

# Autodesk® 3ds Max® 2016

## Features and benefits

### Overview

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.

### Top features and benefits

#### 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.

# Other key features and benefits

## Alembic Support

Artists can now use the Alembic open computer graphics interchange framework format in 3ds Max. Alembic distills complex animated and simulated data into a non-procedural, application-independent set of baked geometric results. Designed to provide highly efficient use of memory and disk space, Alembic enables artists to view massive datasets in the Nitrous Viewport, and transfer them more easily between other teams and certain programs. A new playback caching system has been added since Extension 1, leading to significantly improved viewport performance.

## Multi-Touch Support

3ds Max 2016 now features multi-touch 3D navigation, giving users even more freedom when interacting with their 3D content. Supported devices are the Wacom® Intuos 5 touch tablet, Cintiq 24HD and Cintiq Companion, as well as touch-enabled Windows 8 devices. These devices enable natural interactions using a pen in one hand, while the other hand simultaneously performs multi-finger gestures to orbit, pan, zoom, or roll the scene.

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## Easier Revit and SketchUp Workflows

Users can now directly import and file link Revit RVT files into 3ds Max using a new, tighter Revit integration, first introduced in 3ds Max 2015 Extension 2. Artists can bring Revit models into 3ds Max up to 10x faster than before, and the new integration provides enhanced features such as improved instancing, additional BIM data, and multiple cameras. In addition, artists using SketchUp can now take their design further in 3ds Max by importing their SketchUp 2015 files.

## Workflow Improvements

3ds Max 2016 is packed with workflow improvements across different areas: Enhancements to the ShaderFX real-time visual shader editor offer expanded shading options and better shader interoperability between 3ds Max, Maya, and Maya LT so that artists and programmers can create and exchange advanced shaders more easily. Working with complex scenes is now easier thanks to increased performance and stability improvements in the Scene Explorer and improvements in the Layer Manager. Enhancements to the Nitrous viewport provide improvements in performance and visual quality.

## Added Support for New Iray and mental ray Enhancements

Rendering photorealistic images is now easier thanks to a number of supported Iray<sup>®</sup> and mental ray<sup>®</sup> enhancements:

- Iray Light Path Expressions (LPEs) are now extended to allow artists to isolate objects and lights into LPE render elements based on their layer name. This greatly enhances an artist's ability to adjust specific lights or explore design options for specific objects in post-production. The new Iray irradiance render element support provides artists with feedback on illumination levels in their model, while support for Iray section planes enables them to easily look inside their designs without complex modeling.
- mental ray now includes Light Importance Sampling (LIS) and a new Ambient Occlusion render element. LIS produces faster, higher-quality images in complex scenes. The new AO render element has GPU acceleration with graceful CPU-fallback.

## Support for Autodesk Translation Framework and Inventor Animation

Autodesk Translation Framework (ATF) simplifies data exchange of both Autodesk and 3rd-party file formats, including SolidWorks<sup>®</sup>. Users no longer need a license of SolidWorks installed in order to import a SolidWorks assembly. Moreover, with the ability to import Autodesk<sup>®</sup> Inventor<sup>®</sup> constraints and Joint Drive animation into 3ds Max as baked keyframes, users can now create high-quality mechanical design animations without having to rig in 3ds Max.

## Creative Market Connection

The Autodesk Creative Market is an online marketplace, where artists can buy and sell assets to use in their creative projects. 3ds Max users can browse Creative Market to supplement their creative projects with high quality content created by other users in the community.

## Small User Requested Features - SURFS

With the understanding that small things can make a big difference in the everyday life of 3ds Max users, 3ds Max 2016 addresses up to 10 workflow obstacles identified as high priority by customers. Among these are a new Viewport Selection Preview, Cut Tool Improvements, and the ability to visualize hard and smooth edges. Customers can suggest features and vote on current suggestions using the [User Voice](#) forum.