LogDNA empowers DevOps log management with AMD EPYC™ CPUs

Faster performance, lower costs and faster delivery of new features

AMD EPYC

CUSTOMER

logdna

INDUSTRY

Log Management

CHALLENGES

Improve performance and reduce costs in rapidly growing log management platform

SOLUTION

Switch from the previous cloud service provider to AMD EPYC™ CPU-powered Equinix Metal servers

RESULTS

71 percent cheaper than Intel alternative, with 15 to 20 percent faster performance

AMD TECHNOLOGY AT A GLANCE

AMD EPYC 7401P CPUs with 24 cores
AMD EPYC 7402P CPUs with 24 cores
AMD EPYC 7502P CPUs with 32 cores

TECHNOLOGY PARTNER

EQUINIX | METAL

LogDNA provides a highly innovative platform for developers. The company's log management system enables DevOps teams to collect all their system and application logs in one place, with natural language search and real-time alerts built in. But delivering a platform with these powerful capabilities requires both massive amounts of storage and significant levels of compute power. With both of these in a constant state of growth, LogDNA is always looking for ways to improve performance and cut costs. AMD EPYC™ technology offered both in one package.

Petabytes of Log storage for thousands of customers

"We started LogDNA back in 2016," explains Lee Liu, Co-founder and CTO. "Our mission is to help developers be more productive, so that they can focus on the things that they love doing. Logs are the lifeblood for developers. They are the core atomic unit of how modern engineering teams understand what's going on with their systems. LogDNA is now deployed in data centers across the globe, serving huge hyper-growth startups and Fortune 500 companies."

"We don't even need to run as many servers because of how fast the EPYC processors are. It's very rare to find something that's both more cost-effective and has better performance."

Lee Liu, Co-founder and CTO of LogDNA

LogDNA's emphasis on developers targeting improved workflow, means it is imperative that their systems be seamlessly responsive. "We focus on the things that really drives value, like a good user experience," says Liu. "We're trying to make it as efficient and streamlined as possible." However, the sheer amount of data involved works against this drive for efficiency.

"We store petabytes of logs for our customers. The challenge with logging is not the log itself, but the storage behind the logs, and all the compute that needs to go into processing and analyzing."

The log storage, tracing, and analysis process LogDNA performs for its customers permits no break in service. "If anything causes the ingestion of new logs to stop, we immediately have a backlog," says Liu. The primary challenge for LogDNA is processing new customer logs into the database. "The storage component and the compute elements are immensely important, particularly for managing the storage. We're storing petabytes for thousands of customers. When you have immense scale like that, Elasticsearch, the software we use, requires a lot more babysitting to get the performance that you need. Driving down the cost of storing petabytes of data is one of our main focuses, and the other is performance. It's hard to get performance and something cheaper." LogDNA had been using one of the major cloud solutions for its service but weren't getting the performance they wanted, and the cost was ballooning.

"We had been spending north of half a million dollars a month with the previous cloud service provider," says Liu. "We realized that the performance was nowhere near where we needed it to be, and we were just eating up more servers at a crazy rate. We started looking around for options." This is where LogDNA began talking to Equinix Metal™. At that time, the company was called Packet, but was acquired by Equinix to become Equinix Metal.

The company originally recommended an Intel-based solution for LogDNA's hot ingest compute needs, running Elasticsearch™ within Kubernetes® containers. However, the Intel option didn't look like it would be cost effective. "It was going to cost more than what the servers from the other provider were going to cost," says Liu. But the team at Equinix was just about to bring AMD EPYC™ CPU-powered servers online as an offering and suggested LogDNA try these out to see if the performance was what was needed.

Faster performance and lower cost with AMD EPYC CPUs

"We have two workloads," says Liu. "One is for hot ingest, and one is for cold long-term storage. Hot ingest is day one logs, and then on day two we will move them to a cold server, so that we can have a slightly cheaper longevity on those. We were really happy with the numbers we saw with the AMD EPYC server. We were getting great write speeds, and hot ingest is all about write speed. It was at least 15 to 20 percent faster overall than the Intel-based alternative."

"AMD is doing some fantastic stuff…We care about two things: hardcore performance, and how many cores we can get for our money."

Lee Liu, Co-founder and CTO of LogDNA

Excellent write speed wasn't the only benefit LogDNA gained from switching to AMD EPYC CPU-powered servers. "Not only were the speeds faster, it was also costing less to use the EPYC processors," says Liu. "We don't even need to run as many servers because of how fast the EPYC processors are. It's very rare to find something that's both more cost-effective and has better performance. We made the entire transition from the previous cloud service provider to Packet [Equinix] in September of 2019. We've been on Equinix ever since, and we're very happy with the performance that we've gotten."

Faster time-to-market with new features

LogDNA had originally been looking at CPUs from the Intel Xeon Gold range. "The cost was around 71 percent more expensive for the Intel CPUs than the AMD EPYC," says Liu. This meant that LogDNA could get almost twice as many cores for the same money with EPYC. "The core count gives us good density on the servers. We can run tons of pods and containers through Kubernetes. But the performance per core was very important as well. Simply getting more cores wasn't always satisfactory for Elasticsearch."

The significantly faster overall performance plus the extra computing capacity of EPYC powered servers has enabled more than efficient, cost-effective running of LogDNA's existing service. It has also allowed the company to develop its product more quickly with new features and get it to market quickly.

"Time-to-Market has always been really important. One of the best ways to use cost-effective hardware is to not optimize your code at the beginning," says Liu. "As an engineer, when you're doing rapid prototyping or trying to get a new feature out, you don't have a lot of time to optimize your code." The solution is to release a new feature and then optimize it later when you are under less time pressure. The extra resources available from using AMD EPYC CPUs has enabled this. "Being able to do that is really powerful. You might be saving money, but you are also going to be able to be first to market with a feature or addressing customer needs more quickly. Being able to be faster to market because we can simply throw more hardware at the problem, that's a really great strategy to be able to use."

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"AMD is doing some fantastic stuff," concludes Liu. "We care about two things: hardcore performance, and how many cores we can get for our money. If those two things continue to hold true, there will be no reason why we wouldn't choose AMD again and again. Just try it out and see the performance for yourself, because we found it both faster and more cost-effective. What's not to like here?"

About LogDNA

LogDNA is a centralized log management solution that helps modern engineering teams be more productive in a DevOps-oriented world. It enables frictionless consumption and actionability of log data so developers can monitor, debug, and troubleshoot their systems with ease. LogDNA was brought to life by three-time co-founders Chris Nguyen and Lee Liu and included in the Winter 2015 batch of Y Combinator. In 2018 LogDNA partnered with tech giant, IBM, to become the sole logging provider for IBM Cloud. This past year, the company was featured on the lists of Enterprise Tech 30, Gartner's Top 25 Enterprise Software Startups to Watch, CRN 10 Hottest Cloud Startups, Fortune Best Small and Medium Workplaces, and received the IBM Cloud Embed Excellence Award. Learn more at logdna.com

About Equinix

Equinix is the world's digital infrastructure company. Digital leaders harness our trusted platform to bring together and interconnect the foundational infrastructure that powers their success. We enable our customers to access all the right places, partners and possibilities they need to accelerate advantage. With Equinix, they can scale with agility, speed the launch of digital services, deliver world-class experiences and multiply their value. For more information visit equinix.com.

About AMD

For 50 years AMD has driven innovation in high-performance computing, graphics, and visualization technologies—the 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.