Changing Your Game

AMD FirePro™ professional graphics now enables powerful new native stereoscopic workflows inside Autodesk® 3ds Max® and ultra-complex dynamics simulations using the Bullet physics plugin in Autodesk® Maya®.

Available as part of its Subscription program, Autodesk's annual Extension releases provide users of 3ds Max and Maya with early access to advanced new technologies. This year, two of the most game-changing of those technologies were created in partnership with AMD.

Faster, more controllable Maya physics simulations

First introduced in 2011, the MayaBullet plugin is a fast, open-source physics solver. Built from the Bullet library created by AMD Principal Physics Engineer Erwin Coumans and GPU-accelerated via OpenCL™, the plugin is capable of creating highly realistic dynamic and kinematic simulations.

Artists working in pre-visualization or visual effects benefit from powerful, built-in dynamics tools, while game developers can use the Bullet kernel to create physics solutions that scale easily across multiple platforms: from PCs to next-generation consoles.

The updates to the Bullet plugin in the Maya 2014 Extension enable users to create rigid-body systems an entire order of magnitude larger than before. Support for Maya forces and improved support for constraints provide artists with more sophisticated control over simulations than ever.

Intuitive, native stereoscopic workflow inside 3ds Max

Maya also comes with a powerful built-in stereoscopic toolset – something that users of 3ds Max can now benefit from. The 3ds Max 2014 Extension enables artists to create and visualize stereoscopic content using the same fast, intuitive, end-to-end workflow.

The release adds a new Stereo button to 3ds Max's set of system object types. Artists can view stereoscopic content directly within the viewport in a range of display modes, including anaglyph, side-by-side, and active stereo – the latter certified only for users of AMD professional GPUs.

VFX facilities and game developers that use 3ds Max as a content-creation tool can now tackle complex stereo projects without having to transfer data between applications.

With AMD's advanced Graphics Core Next (GCN) GPU architecture, full support for 4K monitors with DisplayPort 1.2, industry-leading memory bandwidth and support for PCI Express 3.0 as well as OpenCL 1.2, the AMD FirePro W-series of professional graphics cards combines leading-edge technology to make these game-changing workflows possible, enabling artists to create more complex, compelling content faster than ever before.

Industry:

Media & Entertainment

Application:

3ds Max and Maya Autodesk

Challenges:

- Increasingly complex production workflows with 4K and Stereo
- High demands for visual quality and effects
- Need for cross-platform monetization applies additional pressure

Solution:

- AMD FirePro™ professional graphics is fully optimized, thoroughly tested and officially certified for Autodesk 3ds Max and Maya giving you the performance you need to change your game.

Value Propositions:

- Optimized and certified for Autodesk applications 3ds Max and Maya 2014
- Unique features with Active 3D for 3ds Max and Bullet physics plugin for Maya
- Ready for 4K / UHD monitors with DisplayPort 1.2
- Accelerate your Workflow with AMD Eyefinity* Multi-Display Technology

The AMD FirePro Advantage:

- Three-year limited warranty and extended availability – Compared to consumer graphics, AMD FirePro cards have an extended lifecycle
- Highest level of customer support – Customers have the ability to contact the AMD technical team directly
- Energy efficiency – AMD FirePro graphics cards are based on a highly efficient GPU design and feature power saving technologies like AMD PowerTune and AMD ZeroCore technologies
- AMD Eyefinity technology – A single card can power up to 3, 4 and even 6 displays with up to 4K resolution with each output (4096 x 2180 pixels using DisplayPort 1.2)*

AUTODESK MAYA

AMD FirePro professional graphics cards for Maya users

Generate complex real-world simulations – without specialized physics hardware

Today's VFX productions require ever more complex physics simulations. With movies now being shot at resolutions of 4K and more, audiences expect to see the tiniest details of environmental effects. The updated MayaBullet plugin makes it possible to create rigid-body systems an order of magnitude more complex than before, simulating tens of thousands of objects in real time. With AMD's Graphics Core Next (GCN) GPU architecture, the AMD FirePro W-series handle both computation and on-screen rendering simultaneously. And the support for PCI Express 3.0 means that the graphics card can handle twice the bandwidth (32GB/s) compared to alternative professional graphics solutions.

Design within the limits of your imagination, not the limits of the hardware

In pre-visualization and visual effects, being able to fit in one more iteration can mean the difference between a satisfied client and a botched job. Using OpenCL to tap into the power of the GPU, the MayaBullet plugin enables artists to iterate simulations at the speed a director can think. With up to 4 teraflops of floating-point performance, the AMD FirePro W7000, W8000 and W9000 graphics cards chew through complex processing tasks, enabling artists to complete test simulations while the client is still in the office – not force them to come back the next day.

Add sophisticated constraints and interactions to bring simulations to life

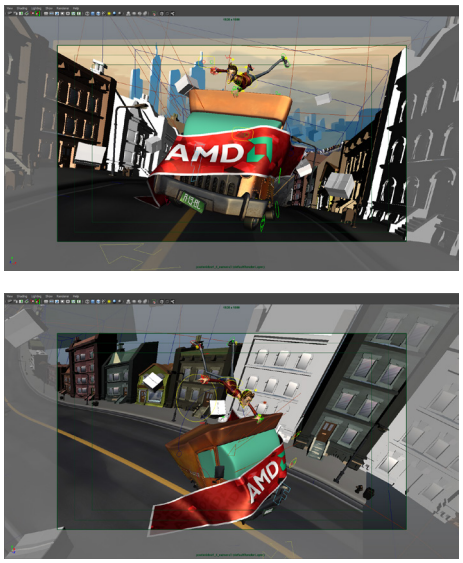
With support for Maya's native forces and constraint types, the updated Bullet plugin enables artists to direct simulations in more sophisticated, believable ways. Unlike other physics solvers, Bullet also supports complex interactions between different types of simulations, including cloth-to-rigid-body collisions, cloth self-collision, and wind and air simulation with cloth. With up to 6GB of fast GDDR5 RAM, the AMD FirePro W7000, W8000 and W9000 graphics cards ensure that memory restrictions never become an issue, even on the most complex of multi-physics simulations.

Create cross-platform physics solutions

Open-source technologies like Bullet provides cross-platform performance. Available under a free software license, game developers can use the Bullet kernel to build physics systems that run on multiple platforms: from PCs to next-generation consoles.

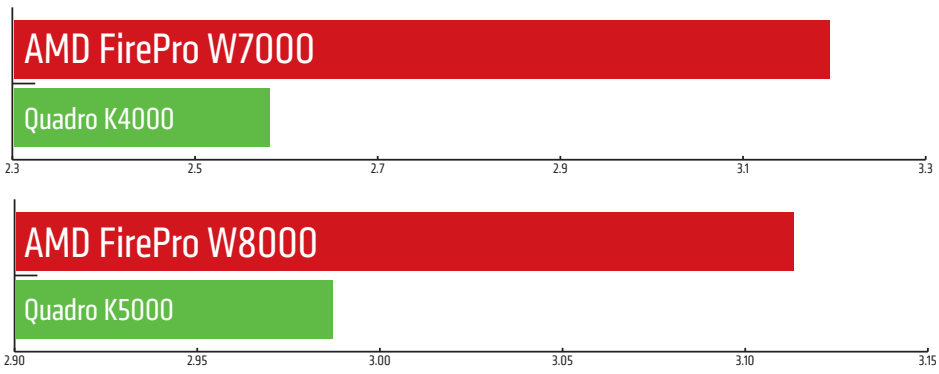
"OpenCL allows Maya to get to the GPU compute performance of AMD's FirePro cards, and the performance we are seeing is incredible! Calculations happen in real time and frame rates stay high, even when working on complex visual effects"

Kamal Mistry, Product Manager, Media & Entertainment, Autodesk



Harnessing the power of the GPU via OpenCL, the updated MayaBullet plugin makes it possible to create rigid-body systems an order of magnitude more complex than before.

Maya 2014 benchmarks Graphics Composite Scores (higher is better)



System specs: Professional workstation with Intel E5-1603 @ 2.80 GHz 16.0 GB RAM Windows 7 Professional Benchmark ran with 4 iterations. Drivers: AMD FirePro version 13.101 NV Quadro version 320.49

AUTODESK 3DS MAX

AMD FirePro professional graphics cards for 3ds Max users

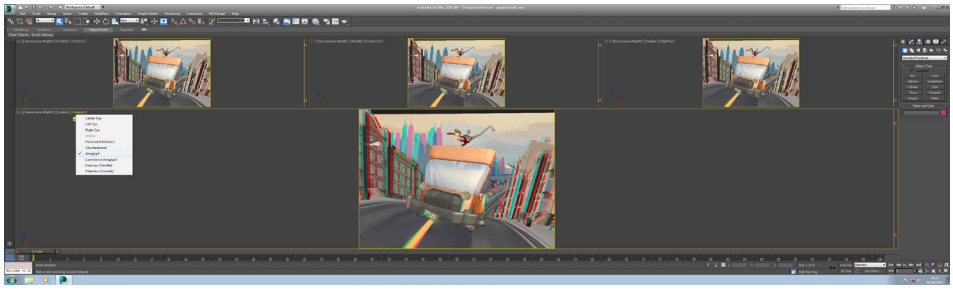
Create compelling stereoscopic content without switching software

With the number of movies, games and TV projects delivered in 3D rising yearly, being able to create compelling stereoscopic content is now a business necessity. AMD has collaborated with Autodesk to make the powerful stereoscopic workflow provided by Maya available inside 3ds Max. Exclusively available through the Autodesk Exchange application store (apps.exchange.autodesk.com, the Stereo Camera plug-in enables artists and designers to create stereoscopic camera rigs. 3ds Max-based VFX facilities can now tackle stereo projects without the difficulties of transferring data between applications.

View stereo content in the display mode that suits you – only with AMD hardware

3ds Max now supports a complete range of options for displaying stereoscopic content in the viewport, including individual camera views, side-by-side and anaglyph displays – and thanks to AMD FirePro professional graphics, as active stereo. Enabled only on AMD professional graphics cards, 3ds Max's active viewport display mode enables artists to view stereoscopic content using a suitable monitor and shutter glasses, enabling them to visualize forms intuitively, without chromatic distortion, or the need to render out a shot to see it in 3D. With a rigorous certification program, guaranteed technical support and regularly updated drivers, AMD FirePro W-series professional graphics cards provide unparalleled stability and reliability on business-critical jobs.

Certified only for use with AMD professional graphics cards, 3ds Max's Active display mode enables users to view stereoscopic content directly in the viewport through shutter glasses, avoiding the chromatic distortion created by the Anaglyph display (pictured below).

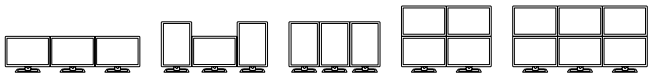


Manipulate complex stereoscopic content and see results in real time

Since stereoscopic content has to be drawn to the screen twice, once for each camera view, choosing the right graphics card is more important than ever. With up to 6GB of dedicated graphics memory and industry-leading memory bandwidth, the AMD FirePro W5000, W7000, W8000 and W9000 ensure that even the most complex of scenes remains seamlessly interactive. Now VFX artists can navigate demanding stereoscopic effects shots in real time while visualisation professionals can manipulate large architectural data sets in stereo, without lag or irritating on-screen stutter.

AMD Eyefinity Multi-Display Technology* and 4K Support

AMD Eyefinity multi-display technology enables an AMD FirePro graphics card to drive up to three, four or even six monitors via DisplayPort 1.2 from a single graphics card, at up to 4K x 2K resolution for each output. Speed up your workflow by using your extra screens to view additional applications to create an optimized workflow while you run 3ds Max, Maya and Mudbox sessions simultaneously or simply refer to your storyboards or project brief.



Conclusion

Through technologies developed in partnership with AMD, Autodesk's 2014 Extension releases enable 3ds Max and Maya users working in any sector of the industry to create compelling content faster and more intuitively than ever. With an innovative GPU advanced architecture, high memory bandwidth, and support for open standards like OpenCL, AMD FirePro W-series professional graphics cards provide artists with the ideal platform with which to tackle today's demanding jobs.

Recommended for Autodesk

	AMD FirePro W7000	AMD FirePro W8000	AMD FirePro W9000
Geometry Performance	1.85 B Tris/s	1.80 B Tris/s	1.95 B Tris/s
Texture Support	4 GB	4 GB (ECC)	6 GB (ECC)
Memory Bandwidth	154 GB/s	176 GB/s	264 GB/s
Compute Performance (Single Precision)	2.4 TFLOPS	3.23 TFLOPS	3.99 TFLOPS
AMD Eyefinity Technology	4 (6*) 4x DP 1.2	4 (6*) 4x DP 1.2	6 6x mini-DP 1.2
Genlock/Framelock	Yes/Yes	Yes/Yes	Yes/Yes
Ready for 4K (UHD)	Yes	Yes	Yes
System Interface	PCIe 3.0	PCIe 3.0	PCIe 3.0
Form-factor:	Single-slot	Dual-slot	Dual-slot

For more information, visit www.fireprographics.com/autodesk

AMD

* AMD Eyefinity technology supports up to six DisplayPort™ monitors on an enabled graphics card. Supported display quantity, type and resolution vary by model and board design; confirm specifications with manufacturer before purchase. To enable more than two displays, or multiple displays from a single output, additional hardware such as DisplayPort-ready monitors or DisplayPort 1.2 MST-enabled hubs may be required. Maximum two active adapters supported. See www.amd.com/eyefinityfaq for full details.

Images courtesy of Jon Russ www.jonathanruss.co.uk