Browserless accelerates browser automation with AMD EPYC[™] CPUs

AMD EPYC processor-powered DigitalOcean cloud Droplets improve performance and reduce costs.

CUSTOMER

browserless

INDUSTRY

Web browser workload automation

CHALLENGES

Improve PDF generation speed for better scalability

SOLUTION

Switch cloud instances to AMD EPYC CPU-powered DigitalOcean Droplets

RESULTS

Faster PDF generation with 30 percent reduction in overall costs

AMD TECHNOLOGY AT A GLANCE

DigitalOcean Premium Droplets powered by AMD EPYC processors

TECHNOLOGY PARTNER



The mass automation of web browser tasks can be a challenge for organizations to do on their own. Beyond the complexities of making web automation work with high-volume browser updates, the processing overhead of doing it at scale can be considerable. This is what Browserless provides its customers – web browser automation at scale. AMD EPYC[™] processor-powered cloud Droplets from DigitalOcean, delivered exactly what Browserless needed for its powered b

users – top performance at scale. "Browserless is a platform for

browser automation workloads,"

explains Joel Griffith, CEO of Browserless. "These workloads include PDF generation, collecting data on the web, and automating certain tasks for platforms that don't have an engineering API or SDK." Generating PDFs automatically from user dashboards and emailing them to stakeholders is a key application. "It can be any business from health to shipping." This event-based reporting negates the need for manual capturing. If the frequency gets too high, it can overwhelm the platform at a crucial moment, which is where AMD EPYC processor-powered DigitalOcean cloud Droplets proved so potent.

Twice the performance, half the latency

Engineers can create automation systems using open-source software that delivers the features they need. "There are lots of good libraries out there that do PDF generation and screenshot capture generation really well," says Griffith. "You can get a proof of concept working with these, but it's all running locally. Scaling it can be really tricky."

This is where Browserless supplies its expertise. "Browserless lets you use all of these open-source APIs and libraries and scale them," says Griffith. "We take away the management resource problem. PDF generation tends to be the most resource intensive workload, because you're using both lots of CPU time, and lots of memory. It's graphical, with lots of resource requests happening and primitive drawing that takes up lots of time."

Originally Browserless had been employing dedicated resources, which were great for larger organizations. However, the company wanted to offer a less expensive option via a shared platform that didn't require user management. "We started looking into what DigitalOcean had

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Joel Griffith, CEO, Browserless

to offer," says Griffith. Browserless began to deploy DigitalOcean Droplets. "We were a few months into it when the Premium Droplets powered by AMD EPYC

CPUs became available. A user on our Slack community said the best throughput they had seen with DigitalOcean was with the EPYC CPU-powered Premium Droplets. He was using a Sysbench CPU utility for performance testing. On competitive CPUs, he was getting up to 30 events per second, versus 52 events per second on the Droplets powered by AMD CPUs. That's an amazing throughput, and latency was about half on the EPYC CPUpowered Droplets. On a competitive CPU, he was seeing from 20 to 40 milliseconds of latency, whereas on an AMD, it was around 17 milliseconds. Performance was really impressive overall."

Much faster PDF generation with AMD EPYC CPUs

Browserless wanted to see how this translated into real-world performance with PDF generation. "I did some of my own benchmarks," says Griffith. "On the AMD side, we were using a two-CPU, two-gigabyte Droplet with three stress tests. These ran for 100 total sessions. The first one is just one session at a time, the next one is five, and the third one is 10. The Droplets powered by AMD used from 10 to 70 percent of the available CPU, meaning that you can run up to 10 requests at a time. The average time to do a PDF generation was from two to four seconds."



"On the competitive Droplets, we were seeing CPU usage from 30 to over 100 percent for the same benchmark," continues Griffith. "It was using way more CPU, and the average time per PDF was three to five seconds, a lot slower. The stat that blew me away was that the competitive Droplets use more RAM, to help accommodate the browser's usage of the CPU. Memory usage ranged from 400 to 600 megabytes on the competitive Droplet, but from only 150 to 400 megabytes on the EPYC CPU-powered Droplet. The Droplet powered by AMD doesn't just

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These incredible results convinced Browserless to migrate its entire fleet of 100 multi-tenant user Droplets to the EPYC CPU-powered Premium alternatives, which proved extremely easy with the help of DigitalOcean's excellent documentation. "We just needed a one-line change in a config file," says Griffith. "We didn't do a huge announcement about the

changeover, but over the next few days, we got good email responses back from our users. We had one user reach out and ask if something was different, because their PDF throughput was noticeably faster." This user was on a plan where they pay per second for the time that

they use the service. "They had done their own benchmarking and noticed that, once we had moved to Droplets powered by AMD, they were getting their PDFs back much more quickly," says Griffith. "They were a second or two quicker, which may not sound a lot, considering

. . .

// Specify browserless for the server const driver = new webdriver.Builder() .forBrowser('chrome')

.withCapabilities(chromeCapabilities) .usingServer('https://chrome.browserless.io/webdriver') .build();

await driver.get('https://www.example.com/'); const base64png = await driver.takeScreenshot(): fs.writeFileSync('.no-git/screenshot.png'. new Buffer(base64png, 'base64')

driver.quit();

that we charge a fraction of a cent per second for this service. But when you multiply that by a thousand, or even a million sessions in a month, that adds up very quickly."

Lower costs for a small change in code

The improved performance has had benefits both for Browserless and

its users. "They end up paying less and we don't need to "The Droplet powered by AMD have as much infrastructure," says Griffith. "We typically use a two-CPU, four-gigabyte machine, which is about \$20 a month. We can switch over to one powered by AMD that's two CPUs in two gigabytes, which is \$18 a month. So the RAM is half, but because AMD CPUs can just crush through everything with less RAM, that's a

> "Once we switched over to Droplets powered by AMD, we dropped our usage bill by 30 percent," says Griffith. "The performance and savings from this shared architecture gives us a competitive advantage. We have been able to raise the API limits for all of our users, so they can run more workloads at once and get more value to their users."

10 percent saving per machine."

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Joel Griffith, CEO, Browserless

Browserless is now starting to move its dedicated users over to the EPYC CPU-powered DigitalOcean Premium Droplets as well, a fleet of 1,000 Droplets. "Around 30 percent are now on Droplets powered by AMD, about 50 users," says Griffith. "They can either save a lot, and still enjoy the same throughput and performance, or, if savings aren't their big requirement, they can get more performance for the same price. I'm glowing about it because it's such an easy change to make. Moving to DigitalOcean Premium Droplets powered by AMD is a free performance gain and a cost savings. To have better performance, a less expensive price point, and to do that with very little code is a win all around."

WANT TO LEARN HOW AMD EPYC[™] **PROCESSORS MIGHT WORK FOR YOU?**

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About Browserless

Browserless is an American web browser automation company. The company was founded in 2017 by Joel Griffith and is based in Portland, Oregon. Browserless takes care of all the dependencies, sandboxing, and management of the web browser. Customers can connect remotely and automate activities with open-source libraries, using Browserless's pre-built REST APIs, or write and run their own functions. Browserless delivers more than just a headless service. It also separates running the browser from the application code - keeping critical infrastructure always available. For more information visit browserless.io.

About DigitalOcean

DigitalOcean simplifies cloud computing so developers and businesses can spend more time building software that changes the world. With its mission-critical infrastructure and fully managed offerings, DigitalOcean helps developers, startups and small and mediumsized businesses rapidly build, deploy and scale applications to accelerate innovation and increase productivity and agility. DigitalOcean combines the power of simplicity, community, Open Source, and customer support, so customers can spend less time managing their infrastructure and more time building innovative applications that drive business growth. For more information visit <u>digitalocean.com</u>.

About AMD

For over 50 years AMD has driven innovation in high-performance computing, graphics, and visualization technologiesthe building blocks for gaming, immersive platforms, and the data center. Hundreds of millions of consumers, leading Fortune 500 businesses, and cutting-edge scientific research facilities around the world rely on AMD technology daily to improve how they live, work, and play. AMD employees around the world are focused on building great products that push the boundaries of what is possible. For more information about how AMD is enabling today and inspiring tomorrow, visit amd.com/EPYC.

All performance and cost savings claims are provided by Browserless and have not been independently verified by AMD. Performance and cost benefits are impacted by a variety of variables. Results herein are specific to Browserless and may not be typical. GD-181

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