DESIGNWORKS EXPANDS ARTISTIC CREATIVITY AND BOOSTS PRODUCTIVITY.

Integrating NVIDIA DesignWorks™ into DAZ Studio gives both casual hobbyists and pros the interactive photorealism to create stunning art faster than ever before.

Stefan Morrell

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Adding GPU-based NVIDIA® Iray® rendering and MDL materials to DAZ Studio frees artists to focus on creating without time-consuming CPU-based test renders.

AT A GLANCE

CUSTOMER PROFILE

Company: DAZ 3D

Industry: 3D applications and content

Location: Salt Lake City, Utah

Size: 40 employees

SUMMARY

> Leading marketer of 3D content and applications

> Seeking to shorten project life cycles and boost quality

> Integrated NVIDIA Iray and MDL into their flagship application

> Users benefiting from increased quality and creative freedom

DAZ 3D is a leading marketer of 3D art content and software. They partner with nearly 1,200 modelers and riggers to develop and distribute 3D content such as characters, props, and environments to hundreds of thousands of end users ranging from hobbyists to professional designers and animators. DAZ Studio is their powerful, free 3D creation application that delivers both simplicity for hobbyist users and deep, rich functionality for professional users to make creating 3D art easier than ever before.

CHALLENGE

"Most DAZ Studio users are not 3D modelers," explained Vincent Brisebois, Vice President of Software Product Development at DAZ 3D. "DAZ Studio allows them to create and render complete scenes by purchasing the content they want, assembling and adjusting that content inside DAZ Studio, and rendering it using preset options included with the content; however, our sophisticated users need the ability to make detailed and nuanced adjustments. We need to cater to both audiences at once."

Early versions of DAZ Studio relied on OpenGL previews with a CPU-based rendering engine that created the final art. The disparity between the OpenGL previews and final output forced content creators and artists to make iterative adjustments using the preview and then perform spot or full-frame renders to check their work. This was a time-consuming process requiring anywhere from a few minutes to several hours depending on scene complexity and available computing power. DAZ Studio also included proprietary material and render technologies that limited compatibility between DAZ Studio and other 3D applications. DAZ 3D needed a universal GPU-based rendering engine and material language to shorten project lifecycles and increase compatibility with other applications.

Neil Ruddiforth

5 REASONS FOR IRAY

1 GPU rendering is faster and more accurate than CPU rendering.

2 Iray and MDL are becoming the industry standard.

3 They can now cater to casual and sophisticated users alike.

4 Robust SDKs simplify and speed ongoing development.

5 Increased profitability from sales of Iray-based content.

SOLUTION

"I used Mental Ray extensively and started using the Iray GPU-based rendering included with DesignWorks while working with 3DS Max at Autodesk," Brisebois continued. "Then I heard about the Material Definition Language (MDL) in DesignWorks and everything clicked. The ability of Iray to provide photoreal, interactive, and real-time hardware rendering directly in the application viewport is huge. The ability to share materials between MDL-compliant applications and have those materials maintain their appearance across all applications within a workflow is also tremendously liberating. Our chief concern was how new Iray was at the time... but when we saw some key applications adding Iray support, that was it. Why pioneer when we can leverage an emerging standard that offers superb quality and performance?"

Initial development to add Iray and MDL, part of the NVIDIA DesignWorks suite of tools for professional developers, took only four weeks thanks to the robust SDKs. This initial development was the jumping-off point for the full implementation, which took about six months as Iray and MDL evolved. Part of this effort included building and testing an automated process for converting hundreds of thousands of items created in legacy systems to use proper MDL values for accurate rendering.

Some users accustomed to fast OpenGL previews balked at first because of the radically different workflow. For example, CPU-based rendering has discrete starting and stopping points, while GPU rendering offers both rapid convergence (usability) and progressive image refinement with no set stopping point. This initial hesitation faded once they realized that Iray is creating actual renders and not simply previews. Further, GPU rendering shaves hours off scene creation time thanks to simpler— and more accurate—lighting and composition. As Brisebois put it, "The engagement level is very different. Users see results almost instantly as they work, making the entire process more enjoyable because they can

spend time making artistic choices instead of wrestling with the software."

MDL makes it easy for users of all levels to access and use DAZ Studio through a hierarchical interface that exposes increasing levels of detail. Casual users can make fast, simple adjustments such as selecting a material or lighting preset. Advanced users can drill down into the material settings to make fine adjustments, or even create their own materials from scratch using a visual system of procedural blocks.

Ongoing software development plus the need to test and vet thousands of new pieces of content led DAZ 3D to begin evaluating the NVIDIA® Quadro® Visual Computing Appliance (VCA). This appliance contains eight high-end Quadro GPUs that provide additional Iray and MDL rendering power for massive scenes on a near-linear basis. For example, assigning three GPUs to a scene will roughly triple rendering speed. Users can connect to the VCA using any desktop, laptop, or mobile device and receive rendered pixels directly within the application viewport. DAZ 3D employees use their local workstations to create scenes and then connect to the VCA to greatly accelerate adjustments and the final render.

RESULTS

"Our users couldn't be happier," continued Brisebois. "On the user side, our support team is getting emails telling us that they love Iray and MDL support in DAZ Studio so much that they've stopped using competing products. Our content creators had been wanting to move to hardware-based rendering anyway, and Iray gives them that. The MDL shader tree is frosting on the cake because it opened up a whole new set of tools for them to create more and better-looking content that any end user can run with. The interoperability of Iray and MDL is also opening new doors for our content creators by giving them marketable tech and creative skills beyond DAZ Studio."

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> VP of Software
> Product Development
> DAZ 3D

More than 400 pieces of Iray-specific content were added to the DAZ 3D store between July and October of 2015 and are generating significantly higher revenue than their non-Iray counterparts.

DAZ 3D will continue investing in NVIDIA Iray and MDL inside DAZ Studio. They are so impressed with the speed, power, and remote access offered by the NVIDIA Quadro VCA, that they are also seeking to make a VCA cluster available to content creators. This will allow them to take full advantage of high-performance GPU rendering regardless of their local hardware and location.

To learn more about NVIDIA DesignWorks and Iray, visit:
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