WEBSCALE

GUARANTEED E-COMMERCE SUCCESS WITH WEBSCALE AND THE CLOUD

INTRODUCTION

Many experts declared 2015 as the year of the cloud[1], with 55% of retailers moving to the cloud that year[2]. The continued growth of e-commerce is continuing to fuel this trend into 2016, so what are the key things an e-commerce business needs to know? While some would have you believe that moving to the cloud is a simple migration of content, there is more to consider if you want your website or application to flourish and grow with an increasingly demanding customer base.

EVERY SECOND COUNTS

Research has revealed that 47% of consumers expect a web page to load in two seconds or less, and 40% abandon websites that take more than three seconds to load. Nearly 80% of shoppers are unlikely to come back to your site if they deem your website performance to be too slow and more than half claim that quick page loading is a major factor in their brand loyalty. With as little as one second of delay decreasing customer satisfaction by 16%, it's clear that every second counts[3]. However, in e-commerce, slow performance is not actually a performance issue, but an availability issue.

So what must an e-commerce business owner, CTO or CMO understand if they want to create something truly awesome?

IT ALL STARTS WITH GREAT CODE

No amount of optimization, acceleration, or infrastructure can take poorly written, non-scalable code and transform it into a high-performing application prepared for any level of traffic. Increasing your hardware footprint may mask the issue for a while; implementing a CDN will enable some of your resources to be delivered faster; but regardless of your existing platform (Magento, Zen Cart, Drupal, WordPress, for example), or whether you are using a custom written application, great code is always going to be the most important factor in making an application shine.

The role of the developer or system integrator is to know the application better than anyone else and to ensure that every effort has been made to make the code as efficient as possible. This includes techniques such as caching, both at the application level and at the end-user's browser, minimizing demand on other resources, such as databases, and allowing for maximum concurrency. Best practice methods at this stage of the process provide a strong foundation for other technologies to be deployed that will dramatically increase site performance and ensure that it is stays up and available at all times.

ACCELERATION TECHNIQUES

There are multiple methods available to improve the end-user experience of any type of web application, each with their own benefits and specialties. Most methods fall into two categories; content delivery networks (CDNs) that, put simply, work with static content, and application delivery controllers (ADCs) that work with dynamic content.

CDN

A CDN delivers application assets including images, javascript, and stylesheets from a worldwide network of endpoints or points of premise (PoPs), such that the assets are delivered from a location geographically close to the end-user. This has two primary benefits; the time to download each asset is reduced, and the load on the application servers is reduced allowing them more cycles to deliver non-static content. Offered typically as a service, there are two models for getting content into a CDN. In a "push" model, the content is sent to the CDN provider, who then distributes it to the point of presence (POP) in its network. In a "pull" model, a request to a CDN, for an asset it does not have, is forwarded to the originating application and then cached for future delivery.

ADC

An ADC accelerates the end-user experience by modifying the contents before delivery. This can include caching on the ADC, minifying javascript, removing unused stylesheet content, re-sizing images, domain sharding, and rewriting asset location to pull from a CDN. ADCs can be implemented on hardware, as software, or as a service. Not all ADCs are created equal, as such, website owners need to look to ADCs that have the capability to self-heal in the event of a failure, and to expand capacity when any resources such as bandwidth or compute cycles limit the ADC tier.

THE RIGHT-SIZED ARCHITECTURE CHALLENGE

Ensuring that your architecture, cloud or hardware, is ready to manage demand from both your current and future customer base is extremely challenging. Infrastructure managers can choose to size the architecture for the estimated peak load on the system, be over-provisioned and subsequently over-spend when not at maximum capacity. Alternatively, they can reduce cost and size the architecture for the typical load on the system, running the risk of going down at a time when sales are going up. Many managers opting to take this route believe that they can simply add new systems and expand capacity during times when surges in traffic are expected. However, this is ultimately a no win situation, as either money is being wasted unnecessarily if the traffic doesn't come, or the web application is constantly at risk of a viral event or marketing "success" exceeding the estimations and taking the application down for everyone.

SCALING TO MEET DEMAND

The cloud offers the only viable solution for managing these complex scenarios, and some cloud providers have started to offer "dynamic scaling" to address the issue. Promising improved flexibility in deployments, these services can take much of the guess work out of the process, reducing the need to predict and manually bring additional resources online. The scaling is governed by thresholds set by the infrastructure manager, and integrated with a load balancer (provided by the cloud provider, or sold separately) so that traffic can be distributed evenly across the dynamically created servers.

However, while these implementations can work in some situations, they are always reactive, either not scaling until there is already a problem, or wasting money scaling at a lower threshold when not necessary. More importantly, if you are an e-commerce website with a global business, you are likely deployed across multiple vendors in multiple geographic regions. If this is your situation, then being reliant on a single vendor is simply not practical and a cloud-agnostic solution, that can be deployed across private, public and hybrid clouds is not only desirable, but critical to the growth of your business.

TRULY PREDICTIVE SCALING - ANYWHERE YOU NEED IT

Predictive scaling solves these issues by getting ahead of the load and right-sizing the architecture to meet the current and short-term forecasted demand. With the Webscale ADC, this can be deployed across all cloud providers, as well as across hybrid clouds that may use a combination of on-premise hardware assets and the public cloud.

As the leading cloud ADC that intelligently predicts demand and infinitely scales your application infrastructure appropriately, in real time, without manual intervention, the Webscale ADC gives e-commerce business owners unprecedented control over their web presence.

CONCLUSION

In early 2015, US Olympian Michael Phelps shared an image on his social media channel of a ring he had bought for his girlfriend. Vintage and antique jewelry specialist, Trumpet & Horn was quickly inundated with visitors once Phelps' more than one million followers followed his post. As a Webscale customer, Trumpet & Horn were ready, even though the traffic was completely unexpected. Within a period of just a few hours, their infrastructure scaled from two instances to six, ahead of demand, and then scaled back to two once the surge has subsided – all without any human intervention and without any drop in site performance and availability.

This is one of many examples of the Webscale advantage. All you need to do is focus on creating a great idea, with great code and let Webscale accelerate, optimize and right-size your architecture to ensure the world gets to see it.

FOOTNOTES

(1) http://www.infoworld.com/article/3014613/cloud-computing/2015-was-a-banner-year-for-the-cloud.html
(2) http://www.thewhir.com/web-hosting-news/half-us-retailers-plan-move-ecommerce-hosting-cloud-2015-report
(3) http://insights.wired.com/profiles/blogs/47-of-consumers-expect-a-web-page-to-load-in-2-seconds-or-less