CUSTOMER SUCCESS STORY

Code.org

Code.org Load Tested its site with CA BlazeMeter for over 25 Million Users at global coding event

CLIENT PROFILE
Industry: Non-profit organization
Organization: Code.org®
Employees: 78

25 MILLION
USERS WORLDWIDE JOINED IN

100,000 – 1 MILLION
CONCURRENT USERS CAN BE TESTED

Load testing for millions of students

Code.org® was launched in 2013 with a simple vision: that every student in every school, regardless of race, sex or color, would have the chance to learn computer science. This non-profit organization works tirelessly to make Computer Science available in schools everywhere, and its supporters range from the President of the United States to celebrities like Dwight Howard and Angela Bassett.

Towards the end of 2013, Code.org launched The Hour of Code – an online event offering a one-hour introduction to code during Computer Science Education Week. With tutorials in more than 30 languages, this was a huge global movement capable of reaching tens of millions of students in more than 180 countries.

Global interest skyrocketed when well-known figures like Bill Gates and even President Obama made videos endorsing the event. At the time, this non-profit organization consisted of just 20 people - and only half of these were developers.

As the event drew nearer and tens of thousands of teachers signed up their entire classrooms, it became clear that it was going to be bigger than the team ever imagined.

“We knew that we were facing a traffic spike unlike anything we’d ever seen before. At this point, we had just two weeks to go,” comments Brendan Reville, Software Engineer at Code.org.

Test, test, and test some more
Code.org had to be sure that the site could cope under the extremely high traffic loads this event was bound to bring. And it needed a solution that would allow it to find this out in less than two weeks.

> "Running these tests on CA BlazeMeter proved to be invaluable in preparing us for this huge event."
>
> **Brendan Reville**
> Software Engineer, Code.org

After evaluating its options, CA BlazeMeter was the obvious choice as it allowed the organization to test for 100,000 or even one million concurrent users from multiple geographical locations. Plus, as its self-service platform was extremely quick and easy to use, the organization didn't need to put aside time for setup or training.

Code.org started by running a series of tests on CA BlazeMeter, increasing the scale each time. When it hit a bottleneck on the first test, the team fixed the issue and then ran another test with a higher number of concurrent users. The team repeated this procedure a number of times, each time discovering new issues, until it was able to successfully run tests for around 100,000 concurrent users.

"It's crucial to be extremely well prepared for high traffic events. You only get one shot and you can't 'make it right' after the event. Never assume that you can cope with a high amount of traffic. Test all of your assumptions so you know you'll be well placed to handle all of your visitors," comments Reville.

Preparing the site for 2014, 2015 and beyond

The night before the week started, the team saw traffic starting to build up. But it really peaked at 9am EST – when schools on the American East Coast started for the day. And, as it was a global event, traffic was consistently high at all hours during the entire week.

Around 15 million people logged on to the site during the week-long event. Despite the huge amount of website traffic, Code.org enjoyed good uptime throughout the event. Thanks to CA BlazeMeter, the team knew how much it needed to scale up its infrastructure and had already provisioned the extra service necessary. It was also fully prepared to slip over to a 'read only' site if necessary.

For the rest of the year, everything went back to normal - until Code.org decided to run another 'Hour of Code' in December 2014. Aware that it was likely to get even more traffic this time, the IT team got in touch with CA Technologies once more.

The team was right to be prepared. More than 25 million users worldwide joined in – meaning Code.org engaged more people in just five days than Facebook in three years.

Once again, the event ran successfully and the team's only regret was that it didn't start load testing with CA BlazeMeter earlier this time.

"Running these tests on CA BlazeMeter proved to be invaluable in preparing us for this huge event. It was especially useful for testing the database on the backend, I don't know how we'd have simulated this in any other way. We use Amazon for all of our hosting and we learned that we needed to scale up a number of servers and increase database capacity. Running the stress tests helped us understand how much to provision each server type," comments Reville.

Due to its phenomenal success, The Hour of Code is now an annual event for Code.org – and the company plans to continue running pre-event testing with CA BlazeMeter as part of the preparations.

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