

## IS YOUR E-COMMERCE PLATFORM SLOWING YOU DOWN?

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After countless hours spent meticulously creating your business plan and launching your e-commerce platform, here you are a few months later and business couldn't be better. Every day, website traffic is steadily increasing as more customers hear about your brand and fall in love with what you have to offer.

With that increase in traffic comes a corresponding increase in sales and, as such, you feel as though the sky is the limit in terms of how much your business will grow. After all, customers are increasingly making digital purchases. In fact, recent research indicates that the projected take in for U.S. retail e-commerce markets will approach \$491 billion.<sup>1</sup>

But all of a sudden, seemingly out of nowhere, your website starts acting funny. Everything was going smoothly, but in a matter of seconds, your site has slowed tremendously. Now it's plagued by latency, bottlenecks, and maybe even some unplanned down time.

As a business owner, you fully understand the importance of creating strong customer experiences with each and every transaction. After all, frustrated customers are much more likely to take their business elsewhere or perhaps worse yet, take to social media to complain about their bad experience.

In order to create positive experiences, you need a website that's operating as optimally as possible. Today, nearly half of customers expect websites to load in two seconds or less.<sup>2</sup> The longer your site takes to load, the more likely customers are to abandon it. With these things in mind, you ask your IT team what's causing your e-commerce site to behave sluggishly, but they're not saying much that makes sense to you.

In actuality, you might have thought that the sky was the limit in terms of just how much your e-commerce business could grow, but the truth of the matter is that your sky-high growth may in fact be slowed down by your underlying database.

## Is Your Database Prepared to Handle Increased Loads?

Today, many up and coming e-commerce sites are powered by MySQL databases. While MySQL certainly can accommodate a steady volume of web traffic for new e-commerce sites, it does have its limits. For example, such databases can absorb growth from zero users to a certain point without a hitch. But scaling past that point might cause significant strain as your database nears its capacity. The interesting thing is "that point" is not absolute as it is based on many variables, including number of products, volume of users, and website administration tasks, just to name a few.

In other words, a traditional MySQL database is a fine piece of technology to power your e-commerce platform as your business begins to grow. But if that growth continues—as is your goal—MySQL, lacking seamless scale-out functionality, will most certainly reach its maximum capacity. In so doing, your website will grind to a halt, resulting in abandoned shopping carts, lost sales, and, most importantly, frustrated customers. Simply put, if your e-commerce site succeeds but your database can't accommodate that success, you will fail as your earning potential is capped and your customers become dissatisfied.

The good news is that this kind of chaos can easily be avoided. By building your e-commerce platform on top of ClustrixDB, an innovative scale-out database designed for e-commerce, you're able to rest comfortably knowing that your website can handle as much traffic as it needs to. By simply adding more database servers, you're able to seamlessly increase throughput and capacity. As a result, your business can grow with confidence, never pausing to worry about whether your e-commerce platform can handle the load.

In the pages that follow, we'll explore the options e-commerce retailers have when it comes to scaling their database, and why there is an impetus for them to deploy cutting-edge database technologies so that their businesses can grow comfortably while providing optimal customer experiences. We'll then show why ClustrixDB is the right choice for any e-commerce retailer who has his or her eyes set on long-term, sustainable business growth.

## The Problem of Having a Database that Cannot Scale

In today's digitally driven world, customers have virtually endless amounts of e-commerce vendors with which they can choose to do business. In other words, if your e-commerce platform is performing sluggishly, customers can find a similar product somewhere else rather than choosing to deal with a slow website. Just think about what you can find on Amazon.

If your database can't scale effectively while your website welcomes a large influx of traffic, there's a good chance that your e-commerce platform will slow down to a crawl, resulting in unplanned down time and lost revenue.

No matter the size of your business, the financial implications of such a crash can be quite significant. Just consider what happened when Amazon went down in August of 2013. Industry pundits predicted that the mega e-commerce retailer lost about \$66,000 per minute of down time.<sup>3</sup> But even small businesses are not immune to feeling the pain, as down time costs such companies about \$12,500 each hour that systems are not online.<sup>4</sup>

## So why is down time so crippling from both a monetary and reputational standpoint?

### ***When your website isn't working properly, your customers will be frustrated.***

Even though most people who use computers and the Internet have little to no knowledge about the complexities required to make such ecosystems work, they easily get annoyed when these technologies don't work exactly as they expect.

Let's say one of your customers, Sarah, has decided to purchase an item for sale on your e-commerce site. She logs on to your site, finds the item, and adds it into her shopping cart.

What she doesn't know is the sheer volume of users trying to buy other items on your site at the same time. After adding the item to her shopping cart, she tries to check out, but the sale is unable to be processed. She might try two or three times, but it's only a matter of time before she gives up out of frustration and chooses to look for a similar item elsewhere. Suddenly, shopping cart abandonment becomes a very real possibility for your business.

### ***When your website isn't available, it's impossible for you to make a sale.***

Suppose Sarah is as patient as they come, and even though she unsuccessfully tries a few times to buy something from your site, it doesn't really bother her that the transaction doesn't go through. She shrugs her shoulders, closes her laptop and turns on the television, thinking she will just try tomorrow.

Tomorrow she gives it another whirl and pulls up your website, locates the item again and once again adds it to her cart. But then she changes her mind, deciding she doesn't really want the product after all.

If your e-commerce site was working as it was supposed to, you would have made a sale yesterday when Sarah wanted to buy something on an impulse. But because it wasn't, you missed out.

Multiply these two scenarios across many customers and you can quickly see the problems evident in building your e-commerce site on a database that can't easily scale with your business success.

Now that you understand the importance of having a database that can scale to absorb traffic spikes, seasonal demand, or a rapidly growing customer base—and the very real consequences of down time—you'll need to know what options are available to you so that you can make the best-informed decisions as to which database solution makes the most sense for your business.

Generally speaking, there are three routes you can choose to take, described below.

## 1. Replatforming

If the technological infrastructure isn't good enough to accommodate your growing business, you might think it's time to migrate your e-commerce site to a new platform altogether. For example, you might decide to switch from a Magento/MySQL implementation to an Oracle- or SAP-based solution. Replatforming may be an option for your business, but it is certainly not something that can be entered into without serious risks either.

Take a step back and think for a minute. Do you really want to incur the immense risks—not to mention equally large costs—associated with replatforming? What would happen if problems arose during that migration? Would your data be safe?

Choosing to replatform is an enormous undertaking. As such, you'll have to deal with the fact that many new platforms are not "drop-in compatible" with existing site designs, which means that this kind of transition requires large rewrites of code. On top of that, your site hosting infrastructure changes, so your IT team will need to undergo extensive retraining to become familiarized with the new technology.

## 2. Sharding

Imagine you have a sheet of glass in your hands. You drop it on concrete, and it shatters, producing multiple glass shards as a result.

In database terminology, sharding gets its name from such a scenario. In order to scale a MySQL database, some e-commerce retailers decide to go the route of database sharding, which partitions the database across multiple servers.

While that might be a perfectly fine workaround to the lack of scalability in the traditional MySQL database, it results in having to manage essentially multiple databases rather than just one. Even if your database administrators are experts and manage those databases perfectly, they'll have to do so in the face of twice the latency and three times the code.

In other words, sharding results in the loss of the power of the relational database. Administrators have to deal with more bugs and analytics become that much harder to perform. If that's not enough, application development becomes significantly more complex.

The good news? None of that has to happen.

## 3. A scale-out, cloud database designed for e-commerce

Rather than migrating to an expensive new platform or deciding to give up the utility a relational database provides, you can choose a much more efficient, cost-effective solution: ClustrixDB.

The only cloud database designed from the ground up specifically for e-commerce, ClustrixDB was built to scale with your business success. To accommodate increasing traffic, ClustrixDB absorbs more servers into its database cluster with zero code development and zero down time, allowing your e-commerce site to scale seamlessly without having to worry about whether your database will be able to handle the load.

With ClustrixDB, your e-commerce site can easily flex up database capacity and throughput to keep pace with an ever-increasing and variable volume of customers, products, and orders while reducing the risk of costly slowdowns and outages. ClustrixDB also allows you to flex down to take advantage of the valleys as well.

When you replatform you have to write tons of new code and risk compromising your data, but if you're currently running MySQL, you'll enjoy a seamless migration to ClustrixDB. As such, your site will be upgraded without a hitch, and your customers will enjoy an uninterrupted e-commerce experience.

As a result, ClustrixDB empowers e-commerce sites, as owners no longer have to worry about whether digital customer experiences will be optimal. Rather, they'll be able to rest comfortably knowing that they are.

## **So, tell me more about ClustrixDB**

How can we be so confident that ClustrixDB is the right solution for your e-commerce platform? Because our scale-out cloud database will grow with your business, ensuring optimal shopping experiences for your customers.

### ***You'll gain revenue that would otherwise be lost***

When your systems are offline and your customers can't buy anything from you, you miss out on potential revenue. ClustrixDB boasts built-in fault tolerance for high availability, which means that your critical customer data is automatically replicated within the database. Such functionality means that your data stays available with no data loss even in the face of disk or server failure. That's because in the background, ClustrixDB is automatically rebalancing and reprotecting your data. In other words, one of your database servers could fail and your customers wouldn't even notice. As a result, your revenue stream keeps flowing.

### ***There's unlimited growth potential for your e-commerce business***

When you build applications on top of limited databases like MySQL, your e-commerce success will almost certainly result in your site's slowdown or failure. Rather than waiting for your traffic to meet that ceiling and dealing with the problem then, you need to be sure that you can ride the wave of increasing momentum beyond that threshold. By upgrading your current database to ClustrixDB, you're taking a proactive step to ensure customer satisfaction as your business grows. That's because your customers will enjoy an optimal e-commerce experience no matter how many other people are shopping with them.

### ***Your customers will be happy, and they'll return***

Maybe your competitors haven't upgraded their databases, and their customers are experiencing the frustration that results from a misbehaving website. If you've upgraded your database to ClustrixDB and those frustrated customers land on your website, they'll undoubtedly have a pleasant experience as things will operate precisely as they're designed. Customers will remember that pleasant experience, and they'll look to you again in the future.

## **ClustrixDB: The Database that Powers Successful E-Commerce Sites**

### ***With ClustrixDB, pain turns into gain***

Case in point, e-commerce retailer nomorerack switched to ClustrixDB and was able to handle 10 to 20 times the amount of traffic during peak periods.<sup>5</sup> On top of that, the company smoothly absorbed a 600 percent increase in Cyber Monday sales year-to-year with absolutely no site performance issues.

No matter if you've already launched your e-commerce business or are planning to do so in the near future, the business benefits are considerable when it comes to deploying the only scale-out, cloud database designed for e-commerce. Rather than waiting for a problem to rear its ugly head and only deal with it then, it's better to be proactive and take the steps to avoid those kinds of dilemmas altogether.

Once deployed, ClustrixDB works to ensure your business can handle substantial traffic swings in an efficient manner. On top of that, ClustrixDB has the ability to process a massive number of transactions while concurrently running operational reports on your live data. This allows you to understand your business performance—in real time!

ClustrixDB is also self-managing, which means that your administrators won't have to devote their time to operational tasks because that management has been built into the database itself. And if that wasn't enough, migrating from MySQL to ClustrixDB is considerably easier than choosing to replatform or shard your database, as the code changes needed to do so are minimal.

When it comes to ensuring the success of your e-commerce business, you can't roll the dice or cross your fingers and hope everything works out perfectly. Instead, you have to take proactive steps to create an environment that ensures your customers are happy as often as possible. ClustrixDB's scale-out functionality and inherent fault tolerance promise that your customers will enjoy seamless digital experiences, and as a result, the sky is the limit in terms of how high your business can grow.

1 <http://www.statista.com/statistics/272391/us-retail-e-commerce-sales-forecast/>  
2 <https://blog.kissmetrics.com/wp-content/uploads/2011/04/loading-me-lrg.jpg>  
3 <http://www.forbes.com/sites/kellyclay/2013/08/19/amazon-com-goes-down-loses-66240-per-minute/>  
4 [http://venturebeat.com/2012/11/infograph\\_costofdown-me.png?w=580&h=3043](http://venturebeat.com/2012/11/infograph_costofdown-me.png?w=580&h=3043)  
5 [http://www.clustrix.com/wp-content/uploads/2013/10/nomorerack\\_casestudy\\_WEB.pdf](http://www.clustrix.com/wp-content/uploads/2013/10/nomorerack_casestudy_WEB.pdf)

# Clustrix

Clustrix provides the leading scale-out SQL database engineered for the cloud. With ClustrixDB you can build innovative business critical applications that deliver real-time analytics on live operational data with massive transactional volume. Our exceptional customer service team supports more than one trillion transactions per month across a range of industry segments including Ad Tech, e-commerce, and social analytics. Clustrix customers include AOL, engage:BDR, MedExpert, Photobox, Rakuten, Symantec, and Twoo.com. Headquartered in San Francisco, Clustrix is funded by HighBAR Partners, Sequoia Capital, U.S. Venture Partners, Don Listwin, and ATA Ventures. ClustrixDB is available as a free community edition for developers, a software download that runs on any cloud, and on the AWS marketplace.

To learn more about Clustrix, visit us at [www.clustrix.com](http://www.clustrix.com)

