

# Market Group reduces mobile advertising platform costs with AMD EPYC<sup>™</sup> CPUs

Competitive transaction performance with much lower purchasing and operational expenditure using AMD EPYC processors

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Enrico Kern, CIO

Market Group

# PARTNER

# M market

#### INDUSTRY

Supply-side programmatic advertising for mobile applications

#### CHALLENGES

Maintaining mobile advertising transaction performance while reducing data center costs

#### SOLUTION

Deploy AMD EPYC<sup>™</sup> processors in HPE ProLiant DL385 Gen10 Server and HPE ProLiant DL385 Gen10 Plus Server

#### RESULTS

40 percent greater core density, 25 percent reduction in power expenditure, 40 percent lower operational costs

#### AMD TECHNOLOGY AT A GLANCE

AMD EPYC 7702 with 64 cores

Serving context-sensitive advertising to online mobile platforms is a complex, throughput-demanding and computeintensive task. Market Group is an e-commerce and mobile advertising company with a leading role in this business area. Its supply-side platform for programmatic advertising receives up to 400,000 requests per second and sends out millions of responses in return. This places a huge load on the computation and networking abilities of the company's servers, which led Market Group to switch to AMD EPYC<sup>™</sup> processors.

"If you're developing an app, you go to a supply-side platform like ours to monetize your inventory via in-app advertising," explains David Spitzer-Dulagan, Head of DevOps at Market Group. "Every time a user opens an application on their phone that is integrated with us, a

request is being sent to our APIs. We stage a real-time auction to serve them an ad. We have a very strict response time of 300 milliseconds." This is a demanding, timesensitive computing task, and creates very specific hardware requirements where the best possible compute performance must be balanced against cost.

#### **Maximizing Request Handling**

Handling the advertising auction involved with running supply-side programmatic advertising is a complicated process. "We ask our partners in real time if they want to bid on each opportunity," explains Spitzer-Dulagan. "If they're interested, they send back a bid. It's an auction, so the highest bidder wins. All of this is happening in real time for every request. In those 300 milliseconds from when we get the request, we need to ask all the demand platforms that are responsible for this kind of request to compile the responses, see who has the highest bid, perform a lot of fraud checks, all these kinds of things. There's lots and lots of business logic involved as well."

The volume of calculations involved and the short time within which they need to be completed necessitates a top-performing server platform. "Our workloads are the

> applications services," explains Spitzer-Dulagan. "The ones that run all the business logic with filtering apply certain kinds of blacklists. There are lots of algorithms that then run on the data to analyze it. All this is very CPU heavy. We have a lot of incoming network IO in order to collect the requests. But then also outgoing. We ask all the

demand partners that we have about every request that we get. So if we get 400,000 requests per second, on average that means we will have around 4 million to one ratio outgoing requests per second."

Market Group had been running a lot of its platform in the public cloud but was moving this over to on-premises bare metal servers. The aim was to reduce operational costs for its most computeintensive workloads, such as its supplyside programmatic advertising platform. Although the company's on-premises data centers had originally used Intel-based servers, when AMD EPYC processors arrived on the market, these looked like they could offer equal or better performance for a much lower price.



# **Maintaining Performance, Increasing Density**

Market Group started running its own data centers in 2016, beginning with Berlin and Amsterdam, then adding Washington and New York. It was primarily in these US-based data centers that Market Group initially chose to try AMD EPYC technology. This began with the 1st Generation AMD EPYC processor, installed in HPE servers to keep as much platform consistency as possible.

"We had a major requirement for our ad-tech product to have a high core count with a good performance," explains Enrico Kern, Chief Information Officer at Market Group. "We started with 50 servers of the first EPYC "Our most demandina generation with 32 cores because it was one of the workload is completely highest core-count systems that you could get, so based on EPYC now" we could fit as many cores into our rack space as David Spitzer-Dulagan, possible. Intel didn't have a product that would fit *Head of DevOps at* 

in our budget. As soon as EPYC came out, every new

purchase was was a machine with EPYC. We use

HPE solely for all of the servers that we own."

The number of cores per CPU and single-core performance were the key factors for Market Group. "For us, it's really the most bang for the buck," adds Kern. "Power consumption is very important too. You need to pay more for electricity with each additional server, so more cores but higher density reduces power expenditure. On top of that, if you have fewer machines, you need less networking gear."

After the initial deployment of 1st Generation AMD EPYC processors, Market Group moved over to the 2nd Generation. They now have 120 ProLiant DL385 AMD EPYC based Servers with the highest core counts available on each using 64-core EPYC 7702 processors. "Our most demanding workload is completely based on EPYC now," says Spitzer-Dulagan. Moving their workloads from the legacy processorbased servers and upgrading to AMD EPYC was easy. Market Group had no problems. "It's basically click and move," says Kern.

## Significant Cost Reductions with AMD EPYC

The benefits from using AMD EPYC processors have been abundantly clear. "We saved more than 40 percent in density and more than 25 percent in power compared to Intel for the same concurrent transaction rate," adds Kern. This is savings on top of a much less expensive original purchase price. Performance was equal or better, utilizing the 2nd Generation AMD EPYC CPUs with Simultaneous Multithreading turned on at 100 percent load for maximum efficiency. "We require much fewer resources than we would need with the Intel alternative."

Kern adds: "We were able to reduce our costs by 40 percent compared to

running our workload on Intel CPUs in the public cloud. We want to be as cost effective as possible. We work in an auction model, and you only win the auction if you have the best price for the bid. Lowering our operational expenditure allows us to win more bids for our clients." Security was an important consideration too. "The enhanced hardware-level security of AMD EPYC can provide protection from some threats without the need for extra mitigation."

These great benefits mean that Market Group is planning to roll out AMD EPYC processors across its worldwide server portfolio, with its private cloud next on the list for upgrade. "We have around 400 bare metal servers in our data centers. We plan to replace 60 of these with EPYCs this year," says Kern. "We will get rid of our Intel CPUs. They don't have anything to compete with AMD EPYC right now. It's the best choice when it comes to your return on investment for your own infrastructure, when it comes to having a future-proof CPU architecture, and of course the outstanding performance compared to Intel. Cost wise, performance wise, [EPYC] it's the best you can get."

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Market Group

#### **About Market Group**

Market Group has proven abilities in online and offline commerce leading a global network of brands that combine innovative e-Commerce platforms with unique traffic and advertising technologies. Market Group's mission is to enable brands and businesses to easily grow and compete in today's rapidly growing e-Commerce market. The company provides an end-to-end solution custom designed to each business, giving it the relevant tools to grow and reach new arenas. Market Group matches the consumer's desired products to the merchant, providing sellers with an unparalleled set of technologies and services that will ensure their success. Its range includes Keros, Stuccomedia, and Glispa. For more information, visit market-group.com.

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