Ateme greens video compression and delivery with AMD EPYC™ CPUs

Lower power consumption and cutting-edge performance using Dell PowerEdge servers powered by AMD EPYC processors.

AMD EPYC

CUSTOMER

ATEME
Captivate your audience

INDUSTRY

Broadcast and video streaming technology

CHALLENGES

Deliver next-generation immersive video streaming while reducing carbon footprint

SOLUTION

Deploy Dell PowerEdge servers powered by AMD EPYC™ processors

RESULTS

Approximately 50 percent lower power consumption and higher performance with lower costs

AMD TECHNOLOGY AT A GLANCE

AMD EPYC™ 7502P with 32 cores
AMD EPYC™ 7702P with 64 cores

TECHNOLOGY PARTNER

DELL Technologies

Video streaming has grown exponentially over the last few years, and one of the companies at the forefront of this business is Ateme. Over its 30-year lifespan, Ateme has pushed the boundaries of streaming capabilities and efficiency. The key to its success has been ensuring the best possible performance for its video encoding software by employing the fastest, most cost-efficient server platforms. When AMD EPYC™ processor-powered Dell PowerEdge servers were launched in 2019, they delivered unprecedented density and reduced power consumption, enabling next generation capabilities – and greener video streaming, too.

Unlocking new levels of encoding performance

"We focused on video both for broadcast and broadband early on," says Thomas Burnichon, VP of Innovation Strategy at Ateme. "Our clients are now cable operators, telecom operators, broadcasters, satellite operators, and big TV companies. We take a low-latency contribution video stream from the stadium to the main offices and re-encode at a lower bitrate for distribution to the final user. Every step of the way we work to ensure that videos are compressed as much as possible to reduce delivery costs, but also in a way that preserves video quality."

"To achieve that, we develop our own standard video codec implementations," continues Burnichon. "We don't gather up libraries and build a product from those. We are experts in codecs. In 2020 we also purchased Anevia, another French company focusing on content delivery networks (CDNs). Now we can provide a complete solution from video processing to end-user delivery."

"We design software that works on x86 servers," says Francois Xavier Parisot, Product Owner–Hardware Solutions at Ateme. "We can supply either just our software, with the customer providing their own hardware, or we can deliver servers configured with our software." When Ateme was preparing a solution involving both hardware and software for a premium UK customer at the end of 2019, Dell PowerEdge servers powered by 2nd Gen AMD EPYC processors offered potential both for better performance for the money and groundbreaking new features.

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Francois Xavier Parisot, Product Owner–Hardware Solutions at Ateme.

To evaluate AMD EPYC processor performance, Ateme didn't rely on standard tests. "We benched our specific use case," says Burnichon. "We needed to test our own real-time 24/24 transcoding scenarios because they are very specific, and we needed to know exactly how the computer would behave. We were all impressed by the 2nd Gen AMD EPYC processor-powered Dell PowerEdge servers. The density we reached with them was something we never saw before. We tested across the board, including traditional SD and HD video live transcoding and file transcoding. The EPYC CPUs shone on both these, which is the bulk of the market, but they also shone on UHD transcoding. We use that on marquee sports events to do 4K and HDR live encoding to deliver the world's best content to audiences worldwide."

Ateme was particularly interested in how Dell PowerEdge servers powered by AMD EPYC processors would perform when ingesting SMPTE 2110 digital video streaming over IP for the UK customer. The results were impressive. "It wasn't just doing the same thing at a lower footprint and a lower cost," says Burnichon. "It was also doing new, exciting things for a big name and an industry first technologically."

50 percent saving in energy consumption

"The 2nd Gen AMD EPYC processor reduced costs while improving performance," says Parisot. "But the lower power budget was the most significant factor because we are working on our carbon footprint as well as that of our end customers. There was approximately a 50 percent saving in energy consumption for the same performance, which is huge." These excellent results led to a rapid rollout with the UK customer. "We started customer demonstrations only two months after market availability of the Dell PowerEdge R6515 servers with AMD 2nd Gen EPYC processors, and we delivered the production systems just two months after that, using the high-performance AMD EPYC 7702P with 64 physical cores. Shortly after that we delivered solutions with AMD EPYC 7502P CPUs with 32 physical cores to other customers."

The majority of Ateme's own preconfigured server delivery is now Dell PowerEdge servers powered by AMD EPYC processors. "We switched from zero to 80 percent within eight months," says Parisot. "For some orders we also use Dell OEM configuration services, including integration of our own or third-party PCIe boards, plus software installation and pre-configuration." This trend of migrating to AMD has replicated with Ateme's customers who supply their own hardware: "We see an uptake of AMD at our customer sites, too," says Burnichon.

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Thomas Burnichon, VP of Innovation Strategy at Ateme

The reduced power consumption of AMD EPYC processors for Ateme is helping the company pursue the objectives of the Greening of Streaming organization, which it helped to found. "Video consumption is power hungry," says Burnichon. "It has a toll on the environment. At the same time people want more and more of it. We are taking that extremely seriously and are committed to reducing our own direct carbon emissions," adds Burnichon. "Our own software needs to be as efficient as possible, and we need to use platforms that are more efficient. For that, AMD over the last few years was the biggest contributing factor."

"Dell PowerEdge servers powered by 2nd Gen AMD EPYC CPUs made a mark because they started a whole new use case. AMD EPYC CPUs have really changed the game."

Thomas Burnichon, VP of Innovation Strategy at Ateme

Despite previously using a different platform, Ateme also found moving its workloads over to Dell PowerEdge servers powered by AMD EPYC processors to be a smooth process. "The optimization did not represent a crazy amount of work compared to moving to a new codec generation," says Burnichon. "Our software immediately ran well on 32 cores," adds Parisot. "With the 64-core CPU it was the first time we had so many cores within one processor and our task scheduler was not optimized enough so we had to rewrite it to gain the full benefit."

Delivering new video streaming capabilities

AMD EPYC processor-powered Dell PowerEdge servers are helping Ateme to deliver groundbreaking new features as well as environmental benefit and reduced costs. "We are able to reach new, more immersive use cases such as UHD," says Burnichon. "You also have high dynamic range and next-generation audio. All that is better on more powerful machines. Doing things like dynamic metadata for HDR, Dolby Vision or HDR10+ requires additional processing from Ateme and that's something we can achieve using high-end Dell PowerEdge machines powered by AMD processors."

"With AMD EPYC processors, we can spend more cycles refining the compression, which means lower bit rates and delivery footprints," says Burnichon. "We can look for more redundancy and greater encoding efficiency to reduce the bit rate to something more palatable to most IP connections. That also means better-looking, more immersive images for the end user, which helps grow audiences for premium live events but also reduces churn. Every newcomer on the market is proposing things like UHD and HDR, so the traditional customers need to get that in their portfolio as a competitive move to maintain viewership."

"Dell PowerEdge servers powered by AMD EPYC processors take density to a new level," says Burnichon. "But they also provide performance, lower power consumption and price," adds Parisot. "EPYC delivers better performance per watt at a good price."

"The AMD EPYC CPU is versatile," concludes Burnichon. "You can use it for a dense application but also for exciting new use cases like UHD. It's both less expensive and greener. Our customers have higher compression efficiency which lowers the data rate, reducing the delivery cost and environmental impact in the network and not just the servers themselves. The viewer also gets a better experience because the compression is better. Dell PowerEdge servers powered by 2nd Gen AMD EPYC CPUs made a mark because they started a whole new use case. Now that 3rd Gen AMD EPYC 'Milan' processors have become available we have been introducing them rapidly into our portfolio as well. AMD EPYC CPUs have really changed the game."

About Ateme

Ateme enables thousands of the world's leading content owners, broadcasters and service providers to captivate their audiences with a superior quality of experience through multi-codec encoding, any-format origin/packaging, scalable cloud DVR, audience-aware CDN, and revenue-generating dynamic ad insertion solutions. For more information visit ateme.com.

About Dell Technologies

Dell Technologies (NYSE:DELL) helps organizations and individuals build their digital future and transform how they work, live, and play. The company provides customers with the industry's broadest and most innovative technology and services portfolio for the data era.

About AMD

For more than 50 years AMD has driven innovation in high-performance computing, graphics, and visualization technologies. Billions of people, leading Fortune 500 businesses, and cutting-edge scientific research institutions around the world rely on AMD technology daily to improve how they live, work and play. AMD employees are focused on building leadership high-performance and adaptive products that push the boundaries of what is possible. For more information about how AMD is enabling today and inspiring tomorrow, visit the AMD (NASDAQ: AMD) website, blog, LinkedIn, and Twitter pages.

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