

The Online Retailer's Guide to Higher Profitability

Tactics and recommendations that retailers using Cloudflare have shared to improve the performance and security of their eCommerce platforms.



Retailers are preparing for the upcoming holidays, the most lucrative time of the year for online shopping. If you haven't already begun capacity planning or upgrades to your online store infrastructure, there's still time to get ready.

This guide will provide you with a checklist to make sure your online store is ready for the holidays, and show you how to make the entire ordeal effortless..



Ensure store uptime and availability



Increase buyer engagement and conversions



Secure customer data and transactions



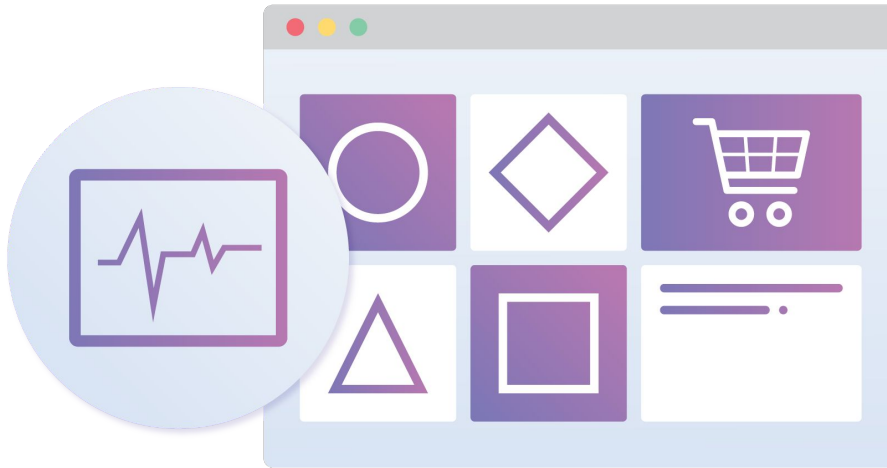
Reduce operational costs

\$100K

The average hourly cost of infrastructure failure for Fortune 1000 companies is \$100,000 an hour.¹

Ensure Store Uptime and Availability

When planning for the holiday shopping season, this is one of the more important concerns for many retailers. When websites aren't able to handle the increased traffic and customers aren't able to access your site, they are forced to make their purchases elsewhere and revenue gets impacted.



What causes site downtime or outages

Your website can go down for a number of reasons, including:

- Increased load
- Distributed denial-of-service (DDoS) attacks
- Compromised DNS
- Malicious bots

All these reasons can, for the most part, be distilled down to one reason: the inability of your hosting servers to maintain and publish your store content.

How you can plan for better uptime and availability

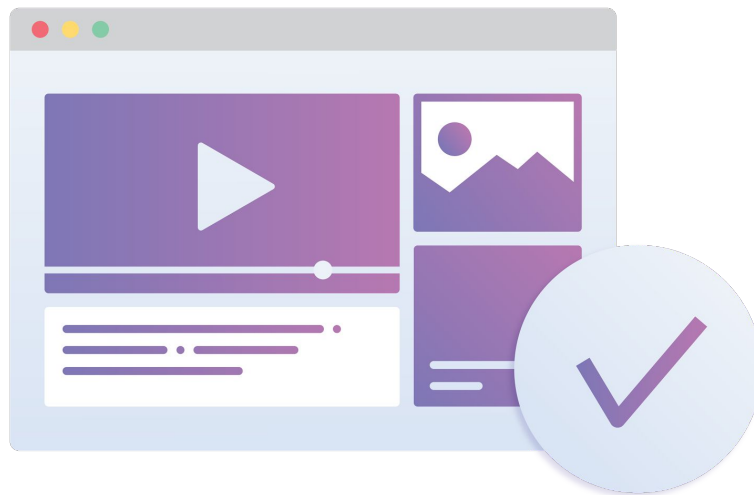
Examine your historical data from previous years' sales and the amount of traffic your site supported. Build estimates and forecasts for estimated traffic increases based on previous years' growth.

- ☐ **Assess current infrastructure capacity.** If you're hosting servers in the cloud, ensure that you have the proper VMs allocated to scale out your servers to support increased workloads as traffic increases to your site. For on-premises deployments, build out your server farms to scale.
- ☐ **Implement health monitoring.** In addition to ensuring that you have adequate capacity, you will also need to implement active monitoring to ensure that servers and VMs are responsive and to eliminate the likelihood of traffic being directed to a server that is down.

- ❑ **Build redundancy and plan for failover.** In the event your entire site goes down, you need to have a contingency plan in place. Redundancy ensures that traffic can fail over to an alternate site to service your customers. Your hosting provider should be able to provide you with options for co-located site migrations in the event of a disaster or an outage.
- ❑ **Deploy a DDoS mitigation solution.** DDoS mitigation refers to the process of successfully protecting a targeted server or network from a distributed denial-of-service (DDoS) attack. By utilizing specially designed network equipment or cloud-based protection services, you can mitigate the threat posed by these attacks.

Increase Buyer Engagement and Conversions

Consumers are spending an increasing amount of time online. As a retailer, you want to capture your share of that time, minimize bounce rates, and convert many of these impressions into transactional value.



Buyers who spend more time on your site not only help you gain valuable brand equity, but they are also more likely to make purchases from a brand that they like and trust. You want to create the best experience for visitors to your site.

Rich media management and optimization

A picture says a thousand words, and is more likely to solicit a reaction from your site visitors. Many website publishers, however, improperly manage and deploy images that are not optimized for user devices and endpoints. Publishing a high resolution image that is not optimized for mobile, for example, will consume a large proportion of data on the customer's plan and cause your store page to load more slowly.

Video is increasingly used in online stores to showcase and advertise the benefits of specific products in your catalog. Depending on the traffic to your site, multiple shoppers trying to view a product video could experience buffering if you're publishing native video files on your page.

Improve the media experience for your customers

Help your customers get the best experience on your site. Images and video help increase engagement on your site, but you need to ensure that these are optimized for device types and network connectivity to minimize any performance degradation.

- ❑ **Optimize image files.** Compress and resize images with mobile in mind. Improperly sized images will take longer to load, and take up valuable screen real estate.
- ❑ **Avoid embedding raw video into pages.** Embedding raw video files like MP4 or MOV files will increase the time it takes for videos to load on a page. From a user experience perspective, the user will not be able to play product videos until the complete file has downloaded.
- ❑ **Use non-branded video players.** Videos published on YouTube or other video discovery platforms are great for advertising, but not great for your brand. Publishing these video links on your site will detract from your brand and show recommended videos that draw visitors away from your site to those platforms.

Personalize the buying experience

Retailers that build dynamic webpages with personalized content and product recommendations help their customers discover new relevant products. These personalizations enrich the buying experience and help further build brand equity.



Retailers deploying site wide personalization should also be aware of how page performance is impacted. Pages that require extensive JavaScript, or dynamic page assets, can potentially take longer to load than a comparable page without personalization and with static assets.

Optimize for mobile and SEO

Customers are increasingly shopping for products from their mobile devices. Your online store should be optimized for mobile. Make it easy for your customers to browse your catalog, and make it easy for customers to purchase from their devices.



Google now leverages a metric known as the mobile first index that assesses how well your website performs on mobile - which in turn impacts where your store appears in their mobile search results. Google has also introduced an open source standard called Accelerated Mobile Pages (AMP) that accelerates page load times on mobile.

- ☐ **Run performance tests for mobile.** There are multiple sites that will help you understand how your site will perform on mobile, and where you need to make improvements.
- ☐ **Build responsive sites.** Responsive websites ensure that the same pages that were built for desktops are responsive to screen size and automatically adjust for smaller screens.
- ☐ **Leverage Google AMP.** AMP will accelerate your page load times on mobile, and help you maintain positive SEO placement in Google's mobile search results.



If people have a negative experience on mobile, they are 62% less likely to purchase from you in the future.²

Secure Customer Data and Transactions

Preventing online fraud and securing customer data should be high on your list of priorities for your online store, especially during the holidays. Cyber criminals are becoming increasingly sophisticated, and their evolving tactics for defrauding you and your customers are growing more difficult to combat.



Unauthorized account access

One of the tactics that criminals are leveraging extensively involves credential stuffing. Credential stuffing is a cyberattack in which credentials obtained from a data breach on one service are used to attempt to log in to a customer's account on your site.

As of 2019, credential stuffing is on the rise thanks to massive lists of breached credentials being traded and sold on the black market. The proliferation of these lists, combined with advancements in credential stuffing tools that use bots to get around traditional login protections, have made credential stuffing a popular attack vector.

- ☐ **Implement additional login security.** Enabling features like two-factor authentication and requiring users to fill out CAPTCHAs when logging in both also help stop malicious bots. While these are both features that inconvenience users, minimizing the security threat is worth the inconvenience.
- ☐ **Deploy a bot management service.** Bot management uses machine learning to identify malicious bots and stop them from making login attempts without impacting legitimate logins.



Protect your site from content scrapers

Content scraping, or web scraping, refers to when a bot downloads much or all of the content on your eCommerce site. Content scraping is basically always carried out by automated bots. Website scraper bots can download your entire product catalog on your website in a matter of seconds.

These bots can then repurpose content for malicious purposes, such as duplicating your site and pretending to sell your products, or to undercut your pricing advantage.

- ☐ **Deploy a bot management service.** These services can identify bot behavior patterns and mitigate bot scraping activities, often with the help of machine learning.
- ☐ **Deploy rate limiting for your site.** Rate limiting can help prevent site scraping. A real user is not likely to request the content of several hundred pages in a few seconds or minutes, and any "user" making requests that quickly is likely a bot.
- ☐ **Deploy CAPTCHA challenges.** CAPTCHA challenges are questions positioned on pages where bot traffic is suspected, and prompts are directed at the user to determine whether they are a human user versus a bot.

Secure your online store and transactions

The global nature of the Internet exposes your online store to attack from different locations and various levels of scale and complexity. eCommerce security deals specifically with the security surrounding your online store, third party applications and web services such as APIs.

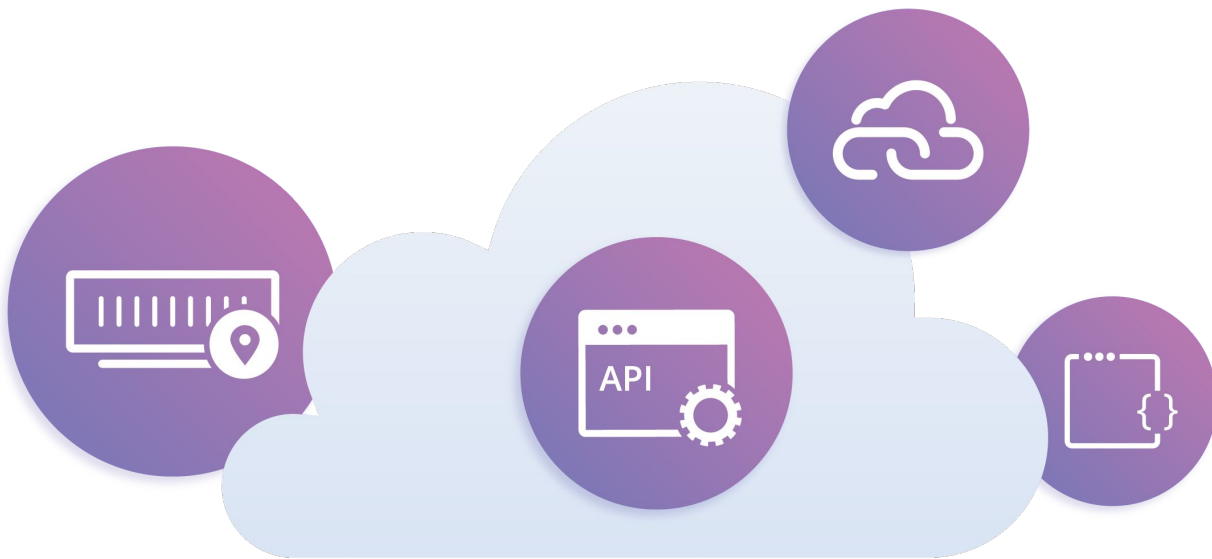
Some common vulnerabilities you should be aware of include:

- **Cross site scripting (XSS).** This allows an attacker to inject client-side scripts into a store's webpage in order to access important information directly, impersonate your customer, or to trick your customer into revealing important information.
- **SQL injection (SQi).** Attackers can exploit vulnerabilities in the way databases execute search queries. SQi can be used to manipulate your product catalog or prices and potentially complete a fraudulent purchase.
- **Data breach.** This refers to instances when sensitive or confidential information, such as customer personal information or credit cards, are exposed either through malicious actions or by mistake.

- ❑ **Deploy a web application firewall.** Web application firewalls are required for PCI-DSS compliance to protect the theft of customers' credit card information. They are also useful to safeguard any customer personal information.
- ❑ **Ensure all data is encrypted.** All information that is exchanged or delivered through your site should be encrypted with the latest TLS 1.3 encryption standard to secure your site.

Reduce Operational Costs

At the end of the day, every retailer needs to be laser-focused on increasing profitability. It doesn't matter how many new customers you serviced or how much your transactional volume has increased if your profitability isn't also increasing.



Bandwidth and Data Egress Costs

While the cloud has provided a haven for limitless capacity and elastic scale, this potentially comes at a price. In addition to storage and capacity, retailers that leverage rich media content like video on their sites also need to account for bandwidth costs. Many cloud providers impose additional costs for bandwidth consumed when serving content to your customers. Bandwidth costs can range anywhere from \$0.08 to \$0.12 per GB, depending on the volume of traffic being served.

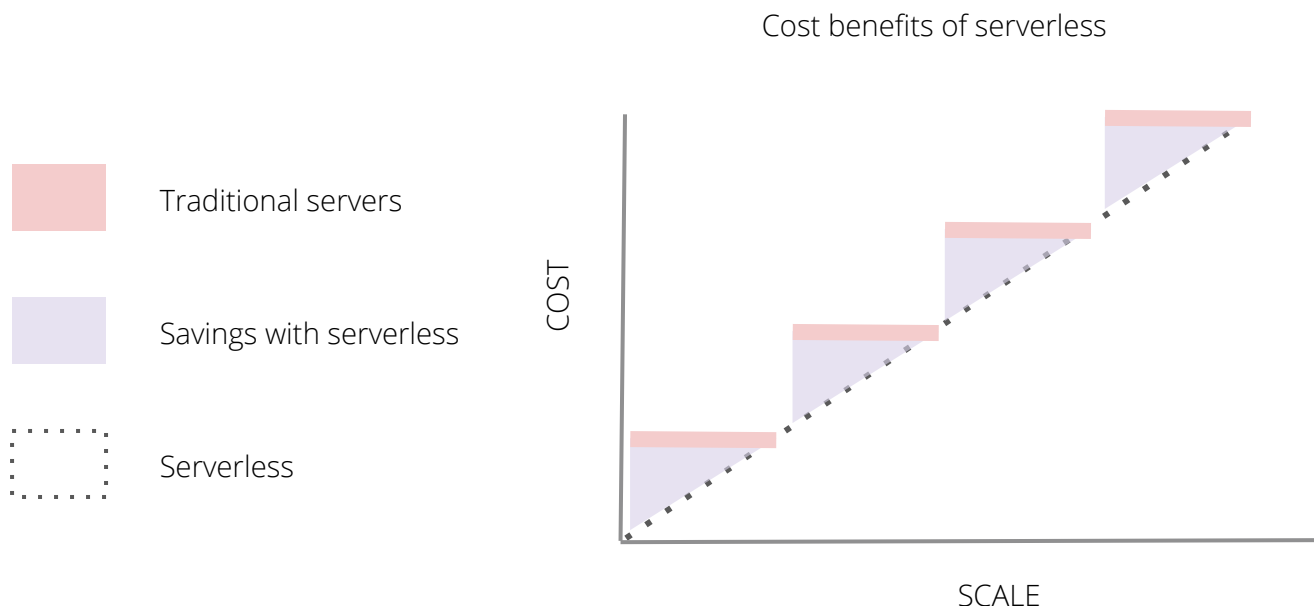
While content delivery networks (CDNs) are helpful in reducing origin dependencies by caching content on their networks, the emergence of highly dynamic content assets and video has caused increases in data transit costs for retailers.

- **Explore multiple cloud hosting solutions.** If your cloud hosting costs are beginning to increase and you're starting to feel a little locked in, or held hostage, that's not an uncommon sentiment. Many retailers are exploring how to avoid the "all your eggs in one basket" situation and how their hosting provider interacts with other cloud providers.
- **Negotiate data transit discounts.** Some cloud providers will offer significant discounts for data egress if content is served using their CDN. If you're concerned with vendor lock-in, this may not alleviate those concerns as it further increases those dependencies on a single provider. If you're already on the multi-cloud path, you should also explore what strategic partnerships various hosting providers have formed in response to these types of bundled offerings.

Reduce Server Overhead

As more workloads are supported in the cloud, it becomes easy to lose sight of how many servers or VMs are being used. Improper management of these resources can contribute to increasing expenses and higher monthly bills.

As retailers begin to increase the complexities of their online stores, this further contributes to server bloat and rising costs. An emerging technology that many retailers are deploying involves building serverless applications. Serverless is an emerging technology that leverages "functions as a service," which consume server resources only for point in time activities, significantly reducing overall server utilization.



How Cloudflare Helps

Cloudflare is a global cloud network, and is trusted by many of the world's leading eCommerce brands and retailers to improve the performance of their web properties, while also safeguarding customer data and transactions.



Ensure store uptime and availability

- DDoS mitigation
- DNS
- Load balancing
- Rate limiting



Secure customer data and transactions

- Web Application Firewall
- Bot Management
- TLS 1.3



Increase buyer engagement and conversions

- CDN
- Argo
- Image Resizing
- Stream



Reduce operational costs

- Bandwidth Alliance
- Workers

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