



## Bardel Entertainment streamlines TV animation with AMD EPYC™ CPUs

Rendering: Faster, more dependable results using AMD EPYC processors



### CUSTOMER



### INDUSTRY

Media and Entertainment

### CHALLENGES

Control budget by speeding up rendering workflow for more creative production

### SOLUTION

Deploy AMD EPYC™ 7502P CPU-powered servers

### RESULTS

Halving of render times and dependable estimations of time to results

### AMD TECHNOLOGY AT A GLANCE

AMD EPYC 7502P

### TECHNOLOGY PARTNERS



**Animation has come a long way since the early days of graphic artists drawing frames on layers of transparent acetate. Nowadays, even 2D animation takes huge amounts of computing power.**

Bardel Entertainment has been at the forefront of this business for over 30 years working with many of the big names in the film and TV industry. To create its shows, the computing power required is huge.

"We can do everything from design and storyboard right through to postproduction, and we work on some really popular series," explains Eric Legaspi, VP of Technology at Bardel Entertainment. "We worked on Rick and Morty, Teen Titans Go! and most recently we've been working on a Netflix series called The Dragon Prince that won the 2020 Daytime Emmy® Award for Outstanding Children's Animated Series." It was during the postproduction of The Dragon Prince that Legaspi realized Bardel's existing Intel-based render farm wasn't delivering what they needed, and that AMD EPYC processors could provide a much more dependable, higher performing, and cost-effective alternative.

#### Tackling long render times

"I was having to use dedicated render nodes for each one of our show productions," says Legaspi. "With the Intel render nodes, we always seemed to need more and more of them. There was never a real way for us to gauge how many we needed. We were always going over on our render budgets, so I was looking at a way to try and bring that under control." The Dragon Prince proved to be the turning point.

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*Eric Legaspi, VP of Technology at Bardel Entertainment*

"The Dragon Prince was very painful for everyone involved from a rendering perspective," says Legaspi. "We really had to go over our render budget just to get it out the door. We had cases where some renders were taking up to six hours, and so an artist was sitting there and waiting for their render. I had to find something that was going to change that."

This was having a ripple effect not just on rendering costs but also in the production budget for the artists working on The Dragon Prince. "They would come in first thing in the morning and start working. Then they sent the renders to the farm, and they might not get their render back until the evening. Instead of what would have been an eight-hour day, it became a 12- to 16-hour day. We were paying artists overtime to sit around because our render farm wasn't able to deliver when they needed it."

Legaspi was considering GPU rendering, but this didn't look like the ideal solution. "We would have had to adjust our workflow, and some artists are more creative than technical, so their productivity would have dropped. Our preference was to keep the workflow consistent." Using a CPU-based render farm would mean having the same workflow for the animation artists, so Legaspi reconnected with AMPD Technologies, who had begun promoting the new AMD processors as part of their hosted AMPD Render Solution. AMPD was able to provide the new AMD processors and enabled Bardel to conduct a series of tests.

## Faster render pipelines with AMD EPYC processors

Bardel started running tests on AMD EPYC processor-based nodes inside AMPD's DC1 Data Centre. "The minute that we tested the AMD server compared to the Intel ones we were running it was like night and day. The AMD processors are so fast and at the price point where it makes more sense to go with that versus continuing to work with the GPU render farms." Bardel uses a wide variety of software in its post production render pipeline, including Autodesk® Arnold, RenderMan®, 3Delight, and V-Ray®, so tests were performed with these applications against Intel Xeon Gold 6252 CPUs.

"The latest Intel processors compete with AMD's, but at a cost," says Legaspi. "It comes back to budget. I need to be able to push as much as I can out of a server while trying to stay within budget, and that's where the AMD CPUs have really come through." Bardel and AMPD chose single-socket 2.5GHz AMD EPYC 7502P processors with 32 cores, installed in Supermicro AS-2014TP-HTR chassis. "We didn't see the benefit of going for really high core counts. The EPYC 7502P seemed to be the sweet spot."

The benefits over Bardel's former render nodes based on dual Intel Xeon E5-2680 processors were clear right away. "Compared to our previous generation of Intel render nodes, the EPYCs cut our render times in half," says Legaspi. It was also important for the software to run properly. "We haven't run into any compatibility issues with AMD EPYC. The other thing was that we were seeing consistent results, so we knew that with a certain number of AMD servers, we were confident we would be able to deliver the assets to the artists when they needed them."

## Render estimates you can rely on

This reliable and speedy delivery of rendering output enabled the streamlining of the creative workflow. "We were able to say, with the complexity of the scene, it's going to take approximately this amount of time to render," says Legaspi. "That allowed the artists to plan when to send renders to the farm. The AMD EPYC nodes had 1.5 to 2 times the ability to do the work. Before, we were looking at three hours a scene in some cases. Once we threw AMD CPUs at them,

it was down to about an hour and a half. At the end of the working day, the artists make sure everything is queued up and then by the morning they have real confidence that everything has gone through. With V-Ray it was like night and day. We save four minutes per scene and can complete hundreds of scenes per day." The savings can be days and even weeks of rendering time.

This has been a sea change compared to Bardel's previous render farm, providing a major benefit for creativity. "With the Intel render nodes, the team would have to stay up and babysit the farm," says Legaspi. "It's really important for the artists working on lighting to get

those renders back as soon as possible. By cutting the render times in half, it allows confidence that if they must redo a scene because some lighting is off, they can ship it back to the farm and still meet the deadline. We get consistent results every time, so we're confident that we're going to get these shows done on time. From a cost to performance perspective, we're getting a lot more out of the AMD systems than we were out of the Intel servers."

Legaspi has been so impressed with the AMD EPYC CPU render nodes that he is now considering AMD Ryzen™

Threadripper™ processors for Bardel's workstations.

"I can get away with a single AMD versus two Intels for our artists with more complex needs, particularly FX and lighting. I was looking at having to get powerful dual-processor Intels. I'm now able to look at a single AMD to do the same thing. It depends on the software, but we get one and a half times the amount of work completed with AMD versus Intel. To anyone considering AMD processors, I say get their hands on a test server, test it out for themselves. I can guarantee they'll be pleasantly surprised by the results."

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*Eric Legaspi, VP of Technology at Bardel Entertainment*

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## About Bardel Entertainment Inc.

The Emmy® award-winning studio, Bardel Entertainment Inc., has been a leading animation studio in North America for over 30 years due to its stellar reputation built on three core values: quality, creativity and innovation. Bardel has two state-of-the-art studios, one in Vancouver and one in Kelowna, Canada. Currently, Bardel is the only full-service animation studio concurrently providing animation services in CG and 2D animation television and features for a diverse slate of U.S. blue-chip partners: Netflix, Wizards of the Coast, Warner Bros., Cartoon Network-Adult Swim, Nickelodeon, HBO Max and Disney, as well as an outstanding group of content creators. In 2015, Bardel was acquired by Italy-based [Rainbow Group](#), one of the largest animation producers and licensors in the world with subsidiaries in Moscow, Hong Kong and Singapore. [bardel.ca](#).

## About AMPD Technologies

AMPD Technologies is a Vancouver BC-based company specializing in providing bespoke, high-performance compute and cloud solutions in the data centre and in the studio. AMPD infrastructure is designed to support the intense requirements of the latest multiplayer video games, cutting edge digital media production, including recent advances in virtual production, as well as the requirements of next-gen enterprises pushing the boundaries of big data analysis and visualization. The company offers attractive, op-ex business terms, while maintaining the performance of dedicated, sector-specific high-performance computing environments. Visit [ampd.tech](#) for more.

## 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](#).

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