5. Optimizes cost efficiency

Caching more—such as dynamic content and API calls—at the edge will not only improve your users' experience and your ecommerce site's performance, speed, reliability, and security. It can also save you money. Leveraging edge computing can help your ecommerce business to operate more efficiently. And offloading workloads from the origin can help to reduce egress costs as well as reduce your public cloud spend. To stick within budgets and prevent the overages and surprise costs that can come with traffic spikes or global malicious attacks, look for a CDN with transparent pricing and billing based on requests rather than bandwidth.

Ecommerce and its underlying technology is ever evolving, and it will continue to adapt to industry trends, consumer behavior, and customer demand. With a modern CDN and architecture, your business will be poised to leverage emerging technology and meet this demand. Your modern CDN should be an extension of your infrastructure that:

- Minimizes downtime.
- Optimizes the delivery of your app, web, and mobile traffic.
- Allows your content network to scale securely.
- Improves performance and cost savings along the way.



Gain the ecommerce edge with Fastly

Fastly's edge cloud platform offers more than just a standard CDN. It offers a modern network with powerful, strategically placed, and software-defined POPs, plus 578 Tbps* of edge network capacity for better performance across the web, mobile, and apps. It's a fully configurable API-first network that integrates with common CI/CD tools for developer efficiency and control. It offers PCI-compliant built-in security, always-on DDoS mitigation, real-time visibility, and programmatic control. Additionally, it ensures performance, reliability, and scalability by working around "internet weather," automatically detecting and routing around origin connection issues in real time. It caches more content at the edge, with instant purge, origin shielding, and multi-CDN strategies, affording efficiency, security, and cost savings. For content that changes often, such as inventory values or personalized content, you can selectively purge cached data within <150ms milliseconds.** Live Event Monitoring Services ensure the user experience isn't impacted during high-traffic periods, including sales, new-product releases, and holidays.

To take security to the next level, Fastly's Next-Gen WAF provides scalable, advanced web application and API protection (WAAP) for your applications, APIs, and microservices, wherever they live, from a single unified solution. A highly accurate detection engine means you'll see virtually no false positives. In production, almost 90% of customers use the WAF in full blocking mode without concerns of blocking legitimate traffic.

Take performance, efficiency, and personalization a step further with Fastly Compute, and build high-scale, globally distributed applications and execute code at the edge, without having to manage the underlying infrastructure.

*As of March 31, 2026

**As of December 31, 2025

With Fastly, [Squarespace boosted performance](#), reduced delivery costs, and improved developer productivity. The company embraced Fastly's full self-serve configurability, allowing changes to easily pass from development to production. With Fastly, Squarespace ensures more content remains cached on the edge, improving performance, scale, and most-of-all, user experience.

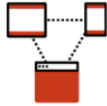
Get the best of the edge and the cloud with Fastly + Google Cloud

Fastly is a Premier Partner of Google Cloud. Together, they deliver the speed, flexibility and security needed to provide a superior, safe and scalable online shopping experience. Online retailers are empowered to deliver lightning-fast, secure, personalized shopping experiences at the edge. Combined with Google Cloud, Fastly's edge platform delivers real-time ad targeting, dynamic pricing, intelligent inventory management, bot defense, and seamless traffic scaling, accelerating conversions and driving meaningful revenue growth.

This powerful partnership offers customers:



Reduced latency and improved performance at a lower cost



Easy integration with popular CI/CD tools.



Additional capabilities include ability to link Google Cloud Storage or Google Cloud Compute Engine with Fastly's Original Shield and Request Collapsing to optimize customers' cloud-based e-commerce experience.



Strategically placed Points of Presence (POPs).



PCI-compliant security with extensive threat identification and mitigation tools.



High-capacity edge storage.



Live event monitoring services to ensure a superior customer experience, even during peak shopping periods.



Direct network interconnects between Fastly and Google Cloud in more than 25 locations to help reduce latency and improve performance at a lower cost.

With Fastly and Google Cloud, you get the best of the edge with the best of the cloud. The Fastly and Google Cloud partnership provides a practical approach to addressing common performance and scalability challenges in modern ecommerce platforms. By leveraging Fastly's instant purge and intelligent caching alongside Google Cloud's scalable compute and data services, retailers can finally build a truly high-performance, resilient, and cost-effective digital experience that keeps customers coming back.

And since Fastly is available in the Google Cloud Marketplace, you can get a single bill for both and can apply eligible Fastly purchases toward your Google Cloud committed-use spend. To get started, contact one of our CDN experts, or [check out Fastly in the Google Cloud Marketplace](#).