Autodesk® Maya® 2016
Features and benefits

Overview

Autodesk® Maya® 2016 software is full of new features, performance improvements, and artist-friendly tools that greatly enhance the entire Maya experience. In addition to an all-new look and feel that includes reorganized menus that better match artist workflows, Maya is now leveraging more resources (cores) in the computer to accelerate animation performance, increasing the speed of both playback and manipulation of character rigs. A new native sculpting toolset makes modeling in Maya easier and more fun, allowing modelers to more quickly sketch-out forms and shapes, create poses for blend-shapes, or perform terrain modeling. Artists can achieve even more realistic VFX results using Bifrost with the addition of foam, surface tension, viscosity, and adaptive aerodynamics. Additionally, enhancements such as multithreading and new preset capabilities for XGen have made tasks such as hair grooms, vegetation, and instancing faster and easier to do.

Top features and benefits

Parallel Rig Evaluation
Maya 2016 delivers a new parallel evaluation system that helps increase the speed of both playback and manipulation of character rigs. This new multithreaded system is designed to distribute computation amongst existing cores and graphics processors in your computer. A new GPU-based mechanism performs deformations on your graphics hardware within Viewport 2.0. Developers and technical artists can create customized GPU-accelerated deformers by utilizing provided APIs. The integrated performance profiler makes it easier to understand and target bottlenecks in scenes and plug-ins.

New Sculpting Toolset
A new sculpting toolset in Maya 2016 gives artists the freedom to sculpt and shape models more artistically and intuitively. The new sculpting toolset represents an upgrade over Maya's previous sculpting tools, providing more detail and resolution. The brushes feature volume and surface falloff, stamp images, sculpting UVs, and support for vector displacement stamps.

Adaptive Foam in Bifrost
Artists can now add froth, foam and bubbles ("whitewater") to liquid simulations, creating even more realism and detail in scenes with oceans, beaches, lakes and stormy seas. With camera adaptivity, artists can create high resolution simulations close to the camera where detail is essential, while lowering the computation of foam particles in other areas, resulting in shorter simulation times.

Delta Mush Deformer
A popular user request, the new Delta Mush deformer in Maya 2016 is ready for production pipelines. Delta Mush smooths deformation, guiding the final result closer to the original geometry. It can be used in many different workflows such as paint-free skinning, smoothing of coarse simulation results, and shot post corrections. Maya users can suggest their own workflow improvements and vote on current suggestions using the Small Annoying Things forum, while larger issues can be suggested at the Ideas for Maya forum.

Maya 2016

New Look and Feel

A redesign of the user interface (UI) delivers a modern, consistent, and fresh user experience while maintaining familiarity with the workflows artists rely on. New icons, fonts, and a refined layout enable scaling and readability of the Maya UI across multiple form factors, displays, and resolutions- from handheld tablet PC's to Ultra HD or 5K monitors. A streamlined and re-categorized menu system based on workflows improves the discoverability of the tools that artists need, when they need them.

XGen is easier to use, and faster

An all-new presets workflow allows artists to quickly share their looks between meshes by applying pre-made grass or hairstyles to the meshes for an improved starting point. The XGen preset library now comes with presets previously included for Maya Fur, and allows artists to build a library of descriptions with custom thumbnails so they don't have to re-build from scratch each time. A new guide-sculpting brush tool helps artists sculpt guides more quickly and interactively. Width control on splines allows artists to create custom shapes for primitives, such as leaves, scales, and feathers. Multithreading improves the speed of both preview generation and interactivity, reducing the time spent waiting for primitives to be generated on the surface, and the new bounding box increases preview speed in the viewport by reducing the number of polygons being generated.

Guided Simulation in Bifrost

New guided simulation workflows let artists drive the behavior of liquids using a cached simulation or an animated mesh object. With a guided simulation, a full-depth low-resolution liquid can be used to guide a high-resolution simulation on the liquid's surface. Use guided simulation for such effects as carefully art directed hero waves. Artists can perform multiple iterations at high resolution while retaining the basic look and motion of the underlying guiding simulation.

Adaptive Aero Solver in Bifrost

The all-new adaptive Aero solver in Maya 2016 provides the ability to create atmospheric effects such as smoke and mist. Compared to Maya Fluids, Aero produces simulations of higher detail and greater physical accuracy. As with guided simulation, low resolution aero solves can drive higher resolution detail. The added benefit of adaptivity allows artists to define regions of high resolution within a massively large computational domain.

Look development workflow enhancements

In Maya 2016 the everyday tasks of building and editing materials in the Hypershade are more artist-friendly and intuitive through new simplified workflows and a revamped UI that allows artists to achieve results faster. Enhancements include a rebuilt node-editing interface, making it easier to connect, arrange, and work with shading components, while new workflows enable visualization and diagnosis of complex shading graphs. The new user interface can be customized to match an artist's preferred setup, including support for newly added layout tabs allowing them to work with shading graphs in a far more organized way. Additionally, new performance improvements ensure artists can continue working without interruption in the Hypershade.

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Other key features and benefits

Color Management

Maya 2015 Extension 1 introduced a completely new color management system to Maya; this system allows artists to preview color decisions earlier in the pipeline to ensure creative decision-making can happen quickly. For Maya 2016, Color Management now enables easy pipeline-driven management of input file color spaces to help artists address issues, and helps supervisors manage file-handling consistency. With the ability to color manage play-blasted viewport previews, studios can more consistently ensure color accuracy and preview looks early in the creative process. Support for EXR floating-point data and for the Autodesk® Color Management component (SynColor), the OpenColorIO open source project, and the Academy Color Encoding System (ACES) enables consistent color-safe handling of imagery across The Foundry's NUKE® software, Adobe® Photoshop® software, Autodesk® Creative Finishing solutions, and certain other applications to help ensure color compatibility throughout the studio pipeline.

New UV Workflows

Maya 2016 introduces a new set of brushes that help make editing UVs more intuitive. Artists can now position UVs and texture models relative to surface shapes. They can add detail more intuitively with the UV grab brush, including sculpting and tweaking UVs in 3D view directly on the mesh, without selecting components. Additional new brushes allow artists to apply “optimize” and “unfold” locally, “pin” vertices, and cut UVs, making editing faster and more fun. These new workflows come with a new API, allowing studios to customize as needed.

Open Procedural Graph for Bifrost

In Maya 2016, Bifrost now has an open graph that provides artists with the ability to tweak and customize simulations in a node-based environment.

New Visual Hotkey Editor

The new visual Hotkey Editor in Maya 2016 makes it easier and more intuitive to customize context-based hotkeys for Maya’s editors, tools, and menus, giving artists full control over their keyboard real estate. Users can now create multiple hotkey presets, which can also be exported for use on other workstations.

Enhanced poly-modeling workflows

The Modeling Toolkit is smoother and more streamlined, offering improvements to Multi-cut and Bevel that make them more powerful and flexible. Workflows are faster thanks to a new In-View Editor (IVE) for quick tweaks of modeling settings, and a better-organized Modeling menu set that groups NURBS, curves, and deformer tools together. More than 30 Small Annoying Things, submitted by users, are solved in this update.

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Rendering upgrades for Viewport 2.0 and ShaderFX

Viewport 2.0 and ShaderFX now enable real-time effects like tessellation, which was previously only available through DirectX 11 on Windows platforms, thanks to additional support of Open GL 4-based GLSL shading on all OS platforms. The upgraded rendering engine (OpenGL CoreProfile) better supports modern graphics hardware as well as the Mac OS. Additionally, Viewport 2.0 has increased stability and performance, enabling interactivity when loading complex scenes by background loading of textures, UV tiles, and materials.

Improved performance and quality in mental ray® for Maya

Updates to mental ray for Maya make everyday rendering tasks easier and more efficient. Revamped render settings ensure high quality results out-of-the-box, encouraging the use of modern techniques. mental ray for Maya has an updated render pass system that streamlines the process of generating meaningful passes automatically. Improvements for stability and general performance have been added as well, including high-resolution texture UVtile and UDIM textures, XGen rendering, and efficient handling of large scenes. The seamless incorporation of Light Importance Sampling delivers higher quality renders in less time, particularly in challenging lighting situations, and the new support for geometry-based lights allows for greater control over lighting creating more realistic results.

Streamline your pipeline

Maya 2016 has fully adopted the VFX Reference Platform standards for the 2015 calendar year, making it easier to streamline the development of pipeline tools. The VES Tech Committee, Autodesk, and other third party vendors collaborated to define a standard for development environments, frameworks and open-source components most commonly used in studios. For more information about the VFX Reference Platform, visit: www.vfxplatform.com

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