



AUTODESK® 3DS MAX® 2010 SOFTWARE FEATURES AND BENEFITS

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3DS MAX 2010: KEY FEATURES AND BENEFITS

Model Efficiently, Animate Easily, Achieve Stunning Results in Less Time

The award-winning Autodesk® 3ds Max® software is the tool of choice for leaders in the game development, television, film and digital publishing industries who are looking for a comprehensive 3D solution that produces results out of the box. Over the years the software has become renowned for its ready-to-use, template-based character rigging system, along with its efficient polygon modeling toolset and UV texturing workflow. Additionally, the software gives you multiple integrated rendering options, including unlimited free network rendering with mental ray® technology.

3DS MAX 2010

NEW FEATURE HIGHLIGHTS


Shape your worlds the way you want.

- The new Graphite modeling tools represent a modern approach to 3D modeling—over 100 tools for freeform sculpting, texture painting, and advanced polygonal modeling, unified in an innovative user interface. Now artists can experience extreme creativity with this extensive new toolset.
- Bring your vision to life with realistic water, fire, smoke, and other particle effects with PFlowAdvanced, a comprehensive particle design system. PFlowAdvanced also includes the new PFlowElements library with at least 100 samples created by an industry-leading effects artist.
- The third generation of Review technology represents a major leap forward in viewport display, helping take the guesswork out of final renders. It offers support for ambient occlusion, High Dynamic Range Image (HDRI)-based lighting, soft shadows, hardware anti-aliasing, interactive exposure control, and the revolutionary mental mill® shader technology.

Manage scene complexity with ease.

- Create powerful referencing workflows to organize complex scenes easily by treating multiple objects and scenes as a single Container object. Set rules for the Container to control access to its content in collaborative environments. Fast loading and unloading of containers helps you improve performance and reduce memory requirements.
- The new Material Explorer simplifies the way artists interact with objects and materials. Navigate all rendering-related assets in the scene, perform operations on multiple objects, or inspect individual materials. The Material Explorer also lets you replace materials—making iterations much easier, even in highly complex scenes.
- Intelligently simplify geometry with the new ProOptimizer technology. Retain visual fidelity with support for explicit normals, symmetry, UV boundaries, and texture edges.
- Significantly reduce errors in your pipeline using the new xView mesh analyzer technology. Providing in-viewport reporting on several types of mesh errors like overlapping UVs, duplicate faces, isolated vertices, and other geometry errors, xView helps you avoid costly mistakes early in the design process when mistakes are easier to fix.
- Work faster with expanded multicore processor support with multi-threaded mesh display processing algorithms and the xView mesh analyzer. Combined with the many graphic processing unit (GPU) optimizations previously made, users will benefit from a much more responsive viewport experience.

Take advantage of software interoperability and pipeline integration.



Autodesk® 3ds Max® 2010 Features and Benefits

- 3ds Max 2010 is the first animation package to integrate the mental images powerful mental mill technology. This means that 3ds Max users will be able to develop, test and maintain hardware-agnostic shaders and complex shader graphs for hardware and software rendering with real-time visual feedback – no programming skills required.
- Improved interoperability with Autodesk® Mudbox® software is provided through enhanced OBJ support along with polygon optimization using ProOptimizer. Bake normal and displacement maps in Mudbox and then render them seamlessly with 3ds Max 2010.
- Enhanced Autodesk® FBX® software data translation fidelity improves interoperability between 3ds Max and other Autodesk products such as Autodesk® MotionBuilder®, Autodesk® Toxik® and Autodesk® Maya® software.
- Additional support for C# and .NET gives developers the access they need to customize, extend, and integrate 3ds Max into their existing pipelines. A new MAXScript debugger with line-number support helps identify problems in customized scripts.

3DS MAX 2010 AND 3DS MAX 2010 30-DAY TRIAL

3ds Max 2010 — The award-winning Autodesk 3ds Max software is a powerful, integrated 3D modeling, animation, and rendering solution. Its accessible tools allow leading games, film and television studios deliver their blockbuster hits on time and on budget.

3ds Max 2010 30-day Trial — The Autodesk 3ds Max 2010 30-day trial is a fully functional version of the 3ds Max software that provides free* access to 3ds Max for non-commercial use. This allows 3D graphics and animation students, industry professionals, or anyone interested in breaking into the world of computer graphics (CG) the opportunity to explore all aspects of the 3ds Max software.

(Note: 3ds Max 2010 and 3ds Max 2010 30-day trial software are available for Microsoft® Windows Vista® and Microsoft® Windows® XP Professional operating systems.)

**This product is subject to the terms and conditions of the end-user license agreement that accompanies the download of the software.*

INNOVATIVE MODELING AND MAPPING

Graphite Modeling Tools

3ds Max 2010 takes the renowned 3ds Max polygon modeling tools to a whole new level. With over 100 new tools for advanced polygonal modeling and freeform design, the Graphite modeling tools facilitate creativity and artistic freedom. Additionally, the Graphite tools are displayed in one central location, making it easy to find the tool you need for the job. Moreover, users can customize the tool display or hide the command panel and model in Expert Mode.

In addition to the modeling and mapping tools available in previous versions of the software, the Graphite toolkit also includes a number of completely new tools for such operations as:

- Quick re-topologizing
- Granular poly editing
- Sculpting with assorted brushes
- Locking transforms to any surface
- Freeform creation of vertices
- Modifying and creating smart selections
- Quick drawing of surfaces and shapes
- Quick transformations

Material Explorer

Manage scene complexity with ease using the new Material Explorer. The productivity-enhancing Material Explorer revolutionizes the way artists interact with objects and materials in 3ds Max. Users can now quickly browse all materials in the scene, replace materials, and view material properties and relationships.

xView Mesh Analyzer

Validate your 3D models prior to export or rendering using the new xView mesh analyzer technology. Get an interactive view of where problems may lie to help you make crucial decisions. This key new tool makes testing of models and maps significantly faster and more efficient. Users can test or query for flipped faces, overlapping faces and unwelded vertices. They can also add their own specific tests and queries.

ProOptimizer

The new 3ds Max ProOptimizer technology is ideal for quickly and intelligently optimizing high-poly count 3D models from digital sculpting applications such as Autodesk Mudbox. It enables users to precisely control the number of faces or points their scene/model has: useful faces are removed last, so that a selection can be reduced up to 75% without loss of detail. Scenes can be optimized in real time, or batch optimized. ProOptimizer technology maintains UV texture channel information and vertex color channel information, respects the symmetry of symmetrical models, preserves explicit normals, and gives users the option to protect or exclude object borders.

Viewport Canvas

New in 3ds Max 2010 is the ability for artists to paint on a 3D model directly in the Viewport. This means artists will be able to quickly create new maps or extend existing maps using brushes, blend modes, fill, clone and erase. The Viewport also provides quick updates for changes to textures made in Adobe® Photoshop® software.

ProBooleans Enhancements

A new Quadify modifier has been added to the 3ds Max ProBooleans toolset that enables modelers to clean up triangles in model for better subdivision and smoothing. A new Merge Boolean operation has also been added which lets them attach an object (or multiple objects) to another while maintaining the transforms, topology and modifier stacks of each object.

UVW Unwrap Enhancements

Manipulating UV maps in the Viewport is now as easy as modeling in the Viewport thanks to a significantly expanded 3ds Max UVW Unwrap toolset. New features include such UV Selection tools as Growing/Shrinking Rings and Loops, and quick editing tools for aligning, spacing, and stitching UVs.

ADVANCED RENDERING

mental mill/MetaSL Support

3ds Max 2010 is the first animation package to integrate the mental images powerful mental mill technology. This means that 3ds Max users will be able to develop, test and maintain shaders and complex shader graphs for hardware and software rendering with real-time visual feedback – no programming skills required. MetaSL shaders can be created using the included mental mill Artist Edition software. These shaders are completely hardware agnostic, meaning they do not need to be re-authored for different target platforms. mental mill supports CgFX, HLSL, and GLSL, as well as C++ for mental ray® software and RealityServer; plus, the mental mill application programming interface (API) enables third parties to develop back-end plug-ins for other targets, including special purpose processors and other software renderers.

Review Enhancements

The third generation of Review technology represents the state-of-the-art in viewport display with new support for ambient occlusion, HDRI-based lighting, soft shadows, hardware anti-aliasing, interactive exposure control and the revolutionary mental mill shader technology from mental images. Combined with prior abilities for textures, bump maps and photometric area lights – viewports give you live feedback like never before. The Viewport menu system has also been re-designed to significantly improve the user experience. For example, you can now take advantage of the Layer Manager to control groups of lights (light banks) to quickly turn on and off lights in the viewport, similar to what you can do with the 3ds Max software renderer.

Global Quality Knobs: mental ray

Artists can now quickly dial up or down overall quality settings for shadows, glossy refractions or glossy reflections with global quality knobs along with image anti-aliasing and indirect illumination quality.

Support for High Resolution Render Output

Enhancements to the 3ds Max automatic memory management feature enables artists to render out large, print resolution images with 32-bit systems.

Animation Flicker Reduction: mental ray

3ds Max 2010 enables users to render animation sequences in mental ray with indirect illumination calculations (Final Gather), greatly reducing or eliminating traditional flickering issues. The ability to use the Final Gather cache, and render animation sequences faster has also been improved.

Multi-Map Shader: mental ray

A new 3ds Max Multi-Map Shader for mental ray lets users purposely assign specific color variations to a set of objects that otherwise share the same material. It can also be used to quickly randomize or assign colors to multiple objects/maps based on object IDs or Material IDs. This new capability could be used to randomize the colors of rocks, scales, crowds, or anything repetitive that could benefit from a degree of color variation.

Final Gather Progressive Rendering

Progressive feedback has now been added for mental ray Final Gather, helping artists to more quickly evaluate their rendering results.

Render Surface Map

3ds Max 2010 enables artists to generate bitmaps based on the surface of the geometry (Density maps, Dust maps, SubSurface maps, and Cavity maps) that can be used as masks to blend textures. Maps can also be generated from sub-object selections and wrapped textures that are generated automatically with blended seams. These provide a good starting point for painting or layering details in bitmaps. For example, an artist might generate a Cavity grayscale bitmap where the crevices on the object are darkest, use this as a mask to blend dirt, rust, or emphasize contours with shading.

Linear Color Space Workflow

Gamma correction has been improved to correctly handle images and textures for a physically-accurate rendering workflow where color consistency is critical. Gamma settings now load correctly with files and propagate correctly on network rendering solutions.

SIMPLIFIED DATA AND SCENE MANAGEMENT

Containers

The addition of the Containers toolset to 3ds Max facilitates collaboration and flexible workflows by enabling users to collect multiple objects into a single container when dealing with complex scenes. Related objects (e.g. sections of a city) can be placed in a container and treated as a single element. To improve scene performance, containers can be temporarily unloaded from the viewport display while maintaining their relationships to the scene, and later reloaded when needed. Such workflows can save memory, increase viewport performance and decrease load and save times. Container nodes can be translated, deleted, copied, or saved – affecting everything in the container. Containers also override object properties – so users can organize scene display using container properties without affecting layer organization (similar to a nested layer workflow). Multiple containers created by others can be referenced into a single scene - enabling users to work in-context with each other. Accessing and editing each other's container is managed with permissions on the container – allowing flexible workflows while also imposing constraints on what can be edited.

Enhanced Scene Explorer

With 3ds Max 2010, Autodesk continues to expand the functionality of the Scene Explorer and increase its level of integration with the rest of the software. This powerful scene management toolset now works with viewports, Track View, as well as the Material Explorer. Additionally, Scene Explorer now offers improved management tools – making it easier to navigate, inspect and modify the properties of objects in a scene.

OBJ Import Improvements

Expanded support for the OBJ file format facilitates the importing and exporting of 3D model data between Autodesk Mudbox and 3ds Max 2010 – as well as other third-party 3D digital sculpting applications. Users will now be able to see if their OBJ files contain texture coordinates and smoothing groups. They will also have options for triangulating polygons on import, choosing how normals are imported and for saving presets for normal and polygon import, for future use.

Flight Studio Support

A new 3ds Max plug-in enables users to import and export OpenFlight format® scenes (FLT files). Users can now load, edit and export OpenFlight scene graphs and databases from within 3ds Max - while retaining scene graph structure and attributes. Instead of translating and losing data, 3ds Max can be used as an OpenFlight editor.

ADVANCED EFFECTS

PFlowAdvanced

PFlowAdvanced lets users incorporate sophisticated particle effects into their scenes. It includes 14 operators new to 3ds Max including new precision Painting tools (for precise particle placement), the Shape Plus operator (for defining the shape of particles) and a wide range of Grouping operators (for creating subsets of particles). It also extends and optimizes the previous PFlow functionality while reducing user interface (UI) complexity, resulting in vastly improved performance and a streamlined, thoroughly 3ds Max workflow.

ProSound

Animators and others can now add up to 100 audio tracks to their animated scenes. The integration into 3ds Max of the Sound Trax plug-in as the ProSound, multi-track audio toolset means they now have a permanent solution to the problem of sound syncing. ProSound enables them to sync their audio with the viewport play rate, render it to match playback speed, or play it backwards and forwards (Ping Pong mode). The technology supports both PCM and compressed audio in AVI and WAV format with up to six output channels; it also gives animators 46 scriptable audio commands.

Cloth

A whole new range of cloth effects is now available to 3ds Max users. The cloth toolset now supports pressure settings for simulating inflated, enclosed cloth surfaces (e.g. cushions, balloons) and cloth can now be torn with variable strength and timing (e.g. cutting, tearing and unzipping cloth). Collision objects can even be set to cut cloth when they collide. Finally, a new Inherit Velocity tool blends a new simulation with one from previous frames to create a smooth transition for staged simulations.

Hair

The 3ds Max Hair toolset has now been enhanced to give artists more precise control over the styling and animation of hair. A new Spline Deform feature enables them to add splines to a set of hairs which act as control guides so that the hairs can be posed, keyed or assigned a dynamic target – with the hair following. The Hair toolset has now also been exposed in the software developer toolkit (SDK), making it possible for hair to be rendered with third-party renderers.

POWERFUL ANIMATION

Anatomical Hand

Biped now offers character animators greater levels of anatomical accuracy for the animation of character hands. This includes three degrees of freedom for all fingers, euler tangent curve control and greater mechanical precision through bones that are more closely aligned with human anatomy. This data translates well, via FBX, to/from MotionBuilder and Maya.

Support for Locked Tracks

3ds Max 2010 supports the locking of any parameter that can be animated, including those with animation layers. Wires, expressions and scripts will still evaluate when locked, but they will not be editable. This functionality, vital for those working in teams, enables Technical Directors and others to prevent team members from editing specific tracks (and perhaps inadvertently breaking rigs).

Link Constraint

Support for a new Link constraint enables users to quickly animate the links between objects using the standard 3ds Max keyframe animation UI. The tool lets them quickly see their constrained frame numbers and access linked keyframes in the Trackbar, Dope Sheet and Curve Editor.

ENHANCED USER EXPERIENCE

User Interface Refresh

The 3ds Max user interface has been updated to allow for task-based workflows. As a result, key functionality becomes much more accessible when it's needed most through context sensitive user interface components. These flexible UI components are also available through .NET for much greater customizability.

Adobe Photoshop Interoperability

Artists can now assign a Microsoft® DirectX® software material to an object and reference individual layers in Adobe Photoshop .psd files as a texture input, for enhanced interoperability with Photoshop. Additionally, the Viewport Canvas also offers support for Photoshop blending modes and quick updating of textures on 3ds Max models.

SCRIPTING AND SDK

The Software Developer Toolkit (SDK) is only available as a part of 3ds Max 2010, and will not be included with 3ds Max Design 2010. To learn more about the differences between 3ds Max and 3ds Max Design, please visit www.autodesk.com/my3dsmax

MXS Debugger

The addition of line-numbered stack trace reporting makes it easier for script writers to track, inspect and debug their scripts.

Hair SDK Exposure

The Hair toolset has now also been exposed in the SDK, making it possible for hair to be rendered with third-party renderers.

.NET Support

A more flexible and task-based UI component is available for .NET via the Ribbon UI framework.

STABILITY

Improvements to stability in this release focused on resolving numerous issues identified by customers, and through the optional Customer Information Program (CIP). CIP has also been improved to extract more useful information about when problems occur so that they can be addressed more quickly. In addition, users of the 32-bit version and mental ray should see a significant reduction in stability issues as they approach the physical memory limits of their machines due to the new managed memory framebuffer.

PERFORMANCE IMPROVEMENTS

3ds Max 2010 expands multi-processor support by multi-threading the analytical calculations performed by the new xView mesh analyzer and mesh display processing algorithms. Combined with the many GPU optimizations made in previous versions, users will

benefit from a much more responsive viewport experience.

RECOMMENDED SYSTEM REQUIREMENTS

Software Requirements

3ds Max 2010 software requires one of the following **32-bit** or **64-bit** operating systems:

- Microsoft® Windows® XP Professional (Service Pack 2 or higher)
- Microsoft® Windows® Vista (Business, Premium and Ultimate)
- Microsoft® Windows® XP Professional x64
- Microsoft® Windows® Vista 64 bit (Business, Premium and Ultimate)

3ds Max 2010 software requires the following internet browser:

- Microsoft® Internet Explorer® 6 or higher

3ds Max 2010 software requires the following supplemental software:

- DirectX® 9.0c* (required), OpenGL® (optional)

** Some features of 3ds Max 2010 are only enabled when used with graphics hardware that supports Shader Model 3.0 (Pixel Shader and Vertex Shader 3.0). Check with your manufacturer to determine if your hardware supports Shader Model 3.0.*

Hardware Requirements

At a minimum, 3ds Max 2010 **32-bit** software requires a system with the following:

- Intel® Pentium® 4 or higher, AMD Athlon® 64 or higher, or AMD Opteron® processor
- 1 GB RAM (2 GB recommended)
- 2 GB hard disk space
- 1 GB swap space (2 GB recommended)
- Direct3D 10, Direct3D 9, or OpenGL-capable graphics card with minimum 128 MB RAM
- Three-button mouse with mouse driver software
- DVD-ROM drive

Note: Apple® computers based on Intel processors and running Microsoft operating systems are supported using Apple's Boot Camp. Virtual machine environments are not currently supported.

At a minimum, 3ds Max 2010 **64-bit** software requires a system with the following:

- Intel EM64T, AMD Athlon 64 or higher, AMD Opteron processor
- 1 GB RAM (4 GB recommended)
- 2 GB hard disk space
- 1 GB swap space (2 GB recommended)
- Direct3D 10, Direct3D 9, or OpenGL-capable graphics card with minimum 128 MB RAM
- Three-button mouse with mouse driver software
- DVD-ROM drive

3DS MAX 2010 30-DAY TRIAL MINIMUM SYSTEM REQUIREMENTS

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Autodesk® 3ds Max® 2010 Features and Benefits

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