(intel)
Look Inside.™

Render Rocket Boosts Performance for Moviemaking in the Cloud

The Intel® Xeon® processor E5 family helps speed processing by an average 35 percent for animation rendering

By offering one of the first cloud-based animation rendering services, Render Rocket has been helping moviemakers deliver stunning computer-generated animation while meeting tight deadlines for more than a decade. To keep up with industry demands, Render Rocket refreshed its infrastructure with new servers based on the Intel® Xeon® processor E5 family. The refresh enables moviemakers to complete work more quickly while allowing Render Rocket to serve more customers in the same data center space.

Challenges

- **Improve rendering performance.** Speed up rendering to help clients process more complex animation while adhering to demanding schedules.
- **Add capacity.** Provide processing headroom to support more work and more customers.
- **Maintain reliability.** Ensure rock-solid reliability in an industry that has no room for production delays.
- **Control costs.** Deliver improved performance and greater capacity without increasing the operating costs for the infrastructure.

Solution

- **Servers based on the Intel Xeon processor E5 family.** Render Rocket refreshed its system with a mix of servers equipped with the Intel Xeon processor E5 family and Intel® Ethernet Gigabit Server Adapters. A planned upgrade will include the Intel Xeon processor E5 v2 family.

Technology Results

- **Boosted performance by 35 percent.** The new processors deliver an average 35 percent increase in performance, enabling clients to process more complex animation and see results faster than before.
- **Solid reliability.** Render Rocket capitalizes on Intel® technologies built into processors to deliver consistent, reliable performance and avoid downtime.

Business Value

- **Prepared for business expansion.** Added processing capacity enables Render Rocket to expand the business by taking on more customers and more complex work.
- **Increased competitiveness.** Better performance helps Render Rocket enhance its competitive position.
- **Avoided costs.** Render Rocket is increasing the amount of work it can do in its existing data center space, within the same power and cooling envelope.

"The Intel® Xeon® processor E5 family delivers more value for our customers and for us. Clients can get their results faster, so they have more time for creative experimentation and design. And we have additional computing cycles available to do more work and expand the business."

– Tracey Tindall,
Vice President of
Business Development,
Render Rocket

After animators create scenes with wireframe images on their workstations, the truly compute-intensive part of the animation process begins—rendering those wireframes into fully realized objects that realistically reflect changing light. "A typical three-second scene generates 90 images that could each take an hour to render on a PC," says Ruben Perez, CEO of Render Rocket. "That adds up to several days out of tight production schedules. By using Render Rocket, animators can run the job on 90 servers in the cloud and complete it in about an hour."

Render Rocket regularly refreshes the infrastructure used for its render farm to keep up with demand for the fastest processing. "With the amazing amount of visual effects used today, this is an industry that is always looking for a faster, better way," says Tracey Tindall, vice president of business development at Render Rocket. "We need to provide outstanding performance to support complex, compute-intensive animation workloads and deliver results rapidly."

# Intel® Xeon® processors help speed moviemaking magic

With demand for cloud-based rendering on the rise, Render Rocket looks for processing architectures that can help expand capacity while keeping costs in check. "We have a limited amount of space and power for the render farm," says Perez. "Our goal is to maximize density so we can support more customers without increasing power, cooling, or real estate."

In selecting hardware, reliability is also critical. "With tight budgets and strict deadlines, our clients can't afford to wait around because we've had some problem with our technology," says Tindall. "We need to be consistent and deliver reliable service each and every time."

Refreshing Processors for Faster Rendering

Since its founding in 2004, Render Rocket has run its core software on servers powered by Intel Xeon processors. To keep up with industry demands and stay ahead of the competition, Render Rocket upgrades with the newest Intel Xeon processors every three years, working closely with Intel to plan refreshes. "Intel keeps us well informed about their processor road map and the latest capabilities that will be coming to market," says Perez.

Render Rocket recently deployed new servers with the Intel Xeon processor E5 family and Intel Ethernet Gigabit Server Adapters. "The new eight-core processors give us the raw computing power we need to run our rendering applications at high speed," says Perez. "The Intel Xeon processor E5 family also delivers the memory bandwidth required for processing and storing complex images."
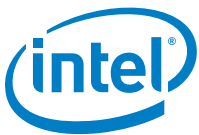
The servers run Autodesk Maya* and 3ds Max*, CINEMA 4D*, KeyShot 3D Rendering and Animation* software, and a range of other rendering applications used by clients on Microsoft Windows Server 2008* and Windows Server 2012* operating systems. The environment is virtualized with VMware* and Xen* software. "We've had compatibility issues with other processors across the different renderers we use," says Perez. "Intel® processors give us the best compatibility across a full range of software."

The servers also host Render Rocket's Mission Control* platform, which enables clients to control their jobs in the cloud. Clients also use the Render Rocket Launch Pad* desktop plug-in, which provides customers with easy upload capability to Mission Control within the animation application of their choice.

Increasing Performance by 35 Percent

The new processors helped Render Rocket boost performance by an average 35 percent compared with servers based on previous-generation processors, according to Render Rocket, speeding turnaround times for rendering jobs. "The Intel Xeon processor E5 family delivers more value for our customers and for us," says Tindall. "Clients can get their results faster, so they have more time for creative experimentation and design. And we have additional computing cycles available to do more work and expand the business."

Delivering on Reliability Requirements

Render Rocket counts on error-correction features such as Intel® QuickPath Interconnect and Intel® Scalable Memory Interconnect in the Intel Xeon processor E5 family to help ensure reliable results in a high-stakes industry. "Each movie has many specialized vendors working to produce the finished product. A break in workflow affects everyone else down the line," says Perez. "We experimented with other companies' processors, but we found they didn't have the reliability we've come to expect from Intel."

Spotlight on Render Rocket

Since 2004, Render Rocket has combined its animation experience with state-of-the-art technology to provide the most advanced cloud rendering system available. Offering a smart interface that integrates a customer's animation files with the Render Rocket remote rendering pipeline, Render Rocket can extend rendering power to studios and animators when they need it. With clients like Sony and Picture Mill, and work on films such as *Iron Man* and *Spider-Man 3*, the Render Rocket team has a stellar track record.

Avoiding New Data Center Costs

The new processors also enable Render Rocket to control costs by avoiding the need for additional data center space, power, and cooling. "Thanks to the energy efficiency of the Intel Xeon processor E5 family, we boosted throughput in our existing data center space within the same power and cooling envelope as before," says Perez. "We're getting more out of the facility we have, which helps us stay price-competitive with other providers."

Looking Ahead to the Next Refresh

The Render Rocket team is already planning the next refresh and preparing to test the Intel Xeon processor E5 v2 family in the rendering environment. "Benchmarking from Intel suggests we will see a substantial performance benefit," says Perez. "That added performance will enable us to continue meeting our customers' needs and enhance our competitive position even as the demands of 3D animation and special effects make rendering more demanding. Our customers can rely on us to simplify a complex process so they can focus on the creative work."

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