Autodesk® Entertainment Creation Suites 2016

Features and benefits

Overview

The Autodesk® Entertainment Creation Suites 2016 provide an affordable end-to-end creation solution, packed with tools used by leading artists working in visual effects, 3D game development, and other 3D animation production.

The Standard edition offers a choice of either Autodesk® 3ds Max® 2016 or Autodesk® Maya® 2016 3D modeling and animation software, together with Autodesk® Mudbox® 2016 digital sculpting and painting software, and Autodesk® MotionBuilder® 2016 real-time virtual production and character animation software. With the Ultimate edition, you get everything in the Standard edition together with both Maya and 3ds Max, as well as Autodesk® Softimage® 2015 visual effects and animation software.

Integrated through single-step interoperability workflows and common look and feel elements, the Suites help increase productivity and provide enhanced creative opportunities.

Top features and benefits

3ds Max 2016
Maya 2016
Softimage 2015
Mudbox 2016
MotionBuilder 2016

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3ds Max 2016*

With artists in many different industries relying on Autodesk® 3ds Max® software in their daily work, our 3ds Max 2016 release offers our most capable and varied tool set to date, giving artists the 3D tools they need to create inspirational experiences no matter what their industry demands. 3ds Max 2016 is packed with brand-new features that enable users to create custom tools and easily share their work for better collaboration across teams. It also empowers new users to work with more speed and confidence.

A new node-based programming system enables users to extend the capabilities of 3ds Max and share newly created tools with other users. In addition, XRef renovations make collaboration across teams and throughout the production pipeline easier. With Autodesk® A360 rendering support and a new Physical Camera, 3ds Max users can create photorealistic images with greater ease. Moreover, new OpenSubdiv support and Dual Quaternion Skinning enable artists to model with greater efficiency, and the new Camera Sequencer offers more directorial control over the presentation of their story. A new Design Workspace provides task-based workflows that make the main features of the software more accessible, and a new template system provides users with baseline settings so projects get started more quickly and are rendered more successfully.

Key new features in 3ds Max 2016

Max Creation Graph

3ds Max 2016 features Max Creation Graph, a node-based tool creation environment, one of the top feature requests on User Voice, an online forum where customers can suggest features and vote on current suggestions. Max Creation Graph gives users a modern and logical way to extend the capabilities of 3ds Max with new geometric objects and modifiers by creating graphs in a visual environment similar to the Slate material editor. Users can choose from several hundred different node types (operators) that can be connected together to create new tools and visual effects. What's more, users have the ability to create new node types by saving graphs called compounds. The new tools that users create can be easily packaged and shared with other users, helping them expand their toolset.

XRef Renovations

Collaboration across teams and throughout the production pipeline is now easier thanks to new support for non-destructive animation workflows in XRef and improved stability. 3ds Max users can now externally reference objects to their scene and animate them or edit material on the XRef object in the source file without having to merge the objects into the scene. Changes made in the source file will automatically be inherited in their local scene. Users can publish animatable parameters on their desired node and organize the parameters as desired. Other users can externally reference content with animatable parameters to populate their scenes, which helps save time and gives them guidance about which key parameters to use.

OpenSubdiv Support

With new support for OpenSubdiv, first introduced in Extension 1, users can now represent subdivision surfaces in 3ds Max using the OpenSubdiv libraries open-sourced by Pixar. The libraries incorporate technology from Microsoft Research, and are designed to help take advantage of both parallel CPU and GPU architectures, leading to faster in-viewport performance for meshes with high subdivision levels. In addition, efficient crease modeling workflows with CreaseSet modifier and Crease Explorer enable users to create complex topology in less time. Using Autodesk® FBX® asset exchange technology, artists can more easily transfer their models to and from certain other packages that support OpenSubdiv and achieve a consistent appearance. With the new 2016 release, OpenSubdiv features improved speed and quality since it was introduced in Extension 1. OpenSubdiv now also offers support for adaptive subdivision in the viewports and at render time. Artists can see the effects while they edit or pose their models, increasing efficiency without sacrificing quality.

New Design Workspace

With more and more people using 3ds Max to create impressive visualizations, we are introducing the new Design Workspace that brings more efficient workflows to 3ds Max users. The Design Workspace follows a task-based logical system with easy access to object placement, lighting, rendering, modeling and texturing tools in 3ds Max. Importing design data to quickly create high-quality stills and animation is now easier.

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New Template System

New on-demand templates provide users with standardized start-up configurations, which help accelerate the scene creation process. With easy import/export options, users can quickly share templates across teams. Users also have the ability to create new templates or modify existing templates, custom tailoring them for individual workflows. Built-in settings for rendering, environments, lighting and units mean faster, more accurate and consistent 3ds Max project results.

Camera Sequencer

Telling great stories with high-quality animated visualizations, animatics, and cinematics is now easier with the new Camera Sequencer, giving 3ds Max users even more control. This new feature offers the ability to easily cut between multiple cameras, trim, and reorder animated clips nondestructively—leaving the original animation data unchanged while giving users the flexibility to be creative.

Dual Quaternion Skinning

3ds Max smooth skinning is made better with the addition of Dual Quaternion, built specifically to avoid "bow tie" or "candy wrapper" effects where the mesh loses volume when deformers are twisted or pivoted. Most common in a character's shoulders or wrists, this new method of smooth skinning helps reduce undesirable deformation artifacts. As a new option in the Skin modifier, Dual Quaternion lets users paint the amount of influence skinning will have on a surface, so they can use it where they need it and taper off to linear skin weighting where they don't.

Autodesk A360 Rendering Support

Using the same technology that our customers have already grown to rely on in Autodesk® Revit® software and AutoCAD® software, 3ds Max features Autodesk A360 rendering support available to customers on Autodesk® Maintenance and Desktop Subscription. Users now have access to cloud rendering in A360 right from within 3ds Max. A360 takes advantage of the power of cloud computing so that 3ds Max users can create impressive high-resolution images without having to tie up their desktop or requiring specialized rendering hardware, helping them save time and reduce costs. What's more, Subscription customers can create solar study renderings, interactive panoramas, illuminance simulations, re-render images from previously uploaded files and easily share their files with other teams or colleagues.

Physical Camera

Co-developed with Chaos Group, the makers of V-Ray, the new Physical Camera offers artists new options that simulate real-life camera settings that users may be familiar with, such as Shutter Speed, Aperture, Depth of Field, and Exposure. With enhanced controls and additional in-viewport feedback, the new Physical Camera makes creating photorealistic images and animations easier.

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Maya 2016**

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.

Key new features in Maya 2016

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.

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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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Softimage 2015***

Autodesk® Softimage® 2015 software helps studios more efficiently create and manage the highly detailed assets required by today's demanding entertainment productions. Enhancements to the ICE platform, access to previously unexposed functionality in the NVIDIA® mental ray® renderer, and animatable weight maps in Syflex cloth help bring new creative possibilities to artists and technical directors, while support for Alembic caching and progressive rendering in mental ray help them elegantly handle the increasingly complex data sets they face. In addition, single-step interoperability between Softimage 2015, Autodesk® MotionBuilder® 2015 software, and Autodesk® Maya® 2015 software helps artists harness the power of CrowdFX in an integrated cross-product crowd simulation workflow.

Key new features in Softimage 2015

Alembic caching
Softimage artists can now read and write the Alembic open computer graphics interchange framework format. Co-developed by Sony Pictures Imageworks Inc. and Lucasfilm Ltd., Alembic distills complex animated and simulated data into application-independent baked geometry. As a result, massive datasets can be more easily passed between disciplines—as an example, animation and lighting—helping reduce the overhead and loss of interactivity associated with transferring fully editable scene data.

ICE performance and usability enhancements
The powerful ICE platform now offers enhanced performance and usability to help artists and technical directors create stunning large-scale procedural effects in less time. With overall improvements to performance and memory usage; offline editing and muting for increased responsiveness when editing ICE trees; and a number of workflow improvements to the ICE editor, it's now faster and easier to create and edit complex, highly detailed effects in ICE.

Access to unexposed mental ray functionality
Technical directors can now activate functions in the NVIDIA® mental ray® renderer that have not yet been exposed in the Softimage user interface by using mental ray string options. Light Importance Sampling and Native Image Based Lighting are examples of the functionalities that can be accessed in this manner.

Support for mental ray progressive rendering
Artists can now take advantage of progressive rendering for mental ray, where the complete image is first rendered at a lower quality, and then refined step by step. This enables them to more quickly adjust shaders and lighting, without waiting for the full-quality render to be completed.

Animated weight maps in Syflex cloth
It's now possible to use a sequence of maps to influence various attributes on a per-frame basis in Syflex cloth simulations, allowing for more interesting and sophisticated simulations. As an example, the cloth's Mass attribute might be animated over time using a series of maps to simulate cloth being pulled from water and gradually losing its weight as the water drains from it.

Easier cross-product CrowdFX workflows
Character animations created in Autodesk® MotionBuilder® 2015 software can now be imported into Softimage in a single step, making it much easier to use them with the powerful CrowdFX crowd simulation feature. Moreover, a single click can now take CrowdFX simulations to Autodesk® Maya® 2015 software for inclusion with other scene elements, helping to facilitate a smoother cross-product workflow.

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Mudbox 2016

Autodesk® Mudbox® 2016 software is a cost-effective digital sculpting and painting solution. Mudbox provides 3D artists with an intuitive and tactile toolset for creating and modifying high-quality 3D geometry and textures.

The latest release of Mudbox introduces a series of new sculpting tools, including new Volume and Surface Falloff options, the Relax Brush for smoothing surfaces while trying to preserve the shape of a mesh, and a Twist feature in the Grab Brush for creating swirl-like effects on a mesh.

Key new features in Mudbox 2016

Volume and Surface Falloff
Artists can now choose Volume or Surface Falloff options for brushes in addition to the default Hybrid mode, which automatically selects the falloff mode based on whether meshes are connected or separate from one another. With Volume Falloff, anything within the brush radius will be affected by the brush stroke, regardless of whether surfaces are connected or not. For example, artists can use this mode to deform a character made up of many separate parts. Alternatively, Surface Falloff mode gives artists more control by using the center point of the brush to determine the area affected. This mode is especially useful when working on geometrically tight surfaces, such as separating lips, folding eyelids, or making changes to one finger without affecting others.

Relax Brush
Mudbox 2016 introduces a new Relax Brush with a default Constrain to Surface option. When selected, brushing will even out the space between vertices to provide cleaner topology while making minimal changes to the original shape of the mesh. Constrain to Surface can now also be selected for the Pinch, Smear and Grab brushes.

Twist for Grab Brush
The new Twist feature in the Grab tool allows artists to twist all vertices within the sculpting brush falloff radius clockwise or counterclockwise. This feature is useful for creating swirled objects like soft serve ice cream, rotating ears and eyes to change their position on a character's head, or twisting the corners of a character's mouth to create a smile or frown.

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MotionBuilder 2016

Autodesk® MotionBuilder® 2016 software delivers new enhancements, based on top user requests, that help improve daily work for artists, developers, directors, and cinematographers. These enhancements also help studios more efficiently manipulate and refine motion-capture, as well as other animation data, used in game development, visualization, pre-visualization, virtual cinematography, and feature film production.

Key new features in MotionBuilder 2016

Story Enhancements

MotionBuilder 2016 offers a number of powerful usability enhancements for the Story tool that help improve workflow efficiency, especially when dealing with multiple Story clips. The new Clip Alignment option provides users with convenient options to align multiple clips together. The new Make All Clips Read-Only functionality saves memory by enabling the conversion of all the writable story clips available on the Story tracks into Read-only clips. Additionally, the new Expanding Clips option allows you to expand the selected clips to their previous and/or next clips. Combined with the Make All Clips Read-Only option, this provides the ability to easily create animation loops without leaving the Story UI.

FCurve Improvements

MotionBuilder 2016 provides access to convenient frame features such as Frame Start/End and Frame Zoom Bar within the FCurve, which is useful for quickly viewing the animation frames in the FCurve window. Additionally, the capability of viewing and editing keys in the FCurve editor with transformation values of up to 1,000,000 can now support the scale of a complex and modern production environment.

Removal of FBX 2GB File Size Limit

MotionBuilder 2016 eliminates the FBX file size limitation of 2GB, providing maximum flexibility while enabling the authoring of larger scale scenes and embedded media files.

Only in Autodesk® 3ds Max® Entertainment Creation Suite Standard and Autodesk® Entertainment Creation Suite Ultimate
**Only in Autodesk® Maya® Entertainment Creation Suite Standard and Autodesk® Entertainment Creation Suite Ultimate*
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