WEBSCALE

WEBSCALE TECHNOLOGY DIFFERENTIATORS

HOW TO USE THE CLOUD EFFECTIVELY TO BEAT THE COMPETITION

Running a digital commerce business is hard. There's the challenges of tracking the ever-changing needs of the online consumer, tweaking the marketing and business strategy to stay ahead of competitors, keeping the website design fresh and enticing for new and existing customers, and so much more. In fact, there are so many distractions for an online business owner, that staying on top of the website infrastructure and its security is almost an afterthought - something to worry about only if there's a problem - yet that complacency can cost businesses revenue and reputation.

THE "ANY PLATFORM" COMMERCE CLOUD

Webscale's "Any Platform" Commerce Cloud provides merchants with a cloud hosting platform powered by a portfolio of multi-tenant software-as-a-service solutions, automation tools, and technical features. Together, they deliver unprecedented uptime, blazing fast performance across both desktop and mobile devices, powerful application-aware security, and 24/7 support with industry-leading SLAs, guaranteed by certified cloud engineers.

Leveraging its team of multi-cloud specialists, and extensive use of cloud automation, Webscale delivers an exceptional user experience in any public cloud - Amazon Web Services (AWS), Google Cloud Platform, Microsoft Azure, and others - while making its services more manageable, consumable, and affordable for any sized business. With Webscale, all digital brands can use the cloud like a true utility – right sized, and paying only for the resources they need, when they need them.

- CDN
- PREDICTIVE AUTO SCALING
- LOAD BALANCER
- DYNAMIC SITE CACHE
- IMAGE MANAGER
- DDoS PROTECTION
- BLACKLIST / WHITELIST
- RATE LIMITING
- BOT MANAGEMENT
- ANOMALY DETECTION
- GEO-BLOCKING
- CUSTOM RULES
- INTRUSION DETECTION
- DISASTER RECOVERY
- AUTO-PROVISIONING
- WEB APPLICATION

Google Cloud   aws   Microsoft Azure

This whitepaper walks through a summary of Webscale's most differentiated features and examines how they come together to deliver a software-defined cloud hosting platform that addresses the most challenging needs of digital businesses today. These seven reasons bring the largest of brands to the Webscale platform, choosing it over market-leading managed hosts, managed cloud MSPs, and manufactured or custom-built clouds alike.

1. SAAS DELIVERY MODEL AND MACHINE LEARNING AT SCALE

Webscale's performance, availability, and security features have been built from the ground up to be delivered as multi-tenant SaaS (software as-a-service). As a result, every customer, from old to new, automatically has access to Webscale's most advanced technology features, because the platform has no versioning or end of life issues.
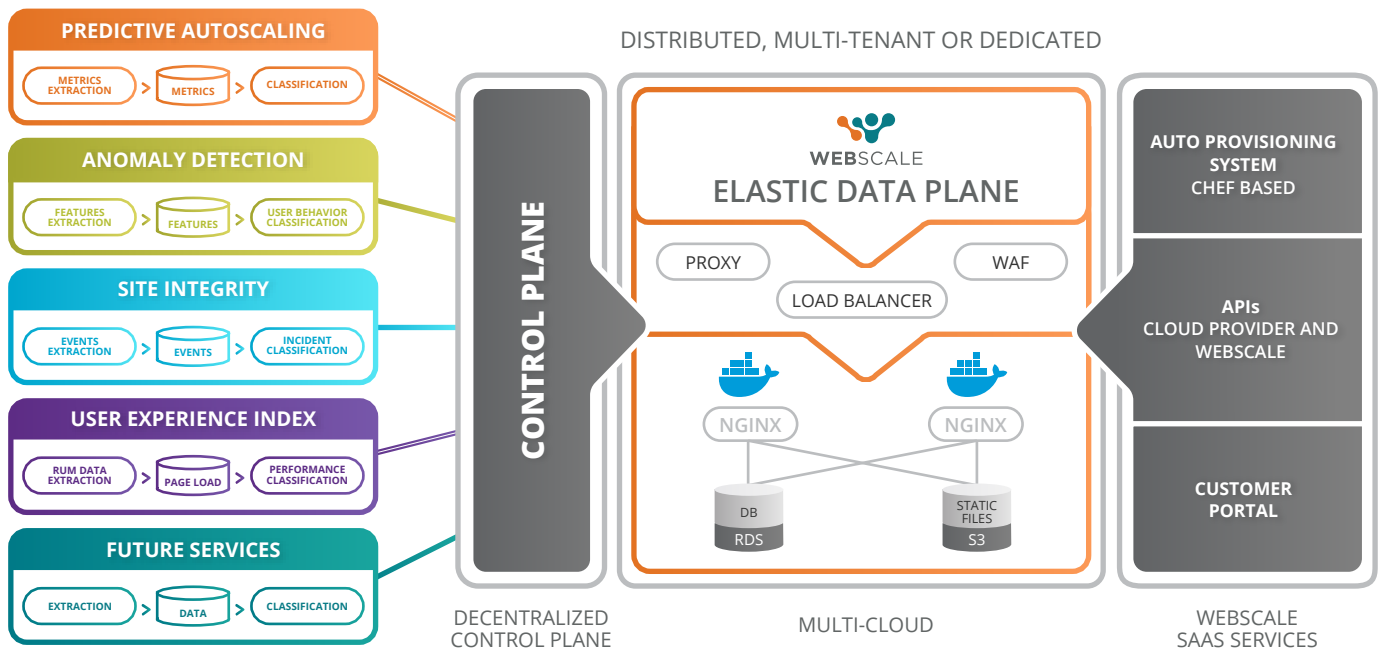
The Webscale platform continually gathers anonymous intelligence from every online storefront hosted, including traffic, e-commerce CMS, sessions, scaling needs, response times, cyberthreats, and more. This analysis, which can include more fine grain elements such as third party links, plugins, bots (good or bad), and data server needs, types or sizes, delivers a deeper understanding of the impact of these elements on the web application.

WHY SHOULD YOU CARE?

- Democratized access to Amazon-grade data and technology.

- Predictive auto-scaling without manual intervention or delay, either during scale-out or scale-in.

- Significantly lower costs with access to unlimited infrastructure on demand.

- Decision making based on real-time metrics, analyzed at scale.

- Always on the latest version of Webscale's SaaS stack.

This data, gained from billions of sessions across 1,200+ digital applications globally on the Webscale platform, is used in conjunction with machine learning algorithms to analyze, predict, and correct performance, availability, and scale out needs, as well as identify security threats as they emerge, without any manual intervention, in real time.

The ability to deploy machine learning at scale is a key differentiator when compared to a DIY approach, using dedicated hosting providers or cloud managed service providers (cloud MSPs) that rely on their teams to solve digital experience challenges. Their learnings are based on human experience gained from just one or tens of sites. Similarly, DevOps experts used to handle cloud migration and management, will not have

PREDICTIVE AUTOSCALING

METRICS EXTRACTION > METRICS > CLASSIFICATION

ANOMALY DETECTION

FEATURES EXTRACTION > FEATURES > USER BEHAVIOR CLASSIFICATION

SITE INTEGRITY

EVENTS EXTRACTION > EVENTS > INCIDENT CLASSIFICATION

USER EXPERIENCE INDEX

RUM DATA EXTRACTION > PAGE LOAD > PERFORMANCE CLASSIFICATION

FUTURE SERVICES

EXTRACTION > DATA > CLASSIFICATION

CONTROL PLANE

DISTRIBUTED, MULTI-TENANT OR DEDICATED

WEBSCALE
ELASTIC DATA PLANE

PROXY   WAF

LOAD BALANCER

NGINX   NGINX

DB / RDS   STATIC FILES / S3

AUTO PROVISIONING SYSTEM
CHEF BASED

APIs
CLOUD PROVIDER AND WEBSCALE

CUSTOMER PORTAL

DECENTRALIZED CONTROL PLANE   MULTI-CLOUD   WEBSCALE SAAS SERVICES

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access to the broader intelligence needed to solve complex infrastructure and user experience challenges, as they relate to specific application types, and they certainly will not be able to function 24/7. More importantly, their implementation experience will be limited to a handful of applications.

Hyperscale e-commerce brands, like Amazon and Walmart, have the unique advantage of being able to deploy tools similar to Webscale, because they have millions of shoppers transacting on their platform. As such, they can analyze data across billions of sessions, extracting insights at scale, and plan effectively for the future. Mid to high end digital commerce brands are unlikely to reach this scale, but with Webscale this advantage is now accessible to anyone, both in terms of capability and cost.

2. AUTO-PROVISIONING FOR CLOUD MIGRATION

As the leader in cloud management and control, Webscale works extensively with digital commerce businesses to help re-architect applications to take full advantage of the cloud. This process, the result of years of experience deploying hundreds of global storefronts, supports the segment's unique need for purpose-built features, scale, security, and performance optimizations. These would be impossible to achieve in managed hosting environments, or via the traditional "lift and shift" approach.

Webscale first defines every customer site or deployment as code. When managing commerce sites or applications, the site is documented in its entirety, from the network needs to the specific application components. Webscale creates a blueprint for everything including payment gateways, plugins, as well as backend integrations with the messaging and shipping system, whitelisting, and more. Once this is all collected and built out as software or code, every future change is adjusted in that same blueprint, ensuring it is permanently managed and preserved to avoid deployment or upgrade errors. This application code now resides within the Webscale custom-built auto-provisioning system, which can deploy any version of the application, into any cloud provider location worldwide, with a simple push of a button, and in a matter of minutes.

Webscale has built a number of basic application code templates, based on learnings from the 1,200+ digital applications we have migrated to the cloud. These code templates enable the simple deployment of additional sites, UAT (user acceptance testing) environments, load and functional test runs, cloud migrations, and more.

One of the biggest benefits of this approach is faster time to market, whether it's the first or fiftieth deployment. Webscale can build, deploy, and run sites faster than any other hosting provider or cloud MSP in the world. Our process typically takes 3-4 weeks from start to go-live, and with minimal downtime.

WHY SHOULD YOU CARE?

- Fastest cloud migration in the world.

- Leverages cloud-native architecture.

- Zero-touch deployments and upgrades.

- Massive error avoidance during deployments with easy rollback mechanisms.

- CI/CD integrations with code repositories.
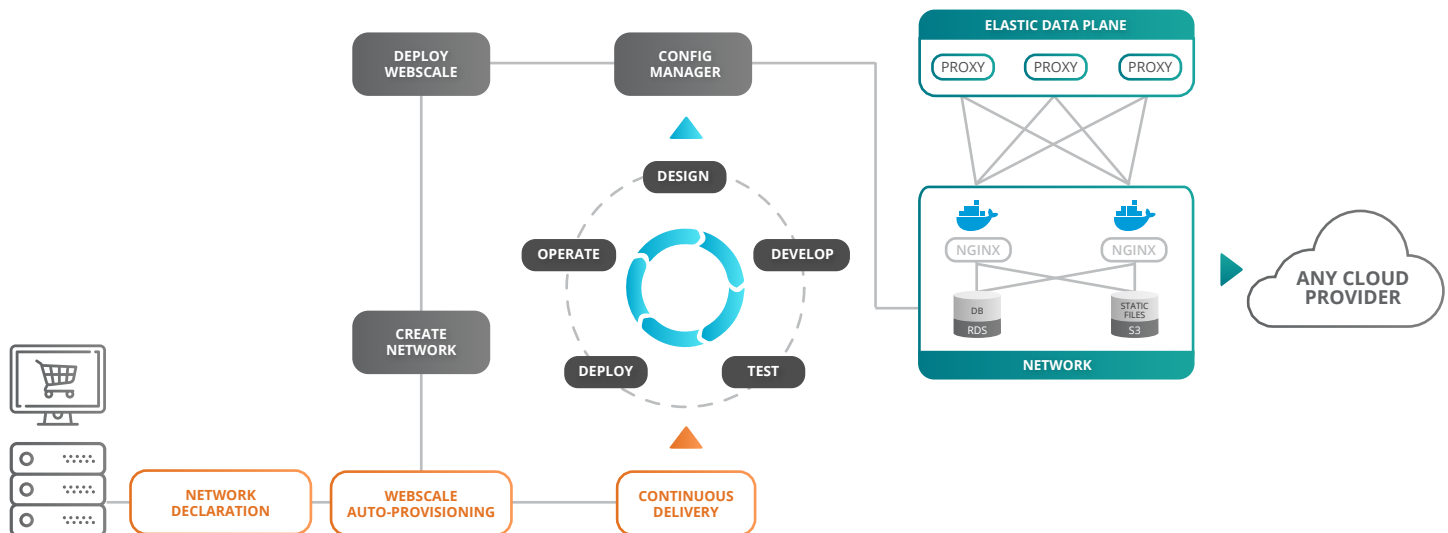
Another significant benefit of the auto-provisioning system is that it prevents human errors during deployment and beyond. Once the system is written in code, and every aspect is under source and version control, there is no likelihood of it being forgotten, damaged or lost in translation. Access to production systems is always limited to the auto-provisioner, instead of humans. It also helps in documenting and managing sites and applications as they evolve over time.

The concept of source control is particularly important for sites and applications that go through frequent changes and revisions, and those that have multiple users making changes from a distributed team. Webscale ensures that the site or application is always blueprinted for the future.

Webscale's auto-provisioning enables continuous integration and delivery (CI/CD), brings unprecedented levels of resilience for workloads, and enables zero-downtime deployments of code changes. For example, if the web application is returning errors after a code change, a rolled back system can be re-instated in minutes, returning the storefront to normal service with minimal disruption.

3. PREDICTIVE AUTO-SCALING

Online traffic is inherently dynamic and rarely predictable, especially for commerce brands. Regardless of how well one can forecast demand, there's simply no way to predict with 100% accuracy, the timing or expected traffic during a sale, a viral unplanned event, or an aggressive marketing promotion. This makes it difficult to plan for infrastructure capacity needs in advance, which means site crashes are, unfortunately, an inevitable and annoyingly frequent challenge in dedicated hosting setups. While downtime can be prevented by sizing infrastructure over and above what may be needed, according to well laid out plans, businesses will inevitably either pay for too much capacity, or run out of capacity, causing expensive downtime.

WHY SHOULD YOU CARE?

- Eliminate the fear of downtime during your most important, revenue-generating periods, with predictive auto-scaling that always stays ahead of customer demand and within budget.

- Stop over-spending - deploy an architecture that gives you what you need, when you need it.

- Leverage built-in resiliency to ensure a faulty server never disrupts the user experience of your storefront.

Webscale's patented predictive auto-scaling leverages big data and predictive analytics to forecast changes in user demand (site traffic), as well as subtle changes in application response times, and proactively scale-out (add) / scale-in (remove) application infrastructure (cloud-based compute resources or web servers), in real-time. This enables it to automatically and predictively adjust the capacity of a site in response to shifts in demand (traffic).

AUTOSCALING COMPARISION OF WEBSCALE VS. AWS
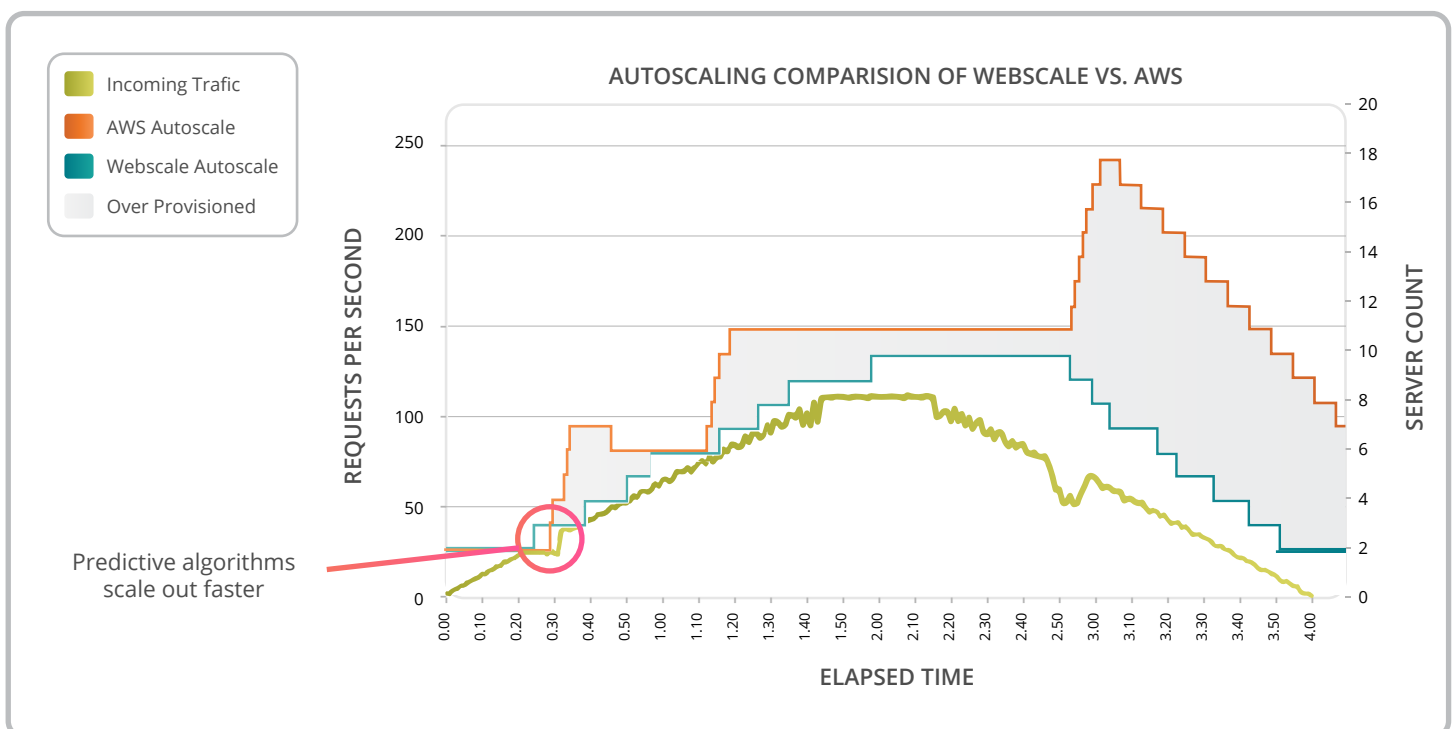
This aggressive scale-out and scale-in strategy ensures 100% uptime and consistently high performance, which translates to a great user experience, regardless of load or traffic surges. Webscale also automatically scales-out its own optimization resources to meet network and CPU demands, thus offloading the backend for critical tasks without any negative impact on revenue. Another advantage of Webscale's auto-scaling is that you always have right-sized infrastructure. Most cloud provider scaling technologies today are slow to scale-out, and even slower to scale-in, resulting in reduced performance and increased costs without the resulting uptick in revenues. Webscale's right-sizing is always optimized for the lowest cost and highest ROI, without compromising on user experience.

Webscale also proactively monitors the status of application resources, enabling the real-time identification and self-healing of failing applications. The Webscale cloud automation stack immediately halts traffic to such failing instances and replaces the faulty application servers before they cause disruption.

4. PROGRAMMABLE WEB APPLICATION FIREWALL

There are many different web application firewall (WAF) solutions in the market today, ranging from free to very expensive, appliance-based to SaaS, and low to high-throughput. For mid-sized and large digital commerce businesses, most of these "front door"-type solutions prove inadequate as cybercriminals are becoming more sophisticated, using automation and "back doors" to execute attacks at scale. The most sophisticated hackers today are no longer looking for open ports or launching massive DDoS attacks; instead, attacks are becoming more frequent at the application layer where most of the customer information resides. The need for advanced security to protect digital storefronts, and users' identities and credit card data, is higher than ever before.

Most WAFs have pre-defined rules or policies included for protecting against commonly known threats, such as the OWASP Top 10. Additional rules may also involve blacklisting IP addresses belonging to known bad actors, malicious bots, or suspicious visitors. However, these commodity WAFs struggle when the origin of the attack doesn't show up on published lists of bad actors, or when merchants are facing a zero-day attack, or dealing with a cyber-attack that's already in progress. Merchants need to be able to customize their WAF and manage their traffic behavior, in real-time, and with a SecOps team available to support the process.

To customize and configure new security rules in a WAF, such as blacklisting, whitelisting, geo-management of traffic, and more, you need the help of a security expert that can make the necessary code changes and ensure there is no downtime associated with these decisions. These highly-skilled professionals can be both expensive and hard to find, which is where Webscale's WAF comes to the rescue. With its ease of programmability and deployment, Webscale allows business professionals to make changes with just a few clicks.

The common functionality found in most WAFs is table stakes. Webscale's programmable WAF contains features and optimizations purpose-built for digital commerce applications and platforms that are not found in standard web app firewalls, or most CDN firewalls. The Webscale Cloud WAF assesses cyberthreats by analyzing data extracted through anonymous session and visitor behavior, across more than 1,200 online stores and web applications. These learnings include everything from traffic type and locations or IPs of malicious traffic, anomaly detection for bot mitigation and management.
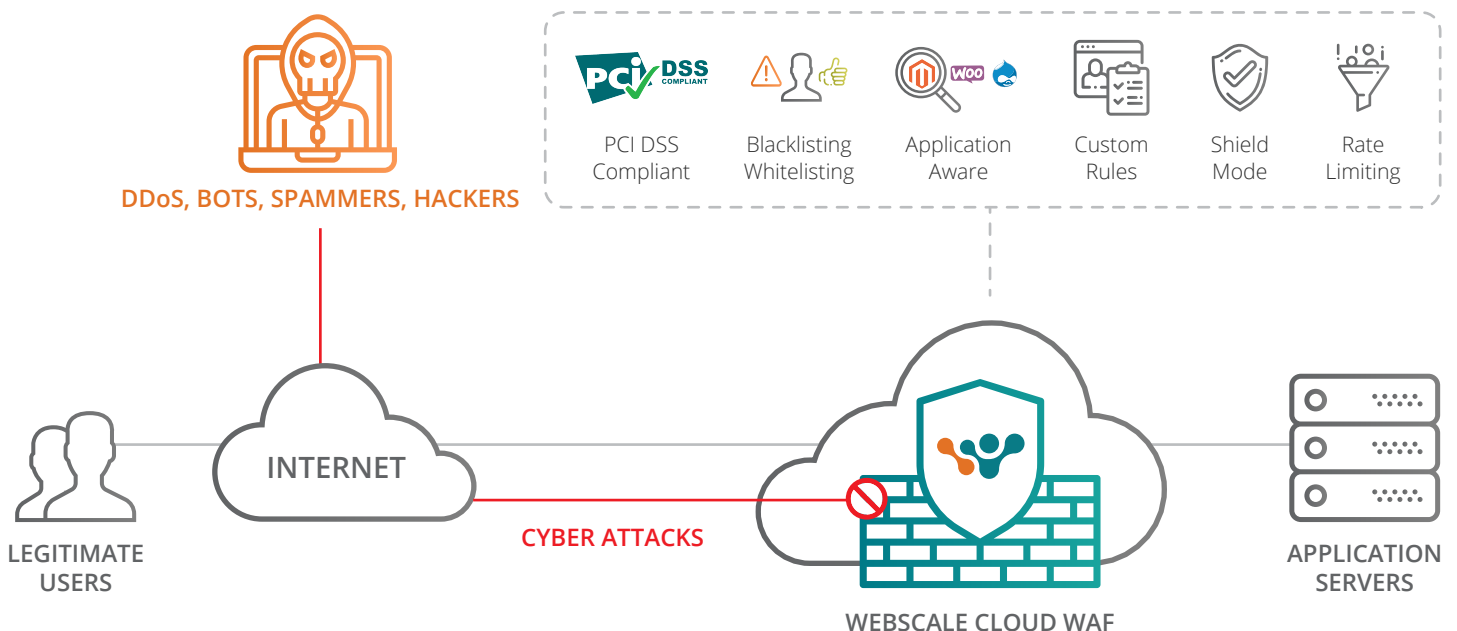
Security fixes may include restricting certain traffic types and their interaction with the site itself, like the execution of Javascript on certain pages of the site. Virtual patches, typically developed in conjunction with a partner to permanently address security issues, are seamlessly delivered to our customer base in a SaaS model.

With the Webscale Cloud WAF, you don't need to install, run, manage, or monitor anything if you're looking for basic firewall functionality. The in-built programmability makes it unique however, enabling WAF users or admins to make simple changes with a few clicks, going beyond mere traffic blocking, to determining how to handle, re-direct, block or slow down certain traffic.

WHY SHOULD YOU CARE?

- Protect your customers' data at every point of your infrastructure, from the browser to the backend.

- Gain control of your security, without the need for expensive security-specialized personnel.

- Experience world-class security protocols delivered courtesy of threat data collated across more than 1,200 storefronts.

- Enjoy peace of mind that you are always up-to-date, and protected against the latest threats, even if you haven't installed all the latest patches.

- Achieve application flexibility - don't rush an upgrade or a re-platform. Maintain a robust security posture, without being at the mercy of third party software companies for patches.

- Have access to a world class team that watch your systems while you work, rest or vacation, 24/7.

For example, you can re-direct traffic coming from scraper bots (designed to steal content and pricing data from your site to be used by competitors) to an alternate backend. No other WAF offers this kind of simplicity and programmability, while being integrated with backend systems.

PCI DSS Compliant   Blacklisting Whitelisting   Application Aware   Custom Rules   Shield Mode   Rate Limiting

DDoS, BOTS, SPAMMERS, HACKERS

LEGITIMATE USERS

INTERNET

CYBER ATTACKS

WEBSCALE CLOUD WAF

APPLICATION SERVERS

The Webscale Cloud WAF provides robust protection for both data traffic at the browser level and the complete backend application infrastructure. While App Shield provides a single-click security mechanism that blocks traffic accessing the infrastructure directly so it has to pass through the Webscale data plane, the Webscale Cloud WAF, and other security barriers, Webscale's Shield Mode offers single-click protection when under a suspected Distributed Denial of Service (DDoS) attack, or a flood of bots, by instantly forcing a challenge that only humans can validate. The intrusion detection and scanning capabilities, as well as event viewer and audit trails, come together to alert users to any unauthorized changes in the application or data servers, mitigating the threat of zero-day exploits.

With any other WAF, merchants must have a detailed understanding of the differences between good and bad traffic, as well as the varying methods used to disguise malicious traffic as non-harmful. The Webscale firewall comes integrated with bot management and anomaly detection, negating the need for merchants to have this in-depth knowledge, or the need to acquire additional third party functionality that needs to be deployed and integrated into existing workloads. Webscale Cloud Bot Manager delivers advanced bot management capabilities, proactively identifying suspicious browsing and attack patterns through reputation and machine learning techniques, and mitigating malicious bots. The unique combination of insight and management through Cloud Bot Manager, combined with the flexibility of Web Controls (learn more below), allows for unprecedented security and flexibility.

Perhaps one of the most important benefits of the Webscale WAF is virtual patching. Security breaches on digital commerce storefronts are, more often than not, attributed to missing security patches that have not been installed in a timely fashion. Due to Webscale's SaaS delivery model, the moment a security threat has been identified, and often before a formal patch has been released, custom Web Controls and additional policies are immediately put in place to block the behavior and execution of that threat, all from within our WAF. This gives customers additional time to download and install the required patches, since the ability for anybody to act on their brief vulnerability has been immediately eliminated.

Finally, our multi-cloud-certified SecOps team delivers world-class incident management and monitors customer site security, providing customers with a fully managed security experience.

5. WEB CONTROLS AND
THE WEBSCALE PORTAL

Web Controls provide a powerful way of setting up unlimited custom rules that define how to handle web traffic and the nature of your site's response to specific behavioral patterns. It is a limitless custom rules engine that enables merchants to accomplish and automate many ongoing tasks like re-directs and security protections; without such a tool, merchants would need to create large quantities of custom code to set up behaviors on the frontend and backend of their sites and applications.

As an example, Web Controls can be used to re-direct scraper bot traffic to an alternate backend, or allow traffic from different geographies to see different kinds of content, languages, or even different currencies, without having to run multiple backends with localized domains, like customer.co.uk for UK customers.

Web Controls enable site administrators to capture business intent and use that information to create simple rules within the Webscale portal. They can also create the equivalent of firewall rules, negating the need for the user to have a deep technical understanding of how to build them.

Web Controls enable site admins to use pre-defined, pre-tested security rulesets based on their digital commerce application, minimizing the need to discover, define, and maintain the rules themselves.

Web Controls have been designed to be easy and intuitive, and allow a user, of any skill set (technical as well as non-technical), to quickly take actions to ensure the high availability, enterprise-grade security, and fast performance of their web applications.

WHY SHOULD YOU CARE?

- Gain visibility, insight, and control over every aspect of your site's infrastructure through one application.

- Quickly, easily identify issues or trends, make decisions, and take actions to improve your site's availability, security, and performance, without a deep technical background.

- Gain access to unlimited Web Controls to support business needs.

INTENT:
PROTECT PRICING DATA

SCRAPER BOTS → WEB CONTROL → RE-ROUTE → ALTERNATE BACKEND
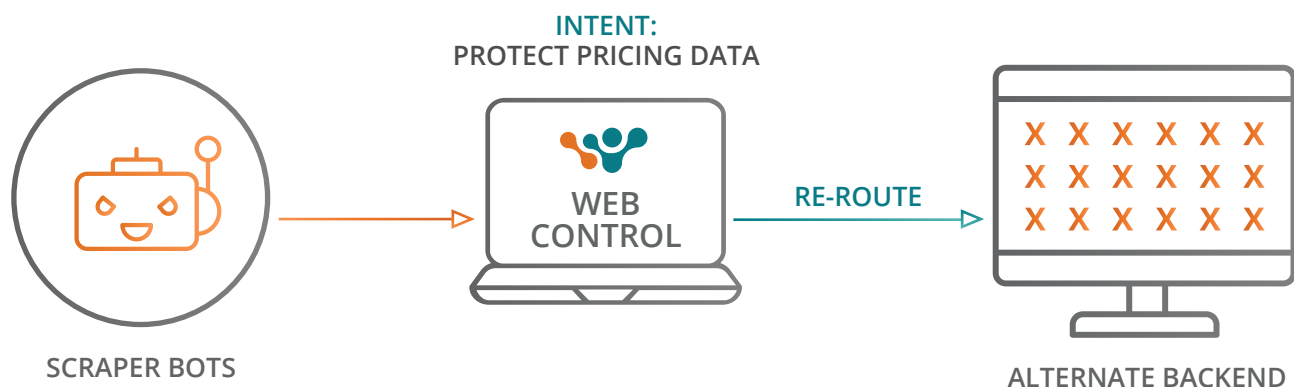
A few more examples of what you can accomplish with Web Controls, include:

- *Blocking certain requests for a specified duration.*
- *Blocking all traffic from a specific country, if you don't want to do business with potential customers from that country, or just blocking traffic that has a specific referring source.*
- *Rate-limiting resource-intensive user sessions to mitigate their impact on the overall application performance, and much more.*

Web Controls can be created or activated within the Webscale portal. The Webscale portal is the only visibility solution that delivers an integrated view of your digital commerce application, including your site infrastructure, logs, traffic, security posture, cyberthreats, good and bad actors/bots, availability, performance, and more – through a single pane of glass.

Every website needs an intelligent visibility tool that provides insight into the health of the digital business (traffic, sources, conversions, etc.), hosting infrastructure, and user experience. There are many tools that will accomplish the former objective, the most popular one being Google Analytics. However, few visibility solutions can claim to offer a comprehensive view into a website's infrastructure and user experience, which includes everything from event logs to uptime, performance, and security. The Webscale portal replaces the need for broader application tools for infrastructure or application visibility alone, where the diagnosis of issues becomes a complicated triangulation process.

6. MULTI-CLOUD CERTIFIED PROACTIVE SUPPORT TEAM

Webscale's 24x7x365 DevSecOps support team is staffed by multi-cloud certified, digital commerce experts that have migrated, and continue to manage more than 1,200 online storefronts in seven countries, across platforms such as Magento, WordPress, SAP Hybris, Oracle Commerce, Drupal, Joomla, Ruby, and custom applications. Unlike many traditional hosting providers, Webscale's team is certified in complicated, multi-cloud, and scalable environments, including Amazon Web Services (AWS), Google Cloud Platform, and Microsoft Azure. The best practices implemented for merchants on the Webscale platform are the result of metrics collected, and patterns analyzed, through machine learning at scale across the entire customer base, ensuring unmatched user experiences, 100% uptime, predictive scaling, robust security, and blazing fast performance.

WHY SHOULD YOU CARE?

- No other hosting provider has Webscale's depth of experience in hosting and managing enterprise and mid-market digital commerce applications, across B2C and B2B, in the cloud.

- Leverage Webscale as your technical resource or augment your internal teams for seamless, reliable infrastructure management.

- Get access to a team qualified in DevOps, cloud technology, web and infrastructure security, compliance and e-commerce.

With more than 50 cloud accreditations and certifications across AWS, Google Cloud Platform, and Microsoft Azure, industry-leading response time SLAs, and five years of flawless execution, particularly around the holidays, Webscale offers the industry's highest standards of support. The company offers these services to enterprise grade and mid-market digital brands who operate their storefronts, as well as related applications, in the public cloud.

All Webscale DevSecOps specialists are qualified in multiple cloud technologies and deployment models, coupled with deep experience of the unique challenges of the digital commerce space. A merchant adopting a DIY approach, with in-house DevOps personnel, would struggle to achieve this same depth of understanding. As such, Webscale can provide a perfect extension to a merchant's support and technical teams.

50+ CERTIFICATES

aws partner network

Advanced Consulting Partner

Google Cloud Platform

Microsoft Cloud Solution Provider

24x7x365

1200+ APPS

Magento

Drupal

WOO COMMERCE

7. CDN INTEGRATION AND PERFORMANCE OPTIMIZATION

Webscale uses existing cloud CDNs to give online stores a global or regional footprint, so they can cache content close to end users and improve page load speeds. However, the required intelligence for performance, optimization and management, for any CDN, comes from the Webscale patented software stack.

Any web expert can turn on a CDN for an application with a simple DNS-CNAME change, but to truly leverage the benefits of a CDN, a layer of intelligence is needed to solve issues like:

WHY SHOULD YOU CARE?

- Improve mobile and desktop performance, boosting conversions and delivering higher revenues with a fully integrated Image Manager.

- Use the content delivery network (CDN) you want or are contracted with, or get one included with the Webscale stack at no cost to you.

- Access global delivery networks and premium functionality for pennies.

- Don't worry about the integration nightmares of CDNs or Image Managers.

- *How do you manage domain sharding and not have everything under a single domain?*
- *How do you separate out the images? Where do you store them? How do you manage them?*
- *When do you pull images from storage buckets sitting in the cloud provider to manage costs and assets?*
- *When do you integrate image management into the CDN, so you are not managing ten versions of one image for different devices and screen resolutions, and delivering the right images from cache without error?*
- *How do you optimize not just your own content, but also cache and optimize third party content that may be slowing down your site?*

With premium CDNs increasingly offering advanced features like image management as a solution or add-on, they are rapidly becoming more than bit-delivery networks. However, these advanced security and performance features come with a hefty cost and significant vendor lock in. Webscale's Cloud Image Manager automates image optimization and management for merchants, ensuring online buyers receive the right image for their specific device, every time, and ideally always from the cache closest to the end user. Cloud Image Manager compresses images and reduces bytes delivered, improving site speed and conversion rates, especially for mobile users, while saving costs related to performing these tasks manually.

Webscale also accelerates sites and applications with in-built intelligent caching in its data plane. Webscale uses advanced page and content optimization techniques in real-time, such as JavaScript minification or combining of assets, to optimize web page asset delivery, reduce round trips and page size, and dramatically improve performance. Webscale's Dynamic Site Cache delivers lightning fast page loads for users when they visit a storefront for the first time, by allowing caching of HTML pages and content for anonymous or non-logged in sessions. Furthermore, Webscale's powerful Web Controls give administrators the ability to

enhance performance by configuring third-party assets to be deferred or downloaded in parallel, speeding up overall page load times.
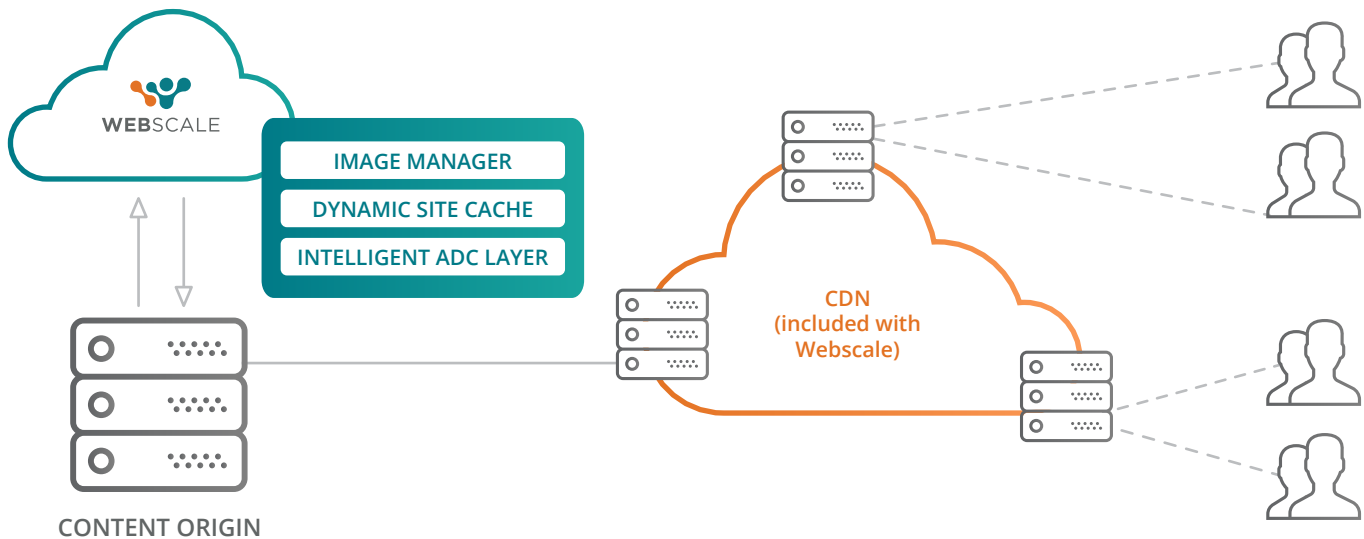
CONCLUSION

Digital commerce merchants on the Webscale "Any Platform" Commerce Cloud have access to the same technology stack and capabilities that the largest brands like Amazon and Walmart have built, without having to invest in a huge team and spend hundreds of millions of dollars in infrastructure. They are also spared from cloud infrastructure management challenges, often leading to escalating infrastructure costs, among other things.

Supported by the world's leading experts in cloud technology and digital commerce platforms, Webscale delivers an exceptional digital commerce presence that improves revenues, conversions, recall, and loyalty. But perhaps, most importantly, Webscale is dedicated to delivering on its mission of helping merchants focus on building their businesses, not on managing their infrastructure.